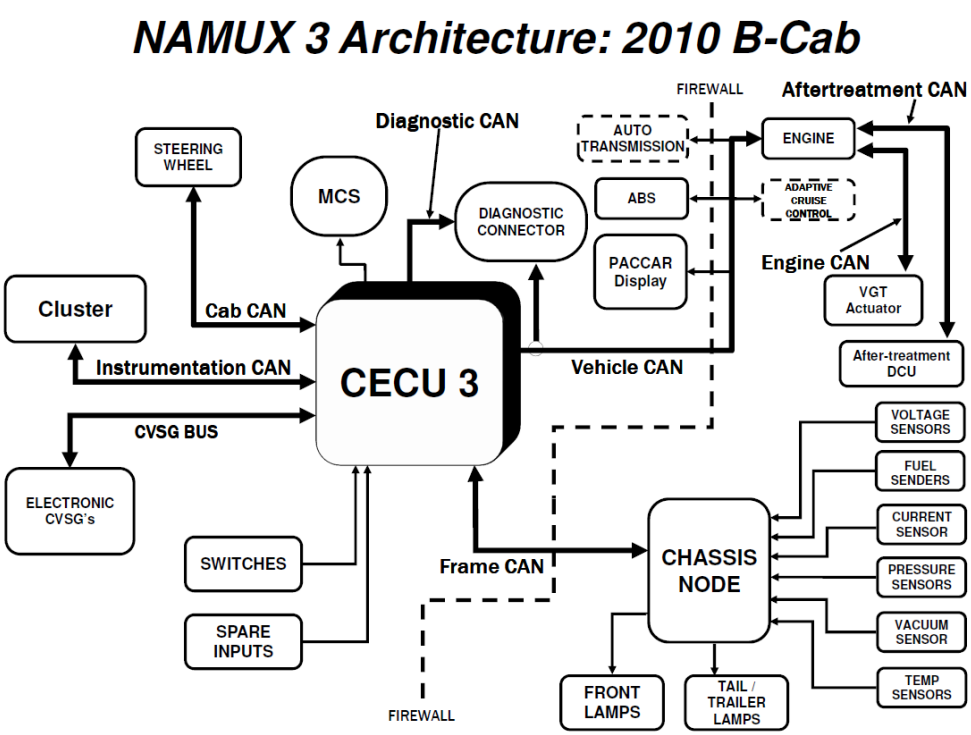
2013 PACCAR MX-13
Diagnostic Service Manual
EPA2013

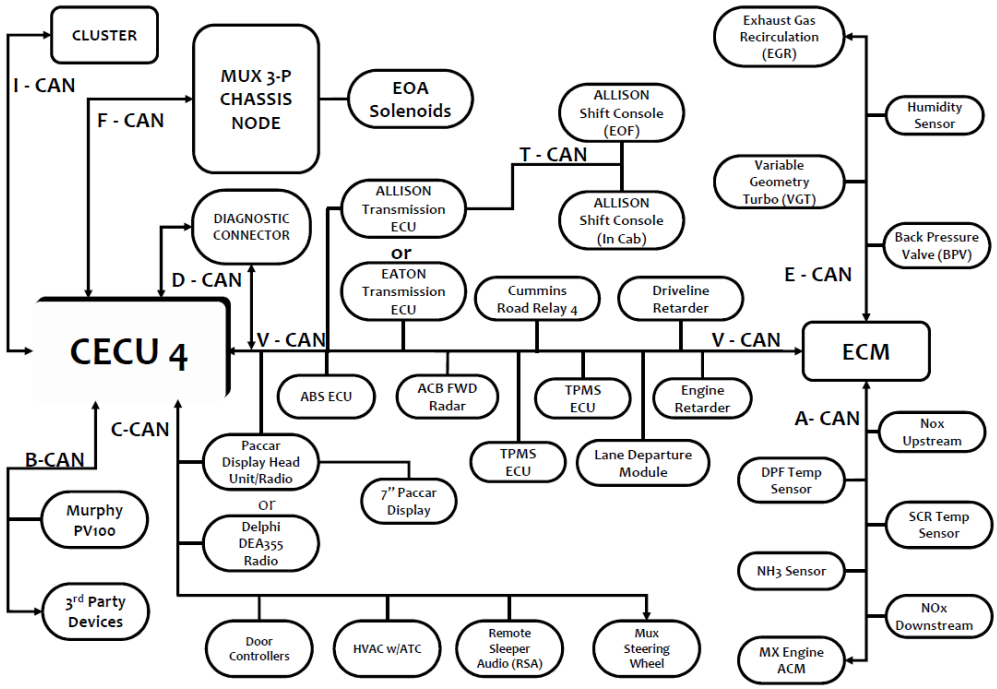
(U0101 to U1574)

Index

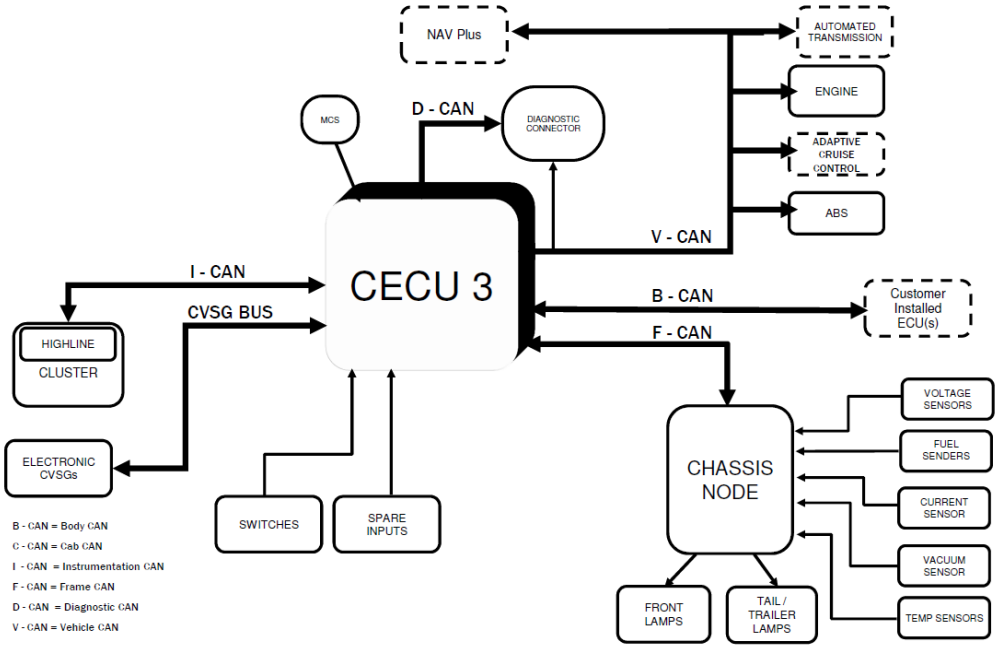
U0101

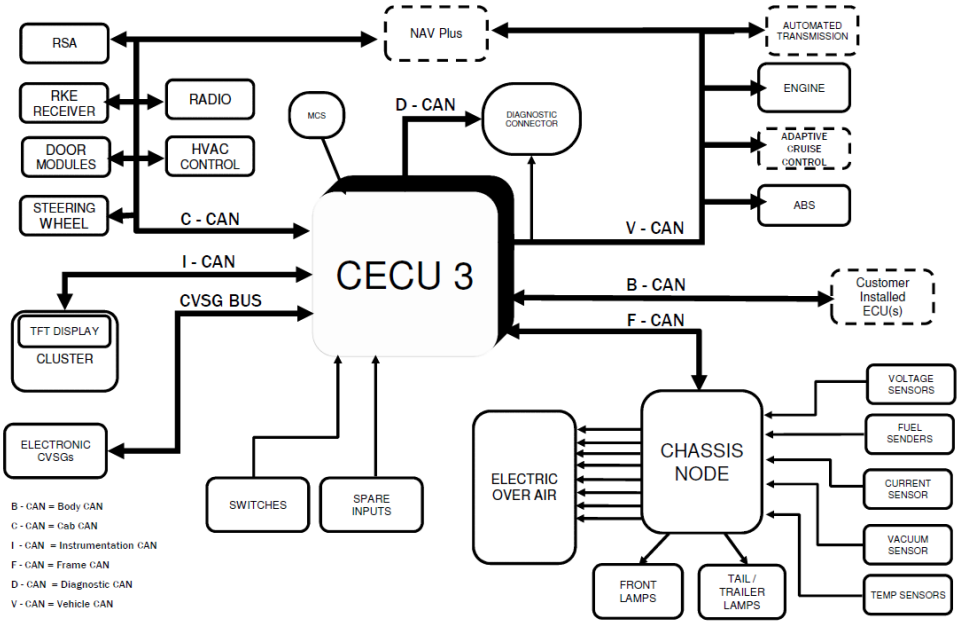
Code number	U0101
Fault code description	CAN communication - Message (ETC7) rate too low from transmission system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Open circuit, short circuit to ground or short circuit to supply in the CAN network wiring
Additional information	No additional information available.
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 0101a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.		

Was there evidence of any of the above?

- No: Proceed to step 2.
- Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

- If this related fault is no longer active, then this issue has been resolved.
- If this related fault is still active, Proceed to step 2

Step 2	Step ID 0101b	SRT

Data check

- Lookup the technical data of the specific system
- Perform the checking data test of the specific component

Is test pass?

- No: Proceed to step 3
- Yes : Proceed to step4

Step 3	Step ID 0101c	SRT

Repair or replace component

- Repair or replace the component, also check for electrical connection and wiring harness .
- Reconnect the connector
- ON the ignition key

Use DAVIE to re-check for the presence of active faults:

- Is DTC fault active: Proceed to step 4
- Is DTC fault inactive : Issue resolved. Clear inactive fault.

Step 4	Step ID 0101d	SRT

For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251

Verification Drive Cycle	To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.
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U0103

Code number	U0103
Fault code description	CAN communication - Message (ETC2) rate too low from transmission system
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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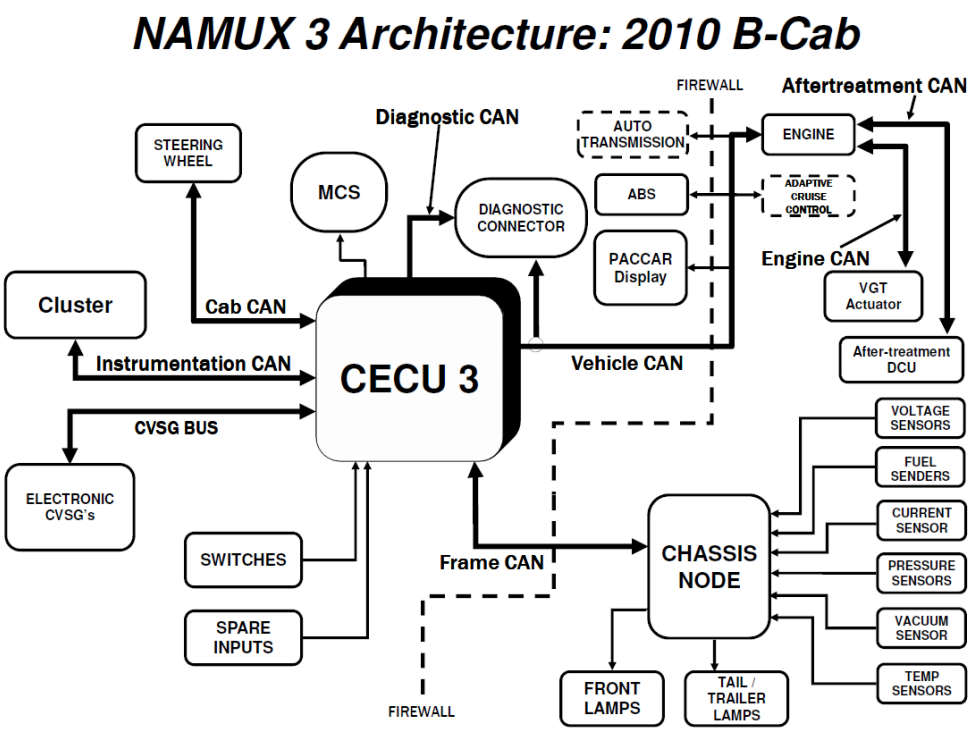
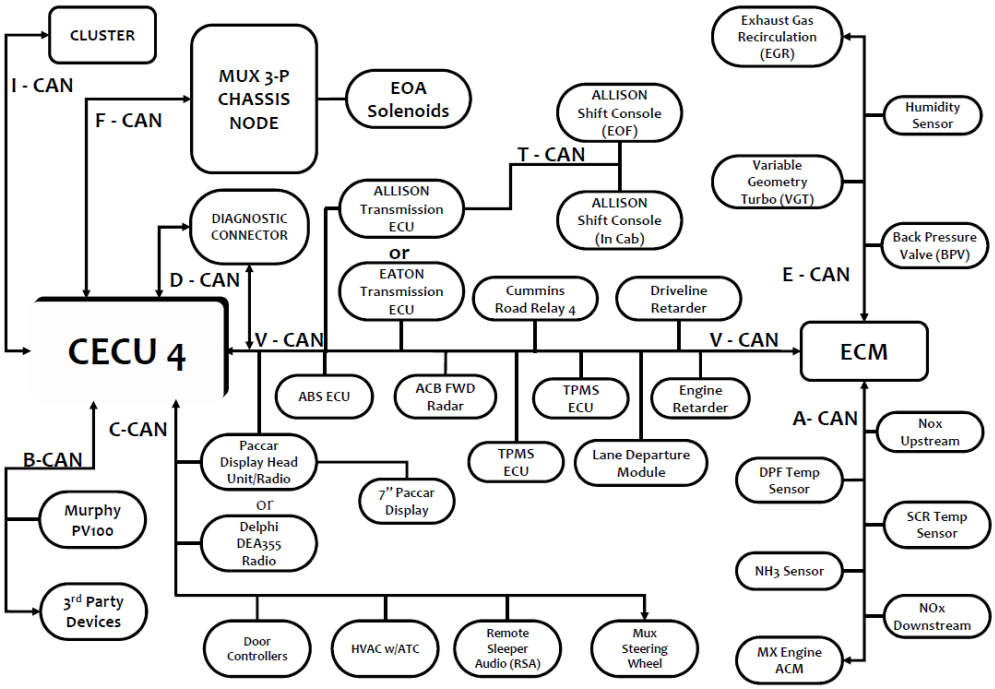
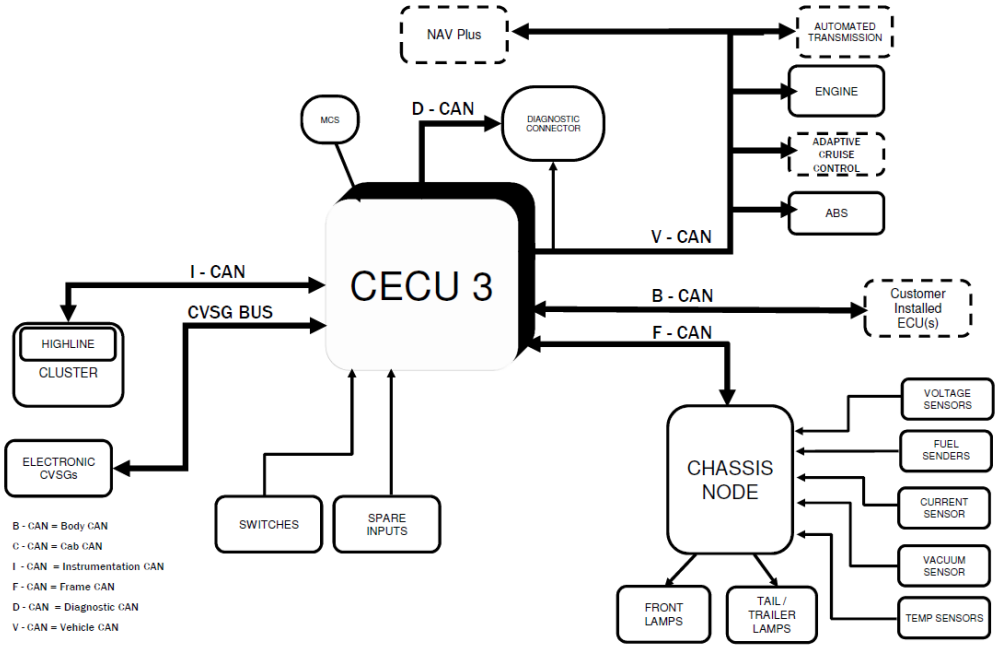
U0104

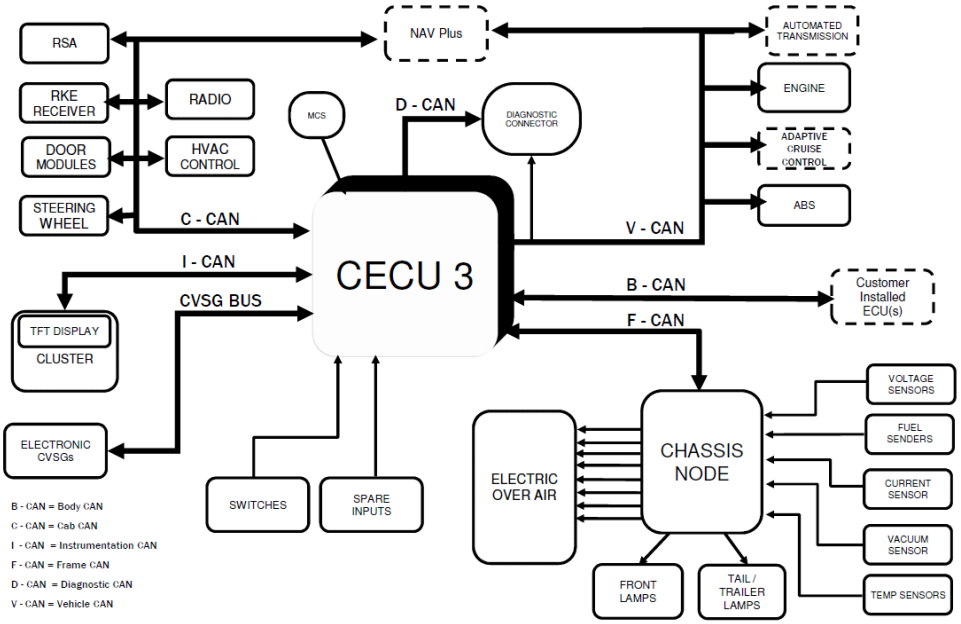
Code number	U0104
Fault code description	CAN communication - Message (CCVS) rate too low from vehicle controller
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Open circuit, short circuit to ground or short circuit to supply in the CAN network wiring
Additional information	No additional information available.
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 0104a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.		

<table>
<tr><td></td><td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 0104b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component

Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

<table>
<tr><td>Step 3</td><td>Step ID 0104c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness .
• Reconnect the connector
• ON the ignition key

Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive : Issue resolved. Clear inactive fault.</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 0104d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

U0105

Code number	U0105
Fault code description	CAN communication - Message (TESTRUN_INFO) rate too low from emission system
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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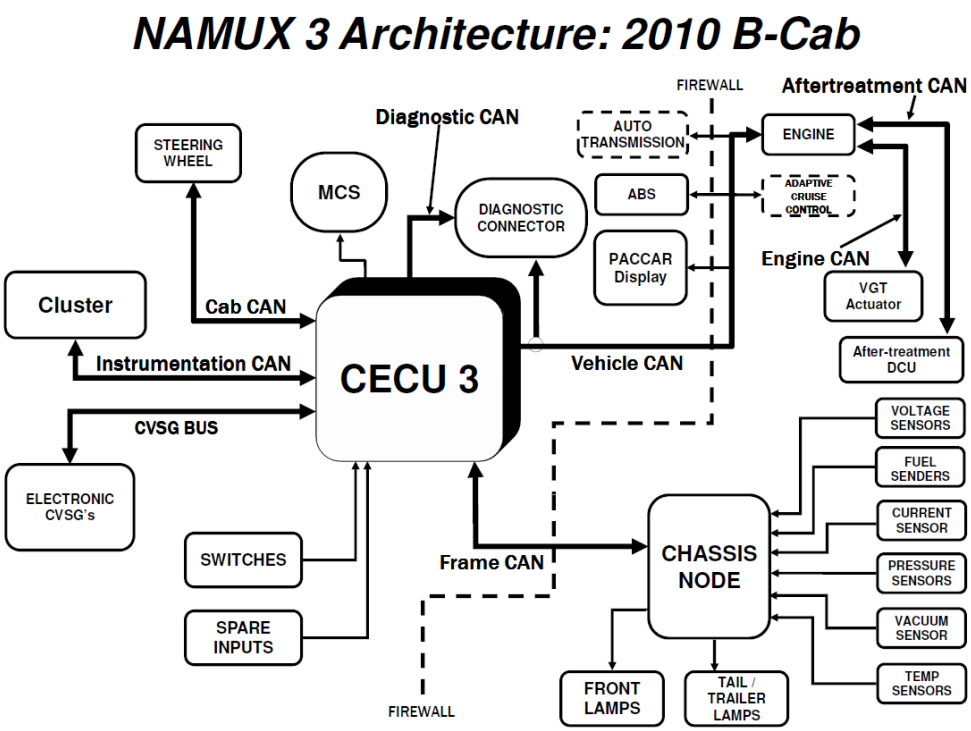
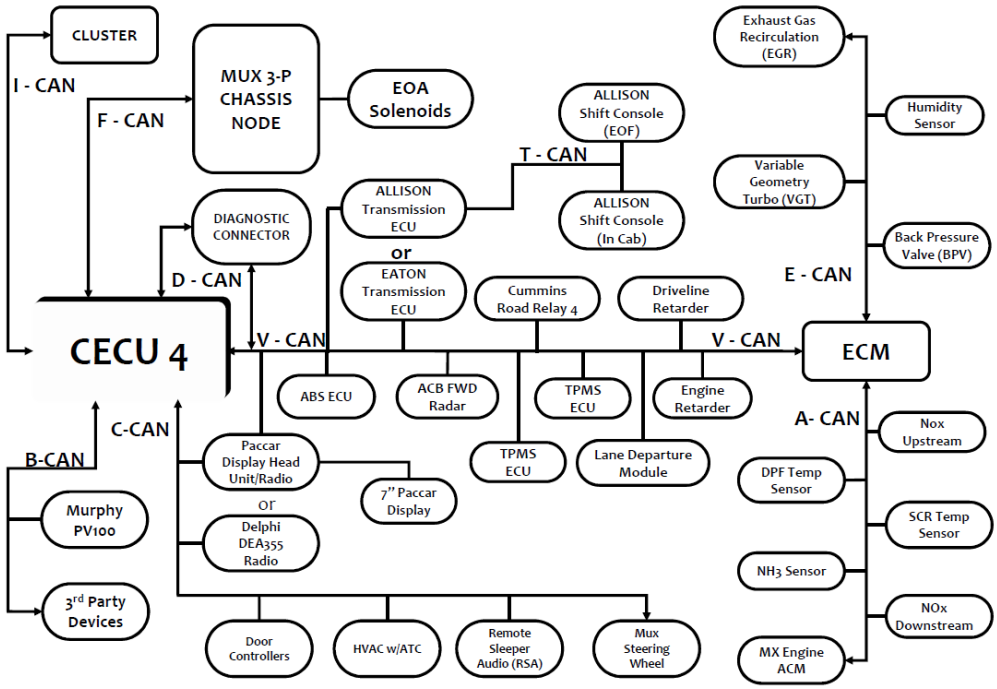
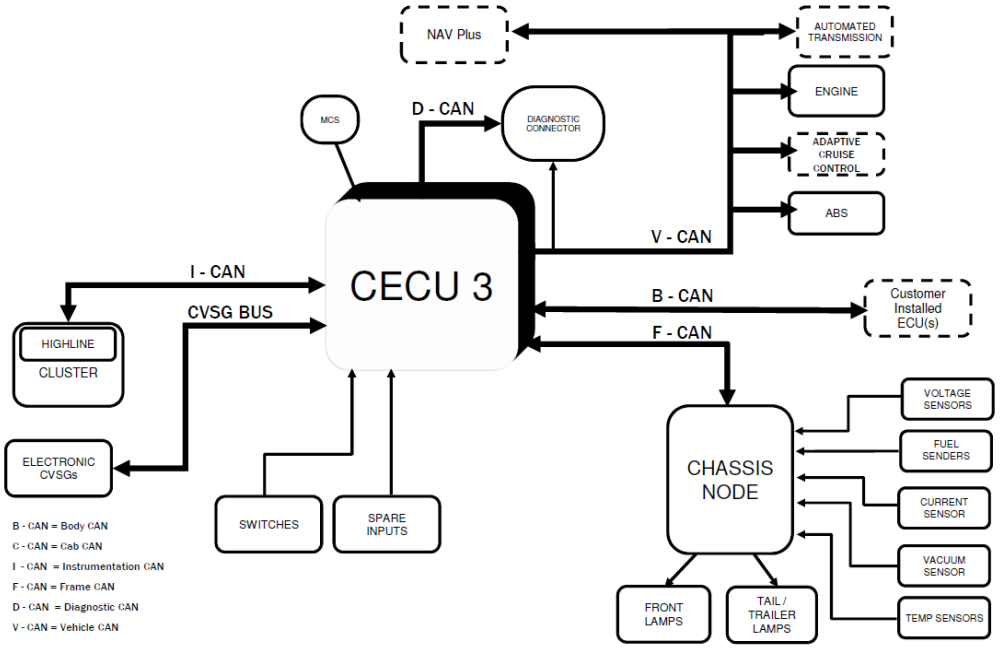
U0106

Code number	U0106
Fault code description	CAN communication - Message (CCVS_EBS) rate too low from brake system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



<table>
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 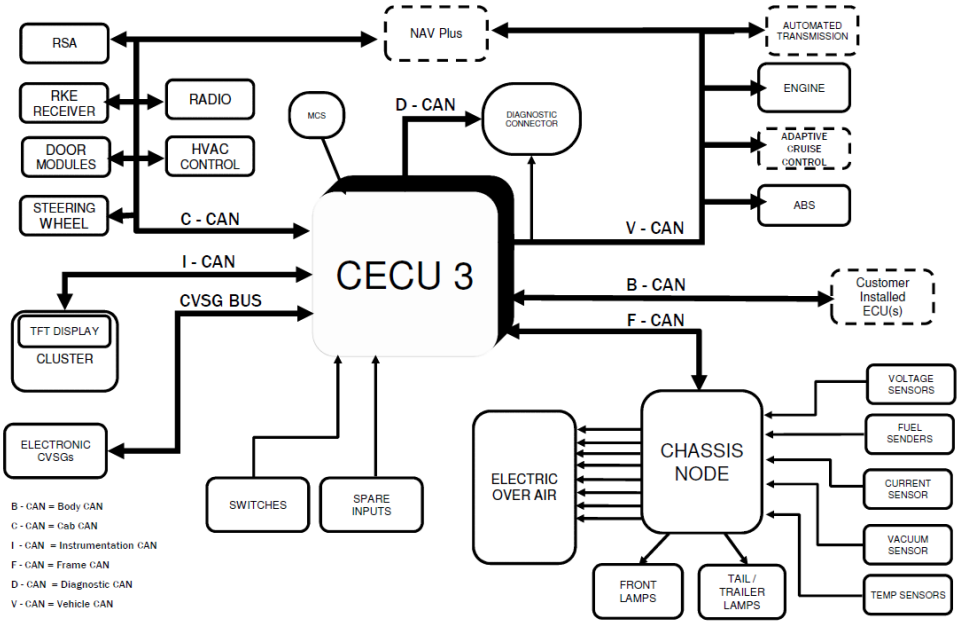
</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>• Breakdown in communication in the CAN network
• Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.
• Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
• For specific electrical component information and pinout locations, always refer to the technical data.
• It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
• Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 0106a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• f this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 0106b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

<table>
<tr><td>Step 3</td><td>Step ID 0106c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness .
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive : Issue resolved. Clear inactive fault</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 0106d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

U0120

Code number	U0120
Fault code description	CAN communication - Message (ETC7) rate too low from transmission system
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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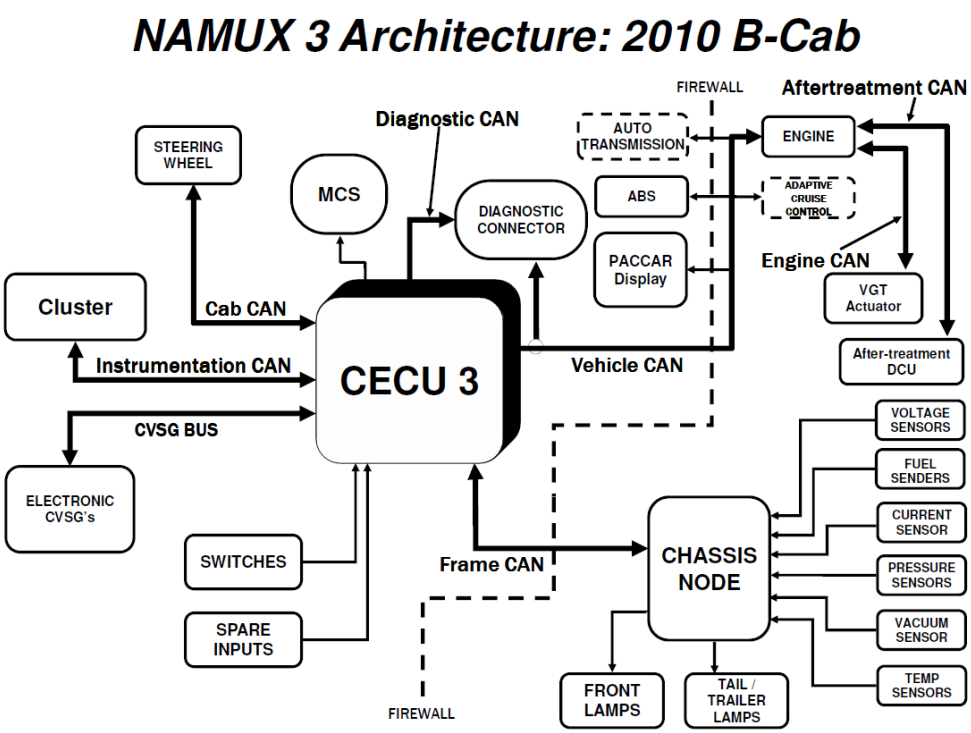
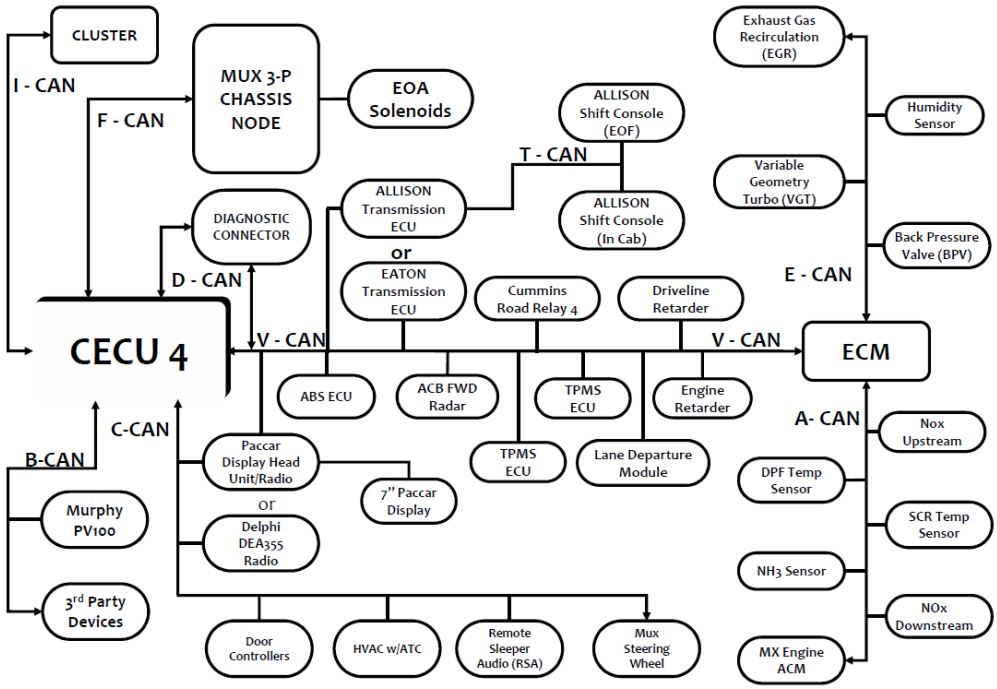
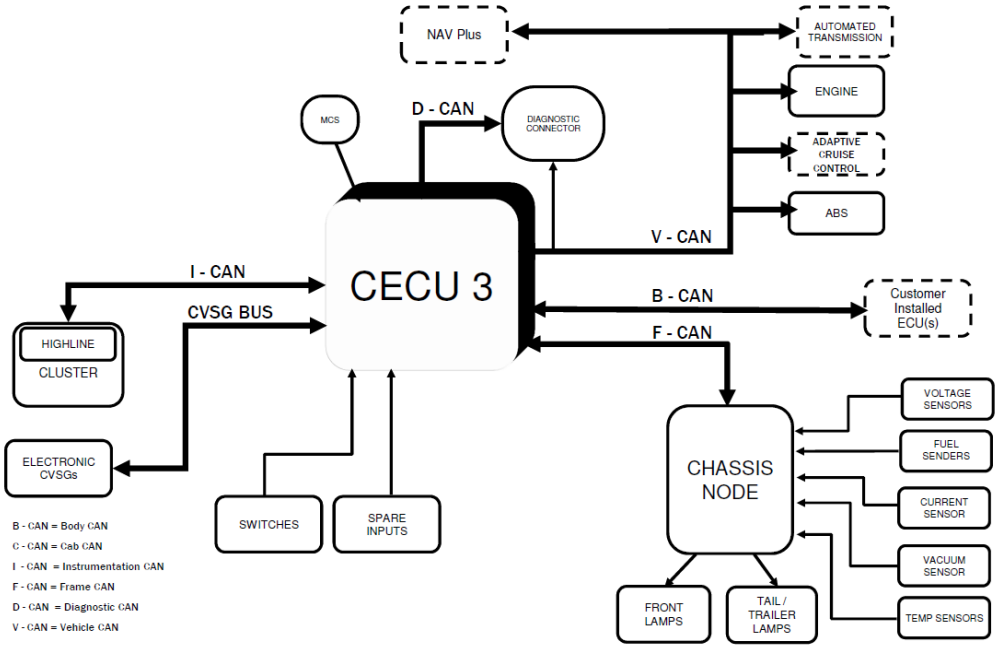
U0129

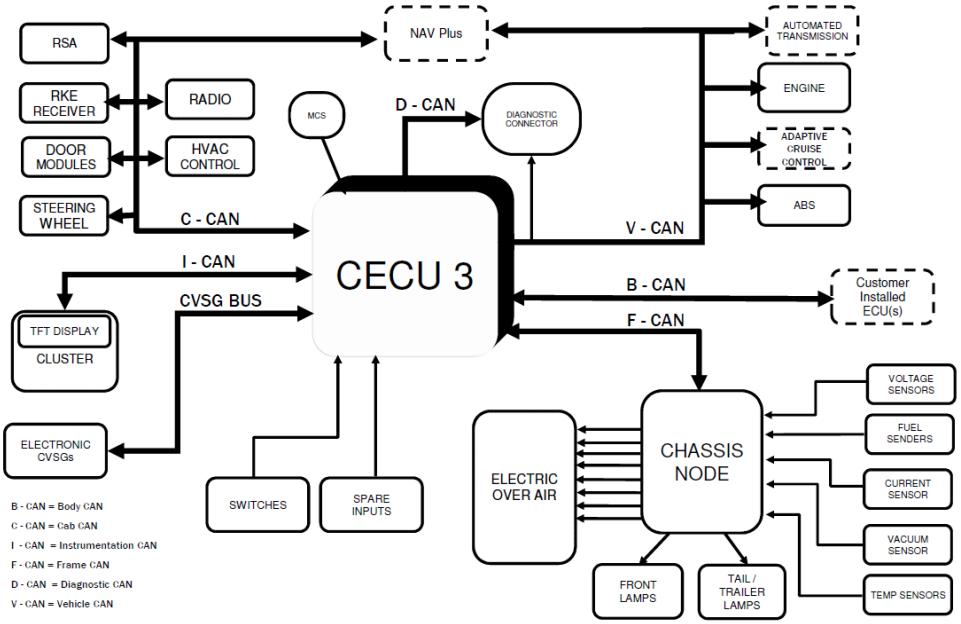
Code number	U0129
Fault code description	CAN communication - Message (EBC1) rate too low from brake system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring
Additional information	No additional information available
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 0129a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.		

	Was there evidence of any of the above? • No: Proceed to step 2. • Yes: Make the appropriate repairs or component replacements. Use DAVIE to re-check for the presence of active faults. • If this related fault is no longer active, then this issue has been resolved. • f this related fault is still active, Proceed to step 2
	Step 2 | **Step ID 0129b** | **SRT** Data check • Lookup the technical data of the specific system • Perform the checking data test of the specific component Is test pass? • No: Proceed to step 3 • Yes : Proceed to step4
	Step 3 | **Step ID 0129c** | **SRT** Repair or replace component • Repair or replace the component, also check for electrical connection and wiring harness . • Reconnect the connector • ON the ignition key Use DAVIE to re-check for the presence of active faults: • Is DTC fault active: Proceed to step 4 • Is DTC fault inactive : Issue resolved. Clear inactive fault
	Step 4 | **Step ID 0129d** | **SRT** For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.
Verification Drive Cycle	To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.
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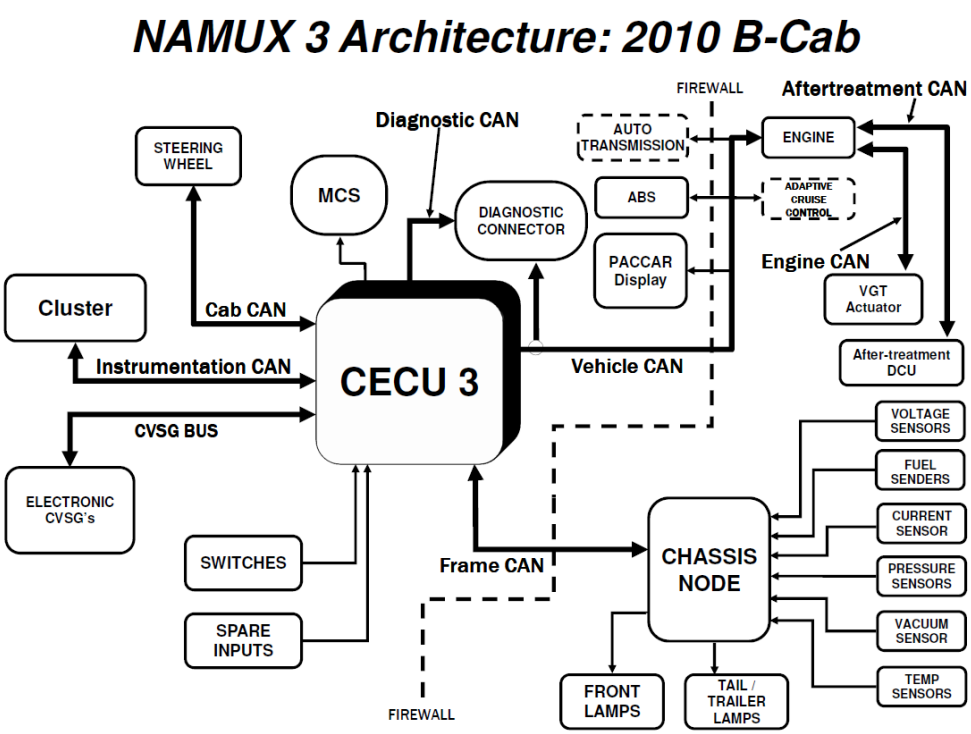
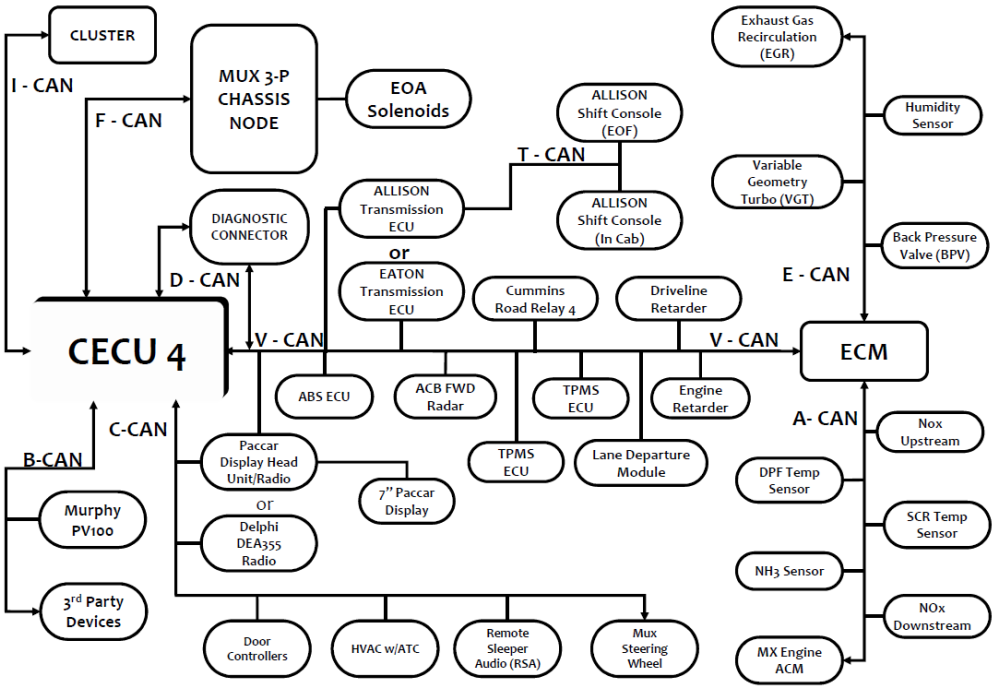
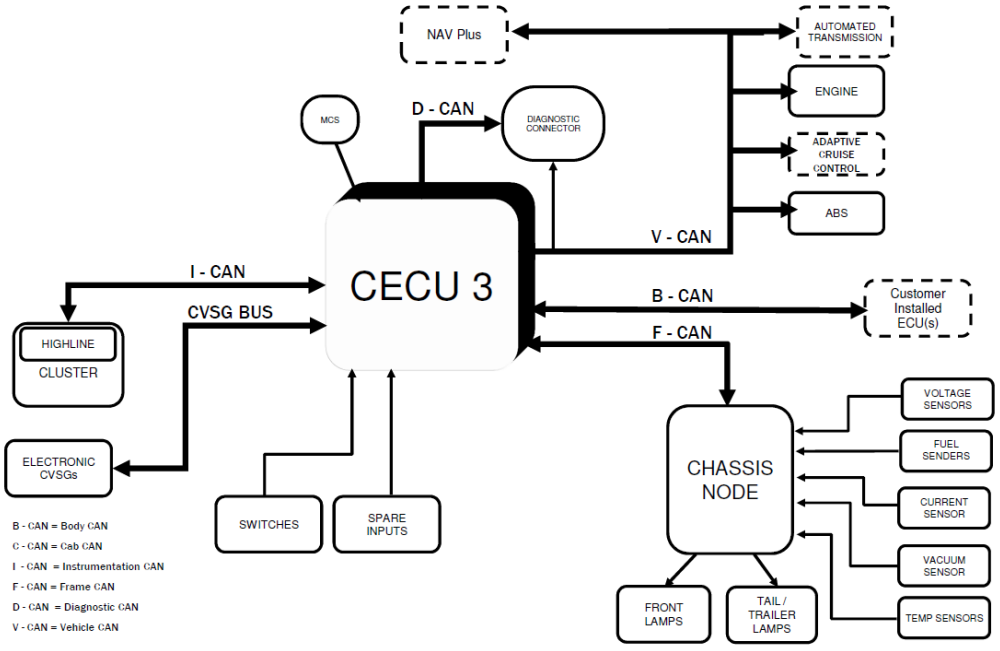
U0133

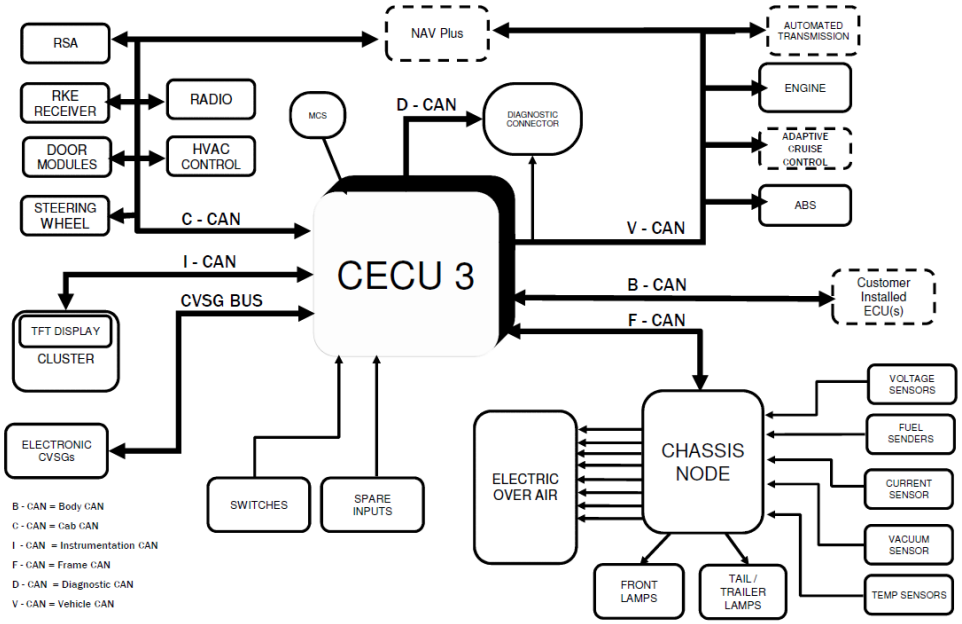
Code number	U0133
Fault code description	CAN communication - Message (VDC1) rate too low from brake system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type - Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Open circuit, short circuit to ground or short circuit to supply in the CAN network wiring
Additional information	No additional information available
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 0133a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.		

<table>
<tr><td></td><td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 0133b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

<table>
<tr><td>Step 3</td><td>Step ID 0133c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive: Issue resolved. Clear inactive fault</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 0133d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

U0141

Code number	U0141
Fault code description	CAN communication - Message (TCO1) rate too low from tachograph
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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U0143

Code number	U0143
Fault code description	CAN communication - Message (EEC2) rate too low
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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U0155

Code number	U0155
Fault code description	CAN communication - Message (PROBA_BBM_to_Eng) rate too low from Body Builder Module
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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U0156

Code number	U0156
Fault code description	CAN communication - Message (PROPB VIC) rate too low from vehicle controller
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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U0157

Code number	U0157
Fault code description	CAN communication - Message (AMB) rate too low from vehicle controller
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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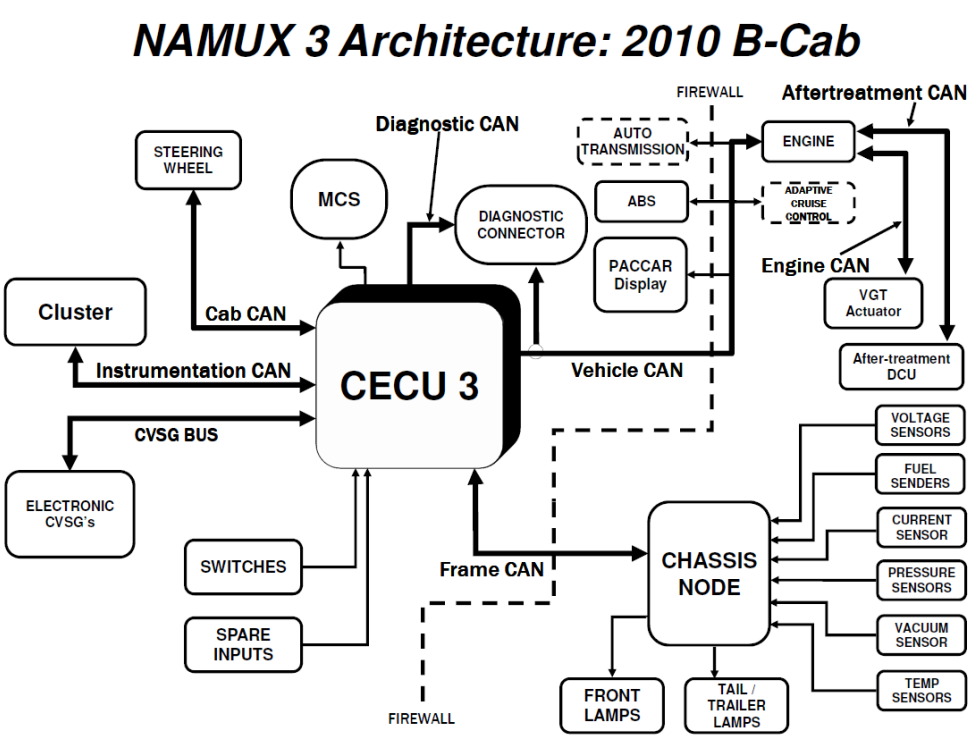
U0404

Code number	U0404
Fault code description	CAN communication - Message (ETC2) out of range - selected gear from transmission system
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
	Back to Index

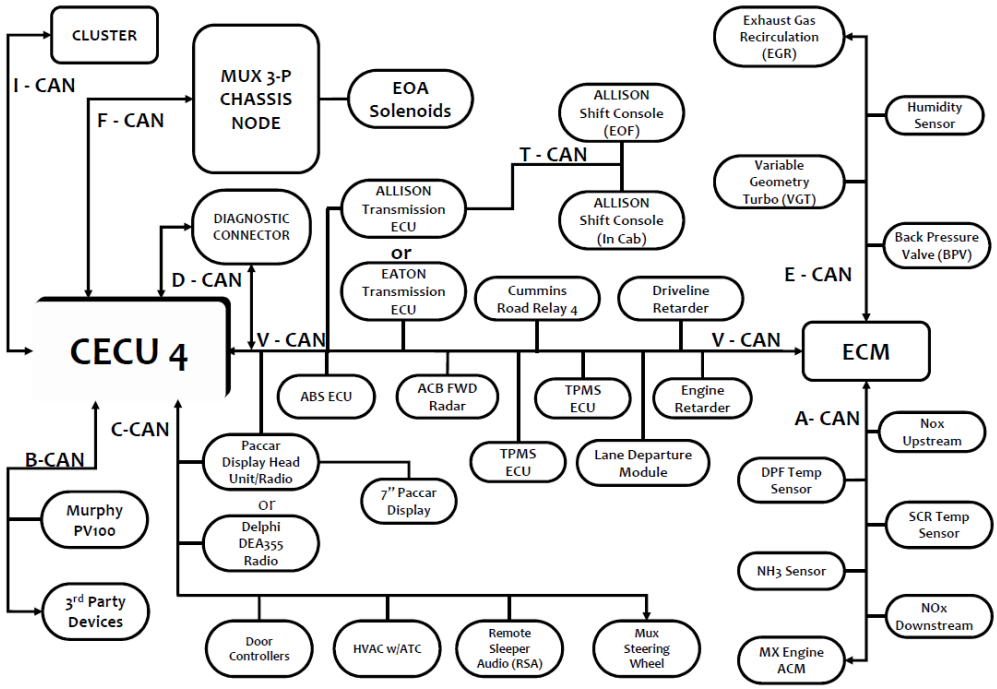
U1011

Code number	U1011
Fault code description	CAN communication - Hardware or software malfunction on E-CAN
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
	Back to Index

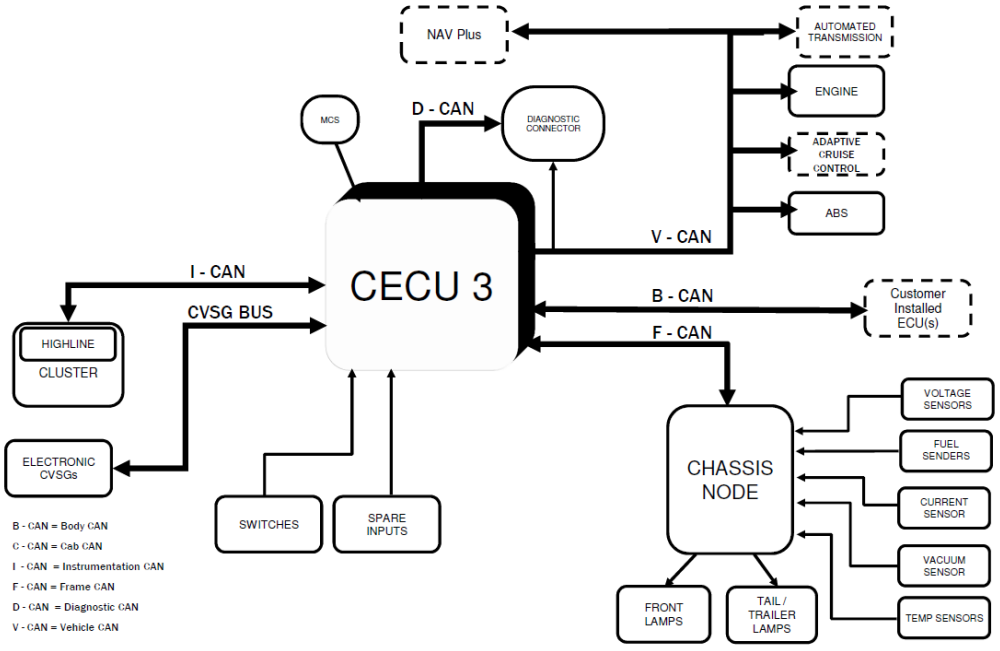
U1014

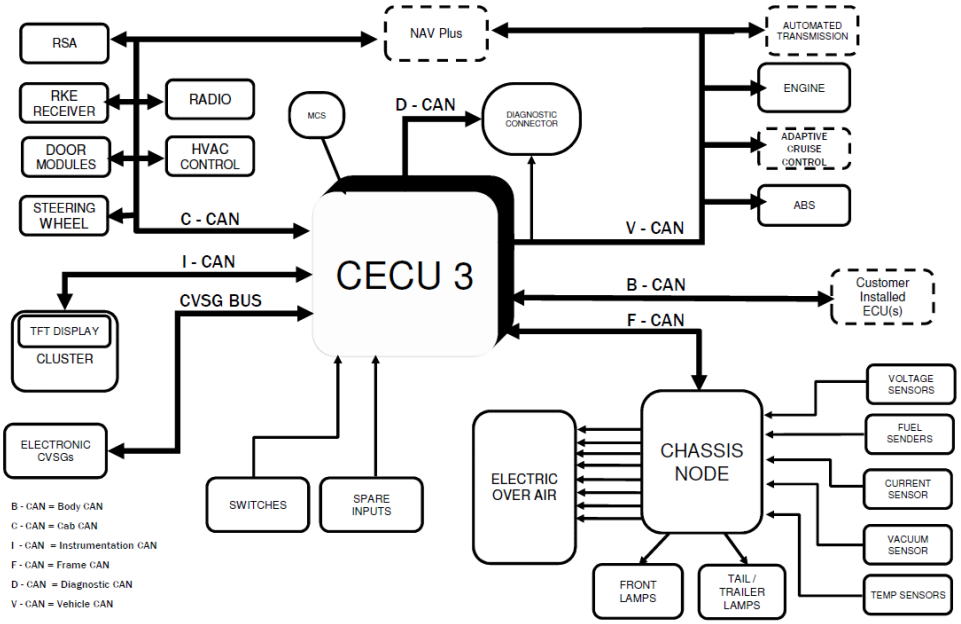
Code number	U1014
Fault code description	CAN communication - Hardware or software fault on V-CAN1.
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Comprehensive
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	Positive acknowledgement after a CAN message is FALSE.
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network. • Open circuit, short circuit to ground, or short circuit to supply in the CAN network wiring.
Additional information	No additional information available.
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1014a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above?		

<table>
<tr><td></td><td>

No: Proceed to step 2.
Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2.

<table>
<tr><td>Step 2</td><td>Step ID 1014b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system.
Perform the checking data test of the specific component.

Is test pass?

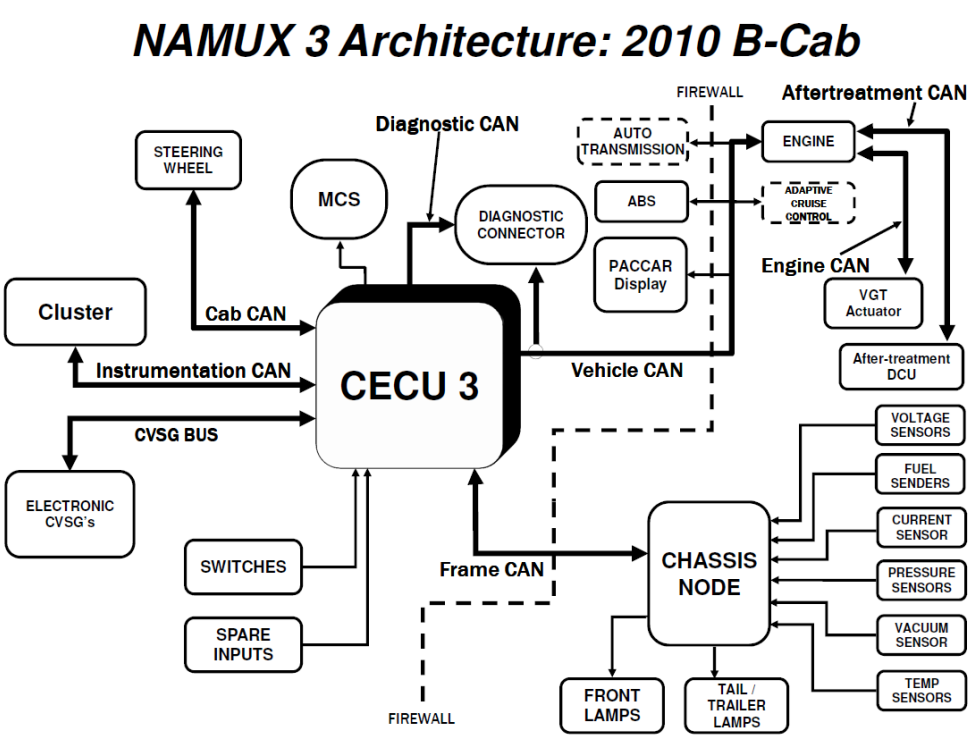
No: Proceed to step 3.
Yes : Proceed to step4.
</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1014c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector.
ON the ignition key

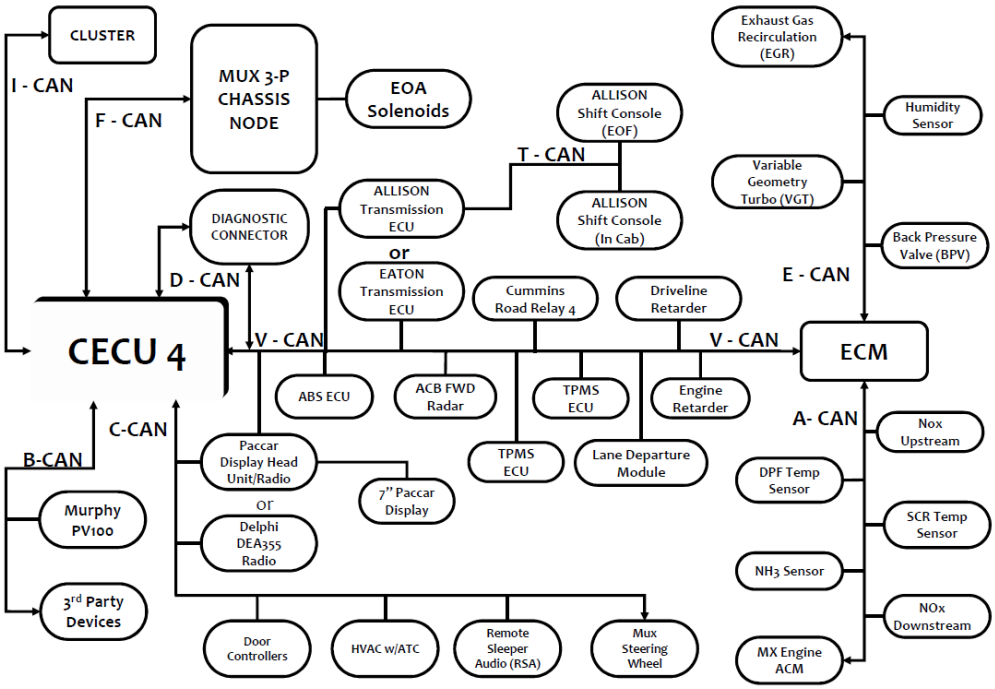
Use DAVIE to re-check for the presence of active faults:

Is DTC fault active: Proceed to step 4.
Is DTC fault inactive: Issue resolved. Clear inactive fault.
</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1014d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

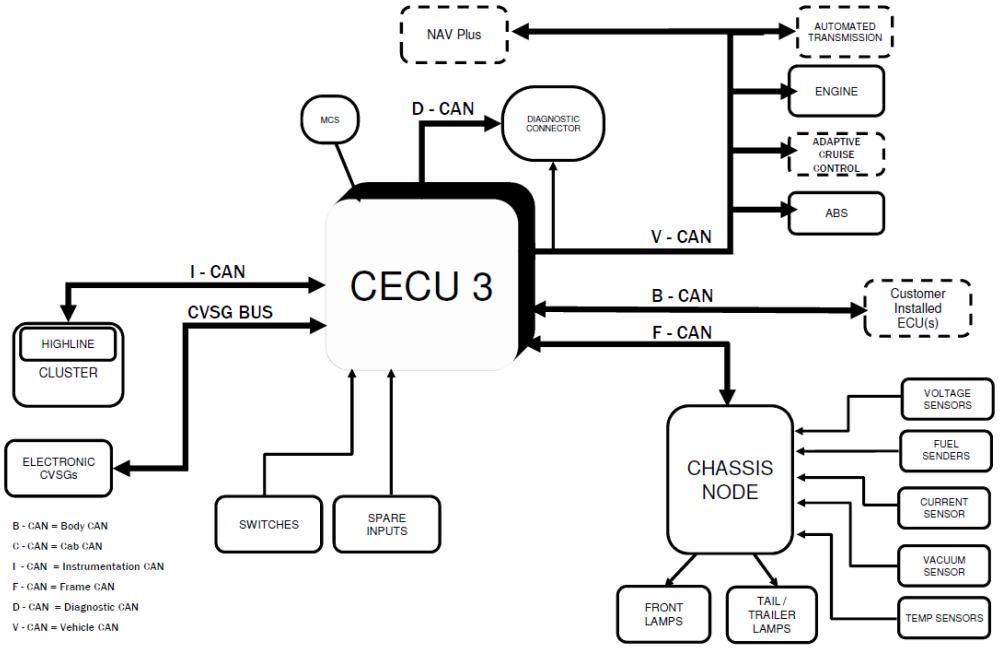
U1015

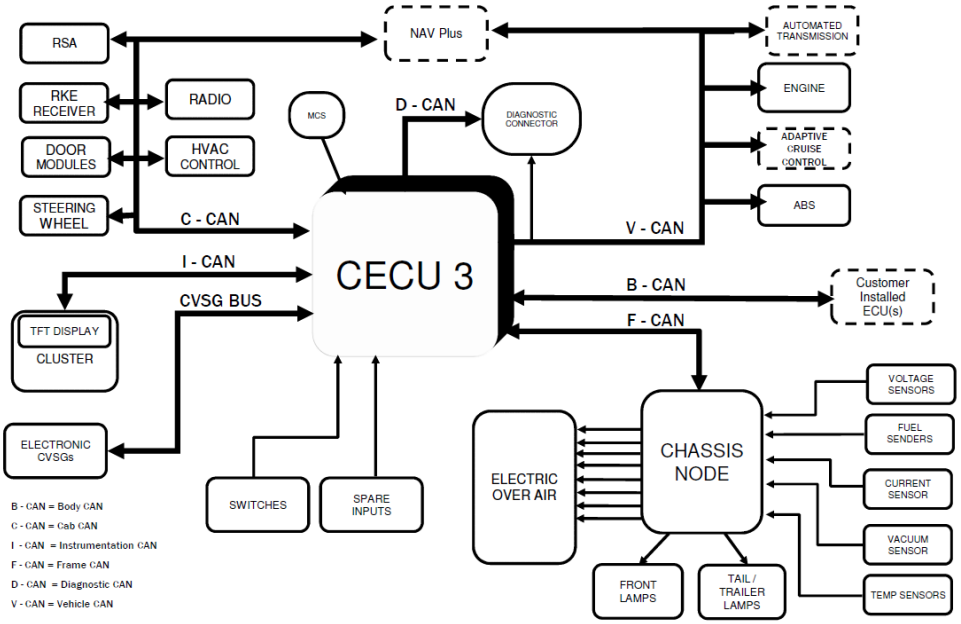
Code number	U1015
Fault code description	CAN communication – Hardware or software fault on A-CAN
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Comprehensive
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	Positive acknowledgement after a CAN message is false.
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network. • Open circuit, short circuit to ground, or short circuit to supply in the CAN network wiring.
Additional information	No additional information available.
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1015a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above?		

<table>
<tr><td></td><td>

No: Proceed to step 2.
Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2.

<table>
<tr><td>Step 2</td><td>Step ID 1015b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system.
Perform the checking data test of the specific component.

Is test pass?

No: Proceed to step 3.
Yes : Proceed to step 4.
</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1015c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector.
ON the ignition key

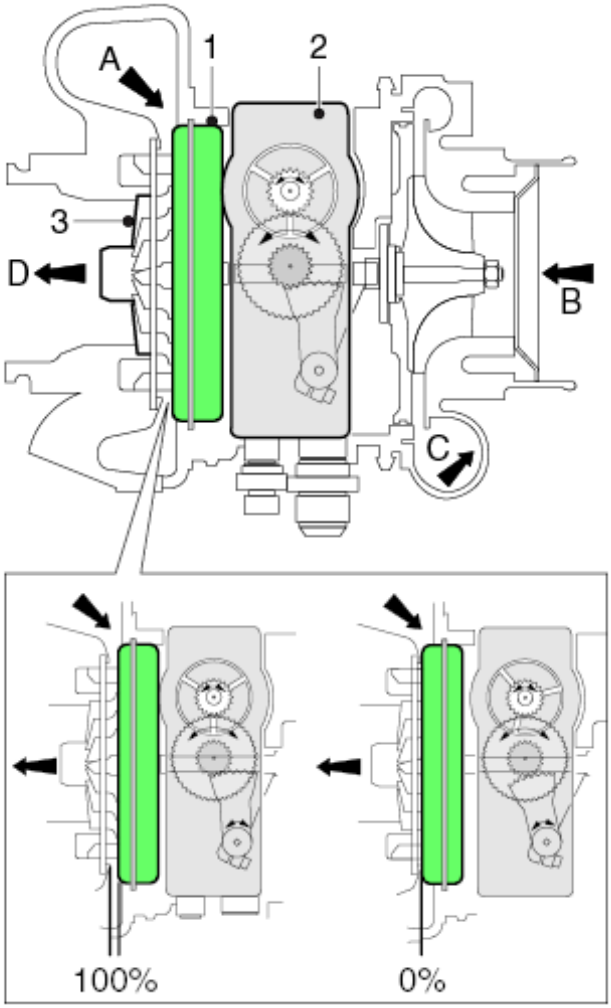
Use DAVIE to re-check for the presence of active faults:

Is DTC fault active: Proceed to step 4.
Is DTC fault inactive: Issue resolved. Clear inactive fault.
</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1015d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

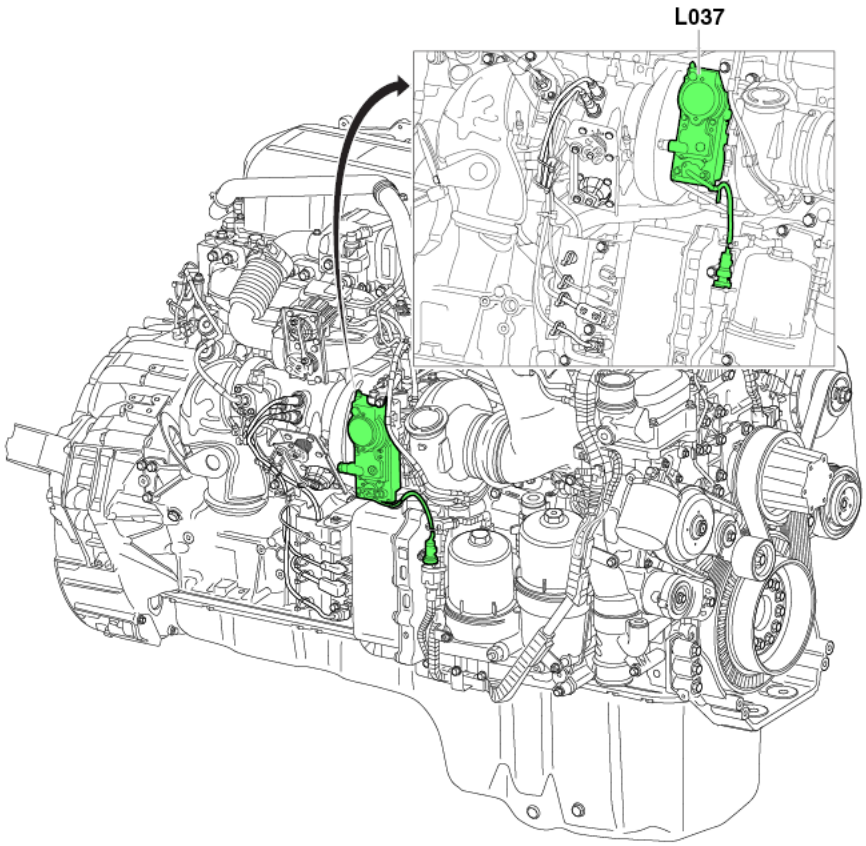
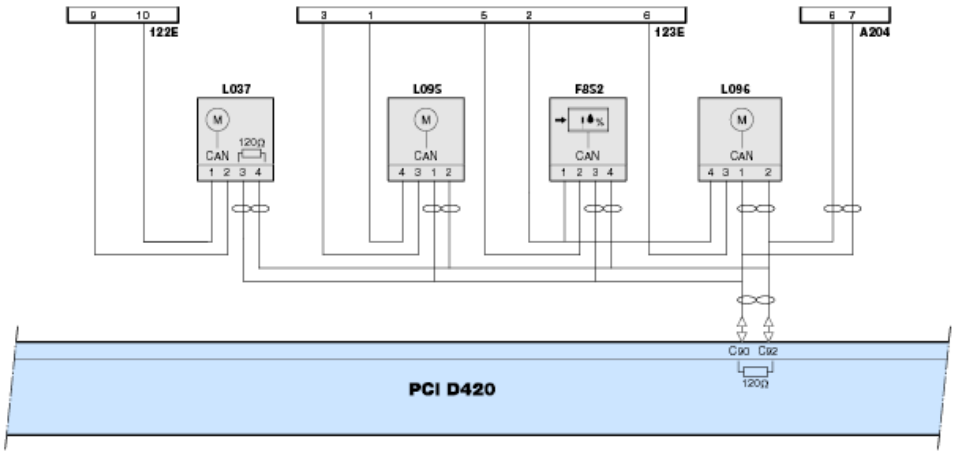
U1016

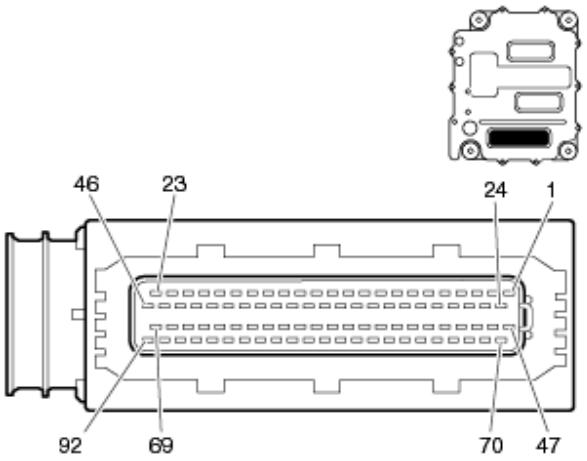
Code number	U1016
Fault code description	CAN communication - Message (A1DOC) rate too low from aftertreatment system
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
	Back to Index

U104C

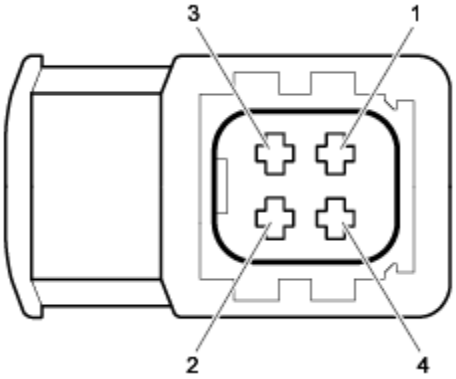
Code number	U104C
Fault code description	VTG turbo charger actuator - CAN communication error
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Boost
Description of component(s)	The main task of the VTG turbo charger actuator is to control the turbo charger nozzle ring position. The gas flow guidance into the turbine rotor is controlled by the position of the turbo charger nozzle ring.  1 Nozzle ring 2 VTG actuator 3 Turbine rotor A Exhaust gas flow to turbine rotor B Inlet air C Boost air outlet D Exhaust gas outlet The main components of the VTG turbo charger actuator are:

	• ECU • Electromotor The electromotor rotates the output shaft via internal gears. • output shaft The nozzle ring mechanism is moved via a sector gear by rotating the output shaft • output shaft position sensor The position of the actuator output shaft is monitored with an internal sensor and a reference magnet (reference point). • temperature sensor The temperature of the printed circuit board of the ECU is monitored. Control The VTG turbo charger actuator is a smart actuator that communicates with the PCI ECU via E-CAN. The actuator ECU is controlled by the PCI ECU but has its own diagnostics on the following actuator inputs and outputs: • power supply voltage • electromotor current The effort to move the nozzle ring is monitored. • output shaft position The mechanical end positions of the nozzle ring mechanism are monitored. • ECU printed circuit board temperature • ECU hardware and software Learn sweep After the ignition is keyed on, a learn sweep is performed by the actuator. During this sweep the VTG turbo charger nozzle ring is fully opened and fully closed to check the mechanical end positions of the nozzle ring mechanism. Unpowered and fail-safe position The unpowered and fail-safe position of the actuator is 80%. If a failure is detected the VTG actuator moves to the fail-safe position, if possible Effect of actuator on the system: • controlling the VTG turbo charger • In general, a lower opening percentage results in a higher turbo speed and therefore in a higher boost pressure. The controlled opening percentage also depends on other conditions, such as the required EGR flow (pressure before turbine). • Controlling the pressure before turbine to generate EGR flow and back pressure during engine braking.

Location of component(s)	
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	The VTG turbo charger actuator (L037) detects that the cyclic CAN command message transmitted by the PCI ECU (D420) is missing.
Reset condition of fault code	This DTC will change to inactive immediately after the diagnostic runs and passes.
Electrical diagram(s)	



Wiring harness connector D420.C front view



Wiring harness connector L037

122E 12-pin interface connector
123E 7-pin interface connector
A204 electronic fan interface connector
D420 PCI ECU
F852 humidity sensor
L037 VTG turbocharger actuator
L095 EGR valve module
L096 BPV valve

D420	L037	Function
C90	3	E-CAN high
C92	4	E-CAN low
	1	Power supply after ignition
	2	Ground

Technical data

Component check, VTG turbocharger actuator (L037)
Preparation

- Key off the ignition.
- Disconnect connector L037
- Measure on component L037

Pin (+ probe)	Pin (- probe)	Value	Additional information

	3 4 ± 120 Ω Wiring check, VTG turbocharger actuator (L037) Preparation • Key off the ignition. • Disconnect connector L037 • Measure on component connector L037 Pin (+ probe) / Pin (- probe) / Value / Additional information 1 / 2 / Ubat / Ignition keyed on 3 / 4 / ± 120 Ω / Ignition keyed off Ground cable from the battery disconnected Vehicle Communication Interface (VCI) of DAVIE disconnected
Possible causes	Bad CAN communication
Additional information	• The VTG turbo charger actuator (L037) is controlled by a cyclic CAN command message transmitted by the PCI ECU (D420) in which the operating mode and the target position are demanded. • The actuator motor moves to a position of 80% and is switched off with this fault active.
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

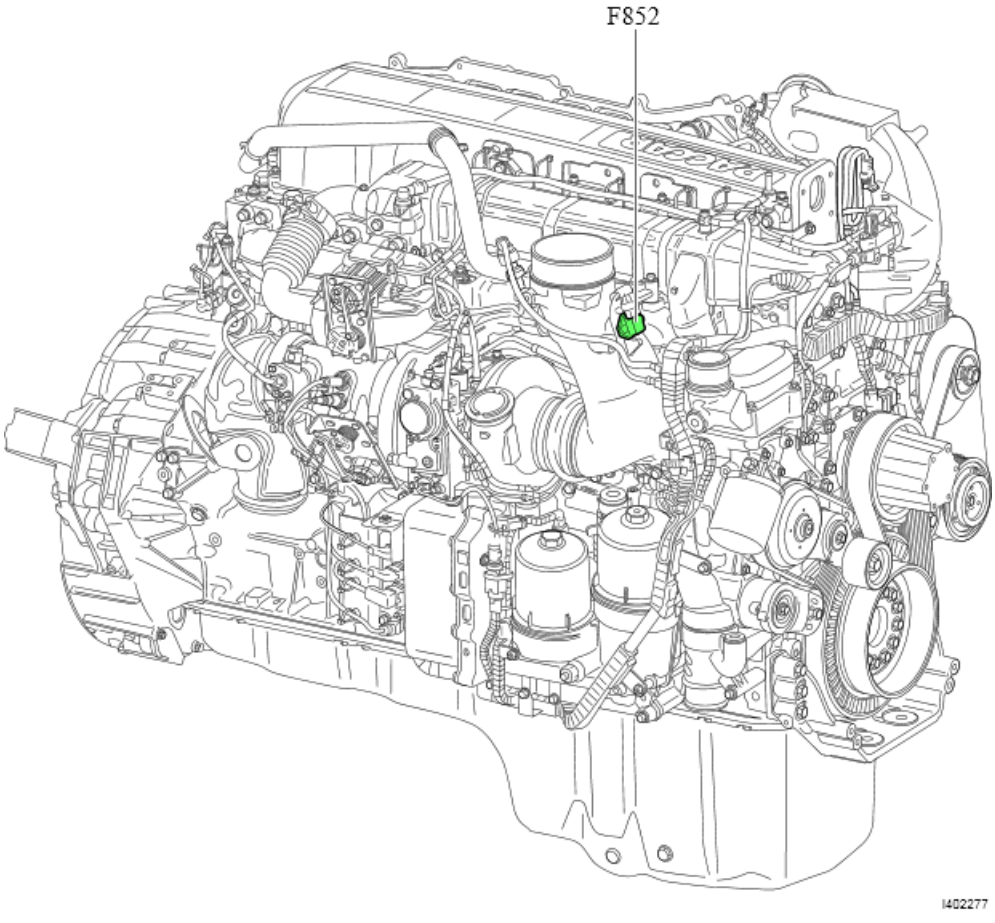
Step 1	Step ID 104C-a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above? • No: Proceed to step 2. • Yes: Make the appropriate repairs or component replacements. Use DAVIE to re-check for the presence of active faults. • If this related fault is no longer active, then this issue has been resolved. • If this related fault is still active, Proceed to step 2		

Step 2	Step ID 104C-b	SRT

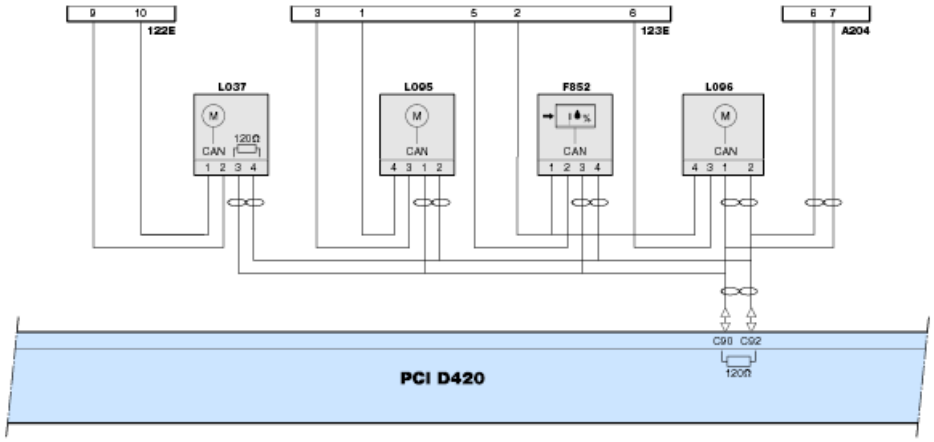
<table>
<tr><td></td><td>
Data check
Lookup the technical data of the specific system.
Perform the checking data test of the specific component.
Is test pass?
No: Proceed to step 3
Yes : Proceed to step 4
<table>
<tr><td>Step 3</td><td>Step ID 104C-c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector.
ON the ignition key
Use DAVIE to re-check for the presence of active faults:
Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 104C-d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

U1069

Code number	U1069
Fault code description	Inlet air pressure before compressor - Data erratic, intermittent or incorrect
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Crankcase
Description of component(s)	**Humidity sensor (F852)** The humidity sensor is a smart sensor that communicates with the PCI ECU via E-CAN. The sensor is positioned in the air inlet pipe before the turbo compressor and measures the following parameters: • Relative humidity • Temperature • Pressure **Inlet air humidity – before the turbo compressor** The relative humidity refers to the moisture percentage of the air. **Effect on the system** • Determines NOx emissions Higher measured relative humidity results in a lower calculated NOx emission. **Inlet air temperature – before the turbo compressor** • Determines soot emissions Higher measured precompressor temperature results in lower calculated soot formation in the engine. • Calculates exhaust gas pressure before the turbine; Higher measured precompressor temperature results in lower calculated exhaust gas pressure before the turbine. • Limits the maximum engine torque; for example, to limit the cylinder pressures during cold ambient conditions or driving at high altitudes. • to determine turbo charger compressor flow and thus the detection of VTG surge; Surge can typically occur at high compressor pressure ratios and low compressor mass flows. • calculation of the temperature after the turbo charger compressor; A higher measured pre-compressor temperature results in a higher calculation for the temperature after the turbocharger compressor. **Inlet air pressure - before the turbo compressor** • Corrects pressure before turbine Higher measured precompressor pressure results in higher calculated exhaust

	gas pressure before the turbine. • Determines soot emissions Higher measured precompressor pressure results in lower calculated soot formation in the engine. • Calculates the temperature after the turbocharger compressor A lower measured pre-compressor pressure results in a higher calculated temperature after the turbo charger compressor. • Limits the maximum engine torque when driving at high altitudes (low air density) Lower measured precompressor pressure results in higher engine torque reduction. • Detects VTG surge, the sensor is used to determine the compressor pressure ratio; surge can typically occur at high compressor pressure ratios and low compressor mass flows.
Location of component(s)	**Humidity sensor (F852)** 
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	The PCI ECU (D420) receives a CAN message from the humidity sensor (F852) that

	contains an out-of-range value for the pressure.
Reset condition of fault code	This DTC changes to inactive after the ignition is keyed off for at least 15 seconds and keyed on again, and the fault is no longer detected
Electrical diagram(s)	**Humidity Sensor (F852)**



122E 12-pin interface connector

123E 7-pin interface connector

A204 Electronic fan interface connector

D420 PCI ECU

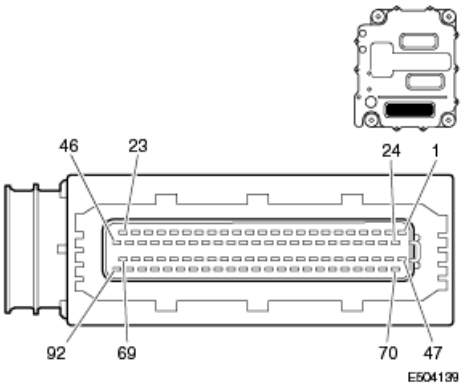
F852 humidity sensor

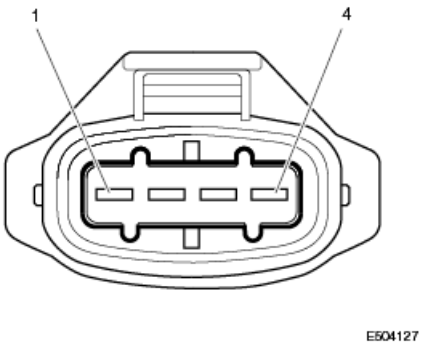
L037 VTG turbocharger actuator

L095 EGR valve module

L096 BPV valve

D420	F852	Function
C90	3	E-CAN high
C92	4	E-CAN low
	1	Power supply after ignition
	2	Ground





	Wiring harness connector D420.C front view **Wiring harness connector F852 front view** Handle connectors and pins with care and use matching measuring probes.
Technical data	**Component check, humidity sensor (F852)** This type of component cannot be checked with a multimeter or oscilloscope. Perform the following to assess the component: • Monitor/test the component with DAVIE • Perform the wiring check **Wiring check, humidity sensor (F852)** **Preparation** • Switch off the ignition. • Disconnect connector F852. • Measure on the front side of wiring harness connector F852.

Pin (+ probe)	Pin (- probe)	Value	Additional information
1	2	Ubat	Switch on ignition
3	4	± 60 Ω	• Switch off ignition • Ground cable from the battery disconnected • DAVIE Vehicle Communication Interface (VCI) disconnected

Possible causes	• E-CAN communication • Faulty humidity sensor
Additional information	The humidity sensor is a smart sensor that communicates with the PCI ECU via E-CAN. The sensor measures the following three properties of the drawn in precompressor (VTG turbo charger) air in the inlet air pipe: • Relative humidity • Pressure • Temperature
Diagnostic Step-by-Step	**The ignition should always be in the OFF position when connecting or disconnecting electrical components to reduce the likelihood of damage to the components.**

- This troubleshooting procedure is based on the assumption that supply power and ground to the PCI are functioning properly.
- Disconnecting the PCI connectors during the troubleshooting process will result in multiple errors.
- Specific electrical component information and pin out locations are provided in this procedure as a reference only. Always refer to the technical data sections in Rapido for the most up-to-date changes.
- It is necessary to use DAVIE to clear all current DTCs from the PCI and EAS-3 ECUs, and then run the Quick Check to identify a change in fault status.
- This DTC can be set as a result of multiple failure modes. For proper fault isolation, complete all troubleshooting steps in the sequence provided.

Step 1 Investigate Related DTCs

Before troubleshooting this DTC, take notice of any other active or inactive DTCs. One or multiple other DTCs could have been the cause for this DTC.

Step 1A Investigate related DTCs	
Action 1. Use DAVIE Diagnostics to perform a Quick Check for current DTCs.	
Are these or any other related DTCs active? P1872	
Yes	**No**
Possible problem with humidity sensor (F852). Refer to the troubleshooting information for these DTCs before continuing with this procedure.	
	Go to step 2A

Step 2 Humidity Sensor (F852) Checks

Step 2A Visual inspection, connections and wiring, humidity sensor (F852)
Action 1. Visually inspect the associated component connections and wiring for any of the following: • Damaged or loose connectors • Bent, broken, corroded or loose connector pins • Moisture or dirt in the connections • Damage to the wire harness or insulation • The correct parts are not installed

- ECU connections are damaged or disconnected
- Batteries not fully charged or contacts are not tight

Was there evidence of any of the above?

Yes	No
Correct any issues found. If the humidity sensor (F852) is found to be damaged or broken, replace it. Refer to step 3A to perform the corresponding repair verification cycles and rechecks.	
If this DTC is still present, go to step 2B	**Go to step 2B**

Step 2B Electrical checks, supply voltage, humidity sensor (F852)

Refer to the corresponding checking data for associated supply and signal voltages, resistance values, and related connector pin test points.

Action

1. Confirm the supply voltage level as outlined in the corresponding checking data, "component check, humidity sensor (F852).

Are measured values within expected range?

Yes	No
	Correct any issues found. Refer to step 3A to perform the corresponding repair verification cycles and rechecks.
Go to step 2C	**If this DTC is still present, go to step 2C**

Step 2B Electrical checks, resistance, humidity sensor (F852) to E-CAN

Refer to the corresponding checking data for associated supply and signal voltages, resistance values, and related connector pin test points.

Action

1. Confirm the resistance value as outlined in the corresponding checking data,

"component check, humidity sensor (F852).	
Is the measured value within expected range?	
Yes	**No**
	Correct any issues found. Refer to step 3A to perform the corresponding repair verification cycles and rechecks.
If all steps have been completed and this DTC is still present, contact the PACCAR Engine Support Center for further assistance.	

Step 3 Repair Verification

Step 3A Repair verification cycles	
Perform these repair verification cycles following any corrective actions taken, to enable related OBD monitors to reach a readiness state associated with the DTC or system being investigated.  Before beginning these repair verification cycles, use the DAVIE Diagnostics, Quick Check function to "Clear all" current DTCs from the PCI and EAS-3 ECUs.	
Action 1. Start-up With the brakes set, start the engine and allow it to run at idle for 2 minutes.	
Were the identified repair verification cycles able to be completed?	
Yes	**No**
	Investigate and correct any issues preventing these repair verification cycles from being completed, then re-run. For additional assistance, contact the PACCAR Engine Support Center.
Go to step 3B	**Go to step 3B**

Step 3B DAVIE Diagnostics, Quick Check, OBD Readiness Monitors	
Action Use DAVIE Diagnostics to perform a Quick Check for current DTCs to determine whether the actions taken have cleared this DTC. 1. Confirm that the corresponding OBD Monitor Readiness Status value is displayed as "Ready." A status of Ready indicates that the corresponding OBD monitor has run successfully and the problem has been resolved—no further action. If the displayed status is "Not ready," continue to action step 2. 2. View the DTC overview display, and confirm that U1069 has been cleared.	
Is the related OBD Monitor Readiness Status set to "Ready." Or, has U1069 been cleared?	
Yes	**No**
Problem resolved. No further actions.	Continue with the next step in this troubleshooting procedure. If all steps have been completed and this DTC is still present: • continue to operate the truck to extend the run time, allowing the corresponding OBD monitor sufficient time to complete • or, return to step 3A and perform this repair verification again. If this issue is still present after extending or re-running the repair verification, contact the PACCAR Engine Support Center for further assistance.

Contacting the PACCAR Engine Support Center

For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the PACCAR Engine Support Call Center.

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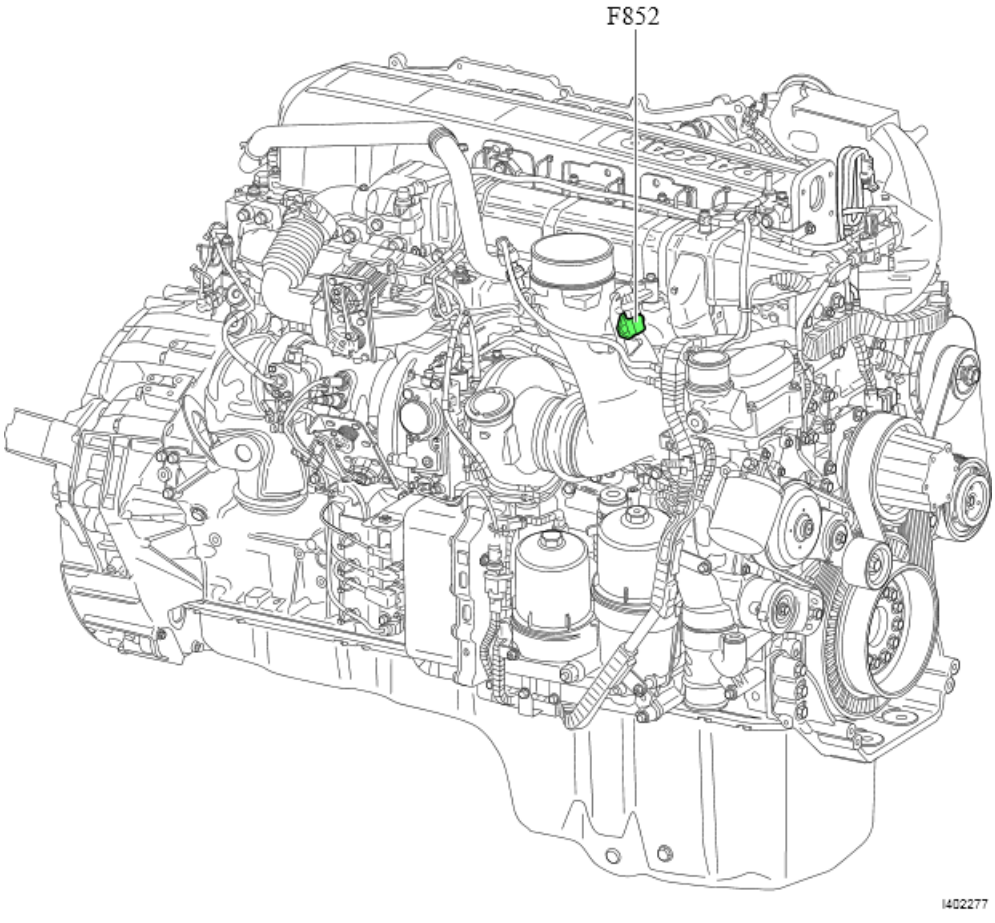
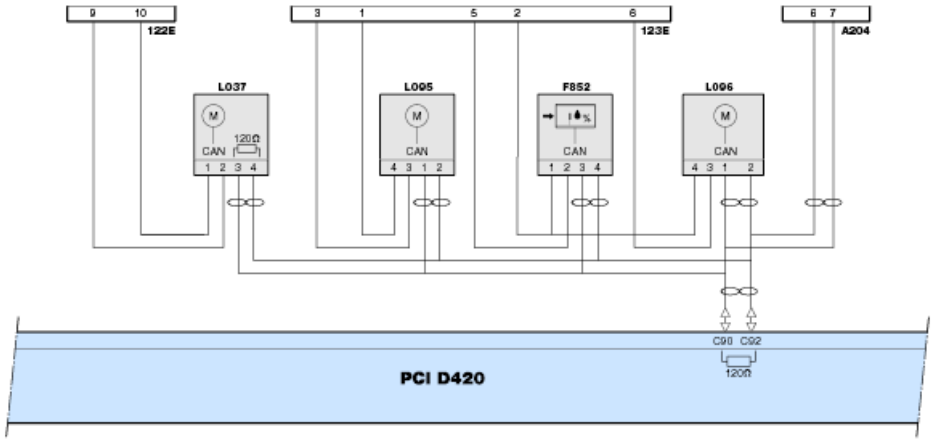
U1071

Code number	U1071
Fault code description	Inlet air humidity before compressor - Data erratic, intermittent or incorrect
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Crankcase
Description of component(s)	**Humidity sensor (F852)** The humidity sensor is a smart sensor that communicates with the PCI ECU via E-CAN. The sensor is positioned in the air inlet pipe before the turbo compressor and measures the following parameters: • Relative humidity • Temperature • Pressure **Inlet air humidity – before the turbo compressor** The relative humidity refers to the moisture percentage of the air. **Effect on the system** • Determines NOx emissions Higher measured relative humidity results in a lower calculated NOx emission. **Inlet air temperature – before the turbo compressor** • Determines soot emissions Higher measured precompressor temperature results in lower calculated soot formation in the engine. • Calculates exhaust gas pressure before the turbine; Higher measured precompressor temperature results in lower calculated exhaust gas pressure before the turbine. • Limits the maximum engine torque; for example, to limit the cylinder pressures during cold ambient conditions or driving at high altitudes. • to determine turbo charger compressor flow and thus the detection of VTG surge; Surge can typically occur at high compressor pressure ratios and low compressor mass flows. • calculation of the temperature after the turbo charger compressor; A higher measured pre-compressor temperature results in a higher calculation for the temperature after the turbocharger compressor. **Inlet air pressure - before the turbo compressor** • Corrects pressure before turbine Higher measured precompressor pressure results in higher calculated exhaust

	gas pressure before the turbine. • Determines soot emissions Higher measured precompressor pressure results in lower calculated soot formation in the engine. • Calculates the temperature after the turbocharger compressor A lower measured pre-compressor pressure results in a higher calculated temperature after the turbo charger compressor. • Limits the maximum engine torque when driving at high altitudes (low air density) Lower measured precompressor pressure results in higher engine torque reduction. • Detects VTG surge, the sensor is used to determine the compressor pressure ratio; surge can typically occur at high compressor pressure ratios and low compressor mass flows.
Location of component(s)	**Humidity sensor (F852)** 
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	The PCI ECU (D420) receives a CAN message from the humidity sensor (F852) that

	contains an out-of-range value for the relative humidity.
Reset condition of fault code	This DTC changes to inactive after the ignition is keyed off for at least 15 seconds and keyed on again, and the fault is no longer detected.
Electrical diagram(s)	**Humidity Sensor (F852)**



122E 12-pin interface connector

123E 7-pin interface connector

A204 Electronic fan interface connector

D420 PCI ECU

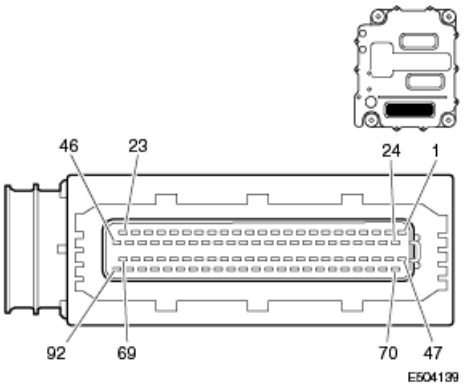
F852 humidity sensor

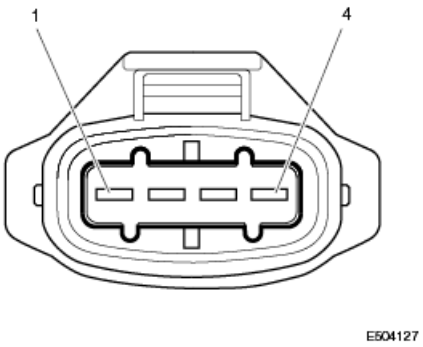
L037 VTG turbocharger actuator

L095 EGR valve module

L096 BPV valve

D420	F852	Function
C90	3	E-CAN high
C92	4	E-CAN low
	1	Power supply after ignition
	2	Ground





	Wiring harness connector D420.C front view **Wiring harness connector F852 front view** Handle connectors and pins with care and use matching measuring probes.
Technical data	**Component check, humidity sensor (F852)** This type of component cannot be checked with a multimeter or oscilloscope. Perform the following to assess the component: • Monitor/test the component with DAVIE • Perform the wiring check **Wiring check, humidity sensor (F852)** **Preparation** • Switch off the ignition. • Disconnect connector F852. • Measure on the front side of wiring harness connector F852.

Pin (+ probe)	Pin (- probe)	Value	Additional information
1	2	Ubat	Switch on ignition
3	4	± 60 Ω	• Switch off ignition • Ground cable from the battery disconnected • DAVIE Vehicle Communication Interface (VCI) disconnected

Possible causes	• E-CAN communication • Faulty humidity sensor
Additional information	The humidity sensor is a smart sensor that communicates with the PCI ECU via E-CAN. The sensor measures the following three properties of the drawn in precompressor (VTG turbo charger) air in the inlet air pipe: • Relative humidity • Pressure • Temperature

Diagnostic Step-by-Step

The ignition should always be in the OFF position when connecting or disconnecting electrical components to reduce the likelihood of damage to the components.

- This troubleshooting procedure is based on the assumption that supply power and ground to the PCI are functioning properly.
- Disconnecting the PCI connectors during the troubleshooting process will result in multiple errors.
- Specific electrical component information and pin out locations are provided in this procedure as a reference only. Always refer to the technical data sections in Rapido for the most up-to-date changes.
- It is necessary to use DAVIE to clear all current DTCs from the PCI and EAS-3 ECUs, and then run the Quick Check to identify a change in fault status.
- This DTC can be set as a result of multiple failure modes. For proper fault isolation, complete all troubleshooting steps in the sequence provided.

Step 1 Humidity Sensor (F852) Checks

Step 1A Visual inspection, connections and wiring, humidity sensor (F852)	
Action 1. Visually inspect the associated component connections and wiring for any of the following: • Damaged or loose connectors • Bent, broken, corroded or loose connector pins • Moisture or dirt in the connections • Damage to the wire harness or insulation • The correct parts are not installed • ECU connections are damaged or disconnected • Batteries not fully charged or contacts are not tight	
Was there evidence of any of the above?	
Yes	**No**
Correct any issues found. If the humidity sensor (F852) is found to be damaged or broken, replace it. Refer to step 2A to perform the corresponding repair verification cycles and rechecks.	
If this DTC is still present, go to step 1B	**Go to step 1B**

Step 1B Electrical checks, supply voltage, humidity sensor (F852)	
 Refer to the corresponding checking data for associated supply and signal voltages, resistance values, and related connector pin test points.	
Action 1. Confirm the supply voltage level as outlined in the corresponding checking data, "component check, humidity sensor (F852).	
Are measured values within expected range?	
Yes	**No**
	Correct any issues found. Refer to step 2A to perform the corresponding repair verification cycles and rechecks.
Go to step 1C	**If this DTC is still present, go to step 1C**

Step 1C Electrical checks, resistance, humidity sensor (F852) to E-CAN	
 Refer to the corresponding checking data for associated supply and signal voltages, resistance values, and related connector pin test points.	
Action 1. Confirm the resistance value as outlined in the corresponding checking data, "component check, humidity sensor (F852).	
Is the measured value within expected range?	
Yes	**No**
	Correct any issues found. Refer to step 2A to perform the corresponding repair verification cycles and rechecks.
If all steps have been completed and this DTC is still present, contact the PACCAR Engine Support Center for further assistance.	

Step 2 Repair Verification

Step 2A Repair verification cycles	
Perform these repair verification cycles following any corrective actions taken, to enable related OBD monitors to reach a readiness state associated with the DTC or system being investigated.  Before beginning these repair verification cycles, use the DAVIE Diagnostics, Quick Check function to "Clear all" current DTCs from the PCI and EAS-3 ECUs.	
Action 1. Start-up With the brakes set, start the engine and allow it to run at idle for 2 minutes.	
Were the identified repair verification cycles able to be completed?	
Yes	**No**
	Investigate and correct any issues preventing these repair verification cycles from being completed, then re-run. For additional assistance, contact the PACCAR Engine Support Center.
Go to step 2B	

Step 2B DAVIE Diagnostics, Quick Check, OBD Readiness Monitors
Action Use DAVIE Diagnostics to perform a Quick Check for current DTCs to determine whether the actions taken have cleared this DTC. 1. Confirm that the corresponding OBD Monitor Readiness Status value is displayed as "Ready." A status of Ready indicates that the corresponding OBD monitor has run successfully and the problem has been resolved—no further action. If the displayed status is "Not ready," continue to action step 2. 2. View the DTC overview display, and confirm that U1071 has been cleared.
Is the related OBD Monitor Readiness Status set to "Ready." Or, has U1071 been cleared?

Yes	No
Problem resolved. No further actions.	Continue with the next step in this troubleshooting procedure. If all steps have been completed and this DTC is still present: • continue to operate the truck to extend the run time, allowing the corresponding OBD monitor sufficient time to complete • or, return to step 3A and perform this repair verification again. If this issue is still present after extending or re-running the repair verification, contact the PACCAR Engine Support Center for further assistance.

Contacting the PACCAR Engine Support Center

For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the PACCAR Engine Support Call Center.

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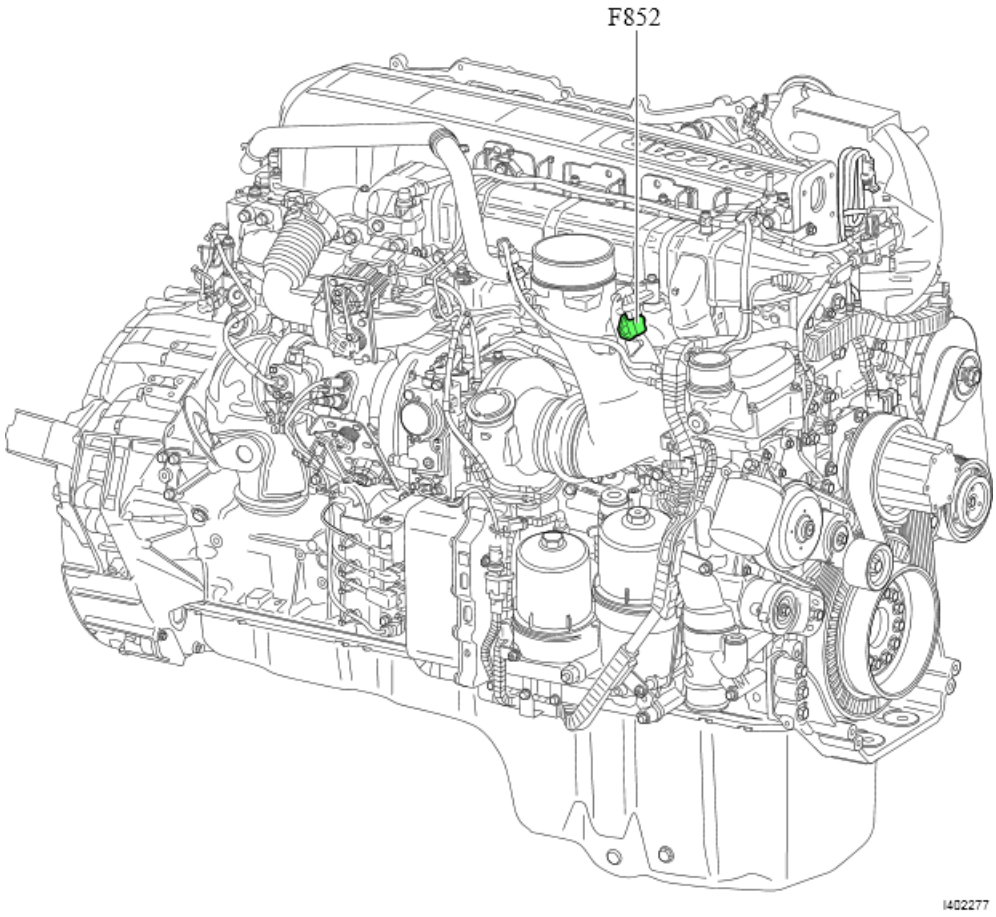
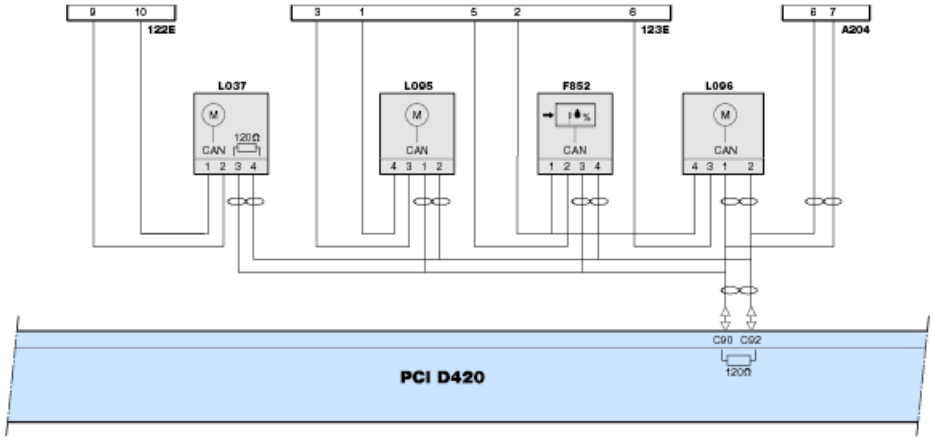
U1073

Code number	U1073
Fault code description	Humidity sensor - CAN communication error, message rate too low
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Crankcase
Description of component(s)	**Humidity sensor (F852)** The humidity sensor is a smart sensor that communicates with the PCI ECU via E-CAN. The sensor is positioned in the air inlet pipe before the turbo compressor and measures the following parameters: • Relative humidity • Temperature • Pressure **Inlet air humidity – before the turbo compressor** The relative humidity refers to the moisture percentage of the air. **Effect on the system** • Determines NOx emissions Higher measured relative humidity results in a lower calculated NOx emission. **Inlet air temperature – before the turbo compressor** • Determines soot emissions Higher measured precompressor temperature results in lower calculated soot formation in the engine. • Calculates exhaust gas pressure before the turbine; Higher measured precompressor temperature results in lower calculated exhaust gas pressure before the turbine. • Limits the maximum engine torque; for example, to limit the cylinder pressures during cold ambient conditions or driving at high altitudes. • to determine turbo charger compressor flow and thus the detection of VTG surge; Surge can typically occur at high compressor pressure ratios and low compressor mass flows. • calculation of the temperature after the turbo charger compressor;

	A higher measured pre-compressor temperature results in a higher calculation for the temperature after the turbocharger compressor. **Inlet air pressure - before the turbo compressor** • Corrects pressure before turbine Higher measured precompressor pressure results in higher calculated exhaust gas pressure before the turbine. • Determines soot emissions Higher measured precompressor pressure results in lower calculated soot formation in the engine. • Calculates the temperature after the turbocharger compressor A lower measured pre-compressor pressure results in a higher calculated temperature after the turbo charger compressor. • Limits the maximum engine torque when driving at high altitudes (low air density) Lower measured precompressor pressure results in higher engine torque reduction. • Detects VTG surge, the sensor is used to determine the compressor pressure ratio; surge can typically occur at high compressor pressure ratios and low compressor mass flows.
Location of component(s)	**Humidity sensor (F852)**

	
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	The PCI ECU (D420) lost communication with the humidity sensor (F852).
Reset condition of fault code	This DTC changes to inactive after the ignition is keyed off for at least 15 seconds and keyed on again, and the fault is no longer detected.
Electrical diagram(s)	**Humidity Sensor (F852)**  122E 12-pin interface connector

123E 7-pin interface connector

A204 Electronic fan interface connector

D420 PCI ECU

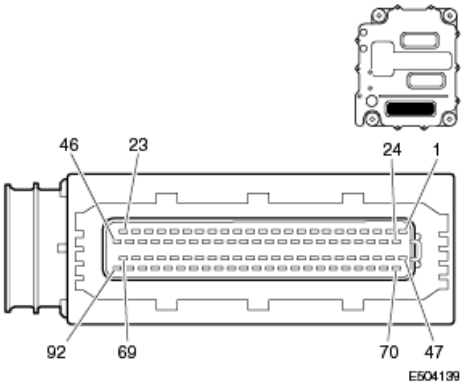
F852 humidity sensor

L037 VTG turbocharger actuator

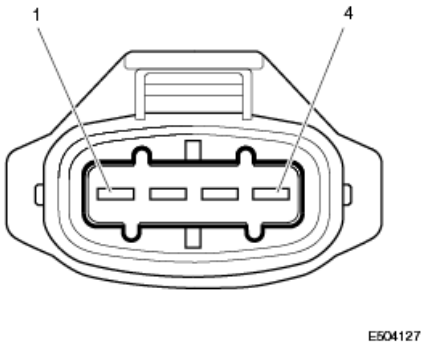
L095 EGR valve module

L096 BPV valve

D420	F852	Function
C90	3	E-CAN high
C92	4	E-CAN low
	1	Power supply after ignition
	2	Ground



Wiring harness connector D420.C front view



Wiring harness connector F852 front view

Handle connectors and pins with care and use matching measuring probes.

Technical data

Component check, humidity sensor (F852)

This type of component cannot be checked with a multimeter or oscilloscope. Perform the following to assess the component:

- Monitor/test the component with DAVIE
- Perform the wiring check

Wiring check, humidity sensor (F852)

Preparation

<table>
<tr><td></td><td>

Switch off the ignition.
Disconnect connector F852.
Measure on the front side of wiring harness connector F852.

<table>
<tr><th>Pin (+ probe)</th><th>Pin (- probe)</th><th>Value</th><th>Additional information</th></tr>
<tr><td>1</td><td>2</td><td>Ubat</td><td>Switch on ignition</td></tr>
<tr><td>3</td><td>4</td><td>± 60 Ω</td><td>• Switch off ignition
• Ground cable from the battery disconnected
• DAVIE Vehicle Communication Interface (VCI) disconnected</td></tr>
</table>
</td></tr>
<tr><td>Possible causes</td><td>

E-CAN communication
Faulty humidity sensor

</td></tr>
<tr><td>Additional information</td><td>The humidity sensor is a smart sensor that communicates with the PCI ECU via E-CAN. The sensor measures the following three properties of the drawn in precompressor (VTG turbo charger) air in the inlet air pipe:

Relative humidity
Pressure
Temperature

</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>
The ignition should always be in the OFF position when connecting or disconnecting electrical components to reduce the likelihood of damage to the components.

This troubleshooting procedure is based on the assumption that supply power and ground to the PCI are functioning properly.
Disconnecting the PCI connectors during the troubleshooting process will result in multiple errors.
Specific electrical component information and pin out locations are provided in this procedure as a reference only. Always refer to the technical data sections in Rapido for the most up-to-date changes.
It is necessary to use DAVIE to clear all current DTCs from the PCI and EAS-3 ECUs, and then run the Quick Check to identify a change in fault status.
This DTC can be set as a result of multiple failure modes. For proper fault isolation, complete all troubleshooting steps in the sequence

</td></tr>
</table>

provided.

Step 1 Humidity Sensor (F852) Checks

Step 1A Visual inspection, connections and wiring, humidity sensor (F852)	
Action 1. Visually inspect the associated component connections and wiring for any of the following: • Damaged or loose connectors • Bent, broken, corroded or loose connector pins • Moisture or dirt in the connections • Damage to the wire harness or insulation • The correct parts are not installed • ECU connections are damaged or disconnected • Batteries not fully charged or contacts are not tight	
Was there evidence of any of the above?	
Yes	**No**
Correct any issues found. If the humidity sensor (F852) is found to be damaged or broken, replace it. Refer to step 2A to perform the corresponding repair verification cycles and rechecks.	
If this DTC is still present, go to step 1B	**Go to step 1B**

Step 1B Electrical checks, supply voltage, humidity sensor (F852)
Refer to the corresponding checking data for associated supply and signal voltages, resistance values, and related connector pin test points.
Action 1. Confirm the supply voltage level as outlined in the corresponding checking data, “component check, humidity sensor (F852).
Are measured values within expected range?

Yes	No
	Correct any issues found. Refer to step 2A to perform the corresponding repair verification cycles and rechecks.
Go to step 1C	**If this DTC is still present, go to step 1C**

Step 1C Electrical checks, resistance, humidity sensor (F852) to E-CAN

Refer to the corresponding checking data for associated supply and signal voltages, resistance values, and related connector pin test points.

Action

1. Confirm the resistance value as outlined in the corresponding checking data, "component check, humidity sensor (F852).

Is the measured value within expected range?

Yes	No
	Correct any issues found. Refer to step 2A to perform the corresponding repair verification cycles and rechecks.
If all steps have been completed and this DTC is still present, contact the PACCAR Engine Support Center for further assistance.	

Step 2 Repair Verification

Step 2A Repair verification cycles

Perform these repair verification cycles following any corrective actions taken, to enable related OBD monitors to reach a readiness state associated with the DTC or system being investigated.

Before beginning these repair verification cycles, use the DAVIE Diagnostics, Quick Check function to "Clear all" current DTCs from the PCI and EAS-3 ECUs.

Action
1. Start-up With the brakes set, start the engine and allow it to run at idle for 2 minutes.
Were the identified repair verification cycles able to be completed?

Yes	No
	Investigate and correct any issues preventing these repair verification cycles from being completed, then re-run. For additional assistance, contact the PACCAR Engine Support Center.
Go to step 2B	

Step 2B DAVIE Diagnostics, Quick Check, OBD Readiness Monitors
Action Use DAVIE Diagnostics to perform a Quick Check for current DTCs to determine whether the actions taken have cleared this DTC. 1. Confirm that the corresponding OBD Monitor Readiness Status value is displayed as “Ready.” A status of Ready indicates that the corresponding OBD monitor has run successfully and the problem has been resolved—no further action. If the displayed status is “Not ready,” continue to action step 2. 2. View the DTC overview display, and confirm that U1073 has been cleared.
Is the related OBD Monitor Readiness Status set to “Ready.” Or, has U1073 been cleared?

Yes	No
Problem resolved. No further actions.	Continue with the next step in this troubleshooting procedure. If all steps have been completed and this DTC is still present: • continue to operate the truck to extend the run time, allowing the corresponding OBD monitor sufficient time to complete • or, return to step 2A and perform this repair verification again. If this issue is still present after extending

		or re-running the repair verification, contact the PACCAR Engine Support Center for further assistance.

Contacting the PACCAR Engine Support Center

For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the PACCAR Engine Support Call Center.

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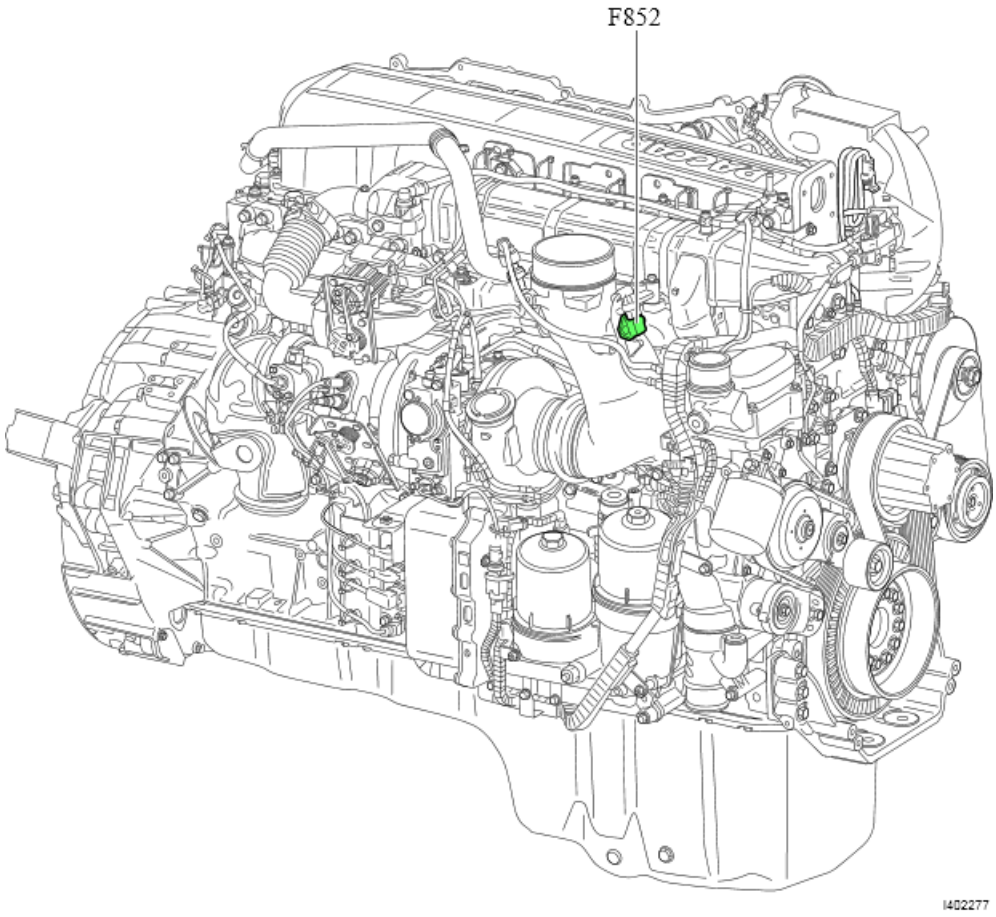
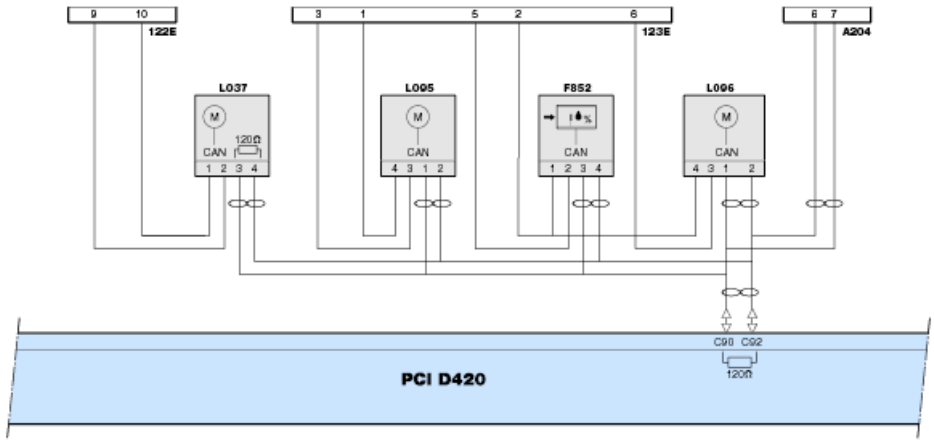
U1074

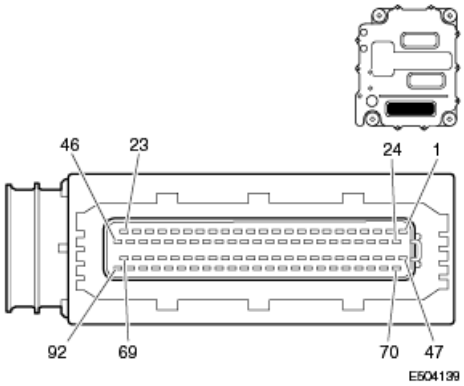
Code number	U1074
Fault code description	Inlet air temperature before compressor - Data erratic, intermittent or incorrect
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Crankcase
Description of component(s)	**Humidity sensor (F852)** The humidity sensor is a smart sensor that communicates with the PCI ECU via E-CAN. The sensor is positioned in the air inlet pipe before the turbo compressor and measures the following parameters: • Relative humidity • Temperature • Pressure **Inlet air humidity – before the turbo compressor** The relative humidity refers to the moisture percentage of the air. **Effect on the system** • Determines NOx emissions Higher measured relative humidity results in a lower calculated NOx emission. **Inlet air temperature – before the turbo compressor** • Determines soot emissions Higher measured precompressor temperature results in lower calculated soot formation in the engine. • Calculates exhaust gas pressure before the turbine; Higher measured precompressor temperature results in lower calculated exhaust gas pressure before the turbine. • Limits the maximum engine torque; for example, to limit the cylinder pressures during cold ambient conditions or driving at high altitudes. • to determine turbo charger compressor flow and thus the detection of VTG surge; Surge can typically occur at high compressor pressure ratios and low compressor mass flows. • calculation of the temperature after the turbo charger compressor;

	A higher measured pre-compressor temperature results in a higher calculation for the temperature after the turbocharger compressor. **Inlet air pressure - before the turbo compressor** • Corrects pressure before turbine Higher measured precompressor pressure results in higher calculated exhaust gas pressure before the turbine. • Determines soot emissions Higher measured precompressor pressure results in lower calculated soot formation in the engine. • Calculates the temperature after the turbocharger compressor A lower measured pre-compressor pressure results in a higher calculated temperature after the turbo charger compressor. • Limits the maximum engine torque when driving at high altitudes (low air density) Lower measured precompressor pressure results in higher engine torque reduction. • Detects VTG surge, the sensor is used to determine the compressor pressure ratio; surge can typically occur at high compressor pressure ratios and low compressor mass flows.
Location of component(s)	**Humidity sensor (F852)**

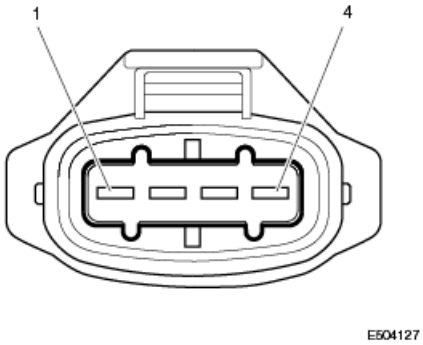
	
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	The PCI ECU (D420) receives a CAN message from the humidity sensor (F852) that contains an out-of-range value for the temperature.
Reset condition of fault code	This DTC changes to inactive after the ignition is keyed off for at least 15 seconds and keyed on again, and the fault is no longer detected.
Electrical diagram(s)	**Humidity Sensor (F852)** 

	122E 12-pin interface connector 123E 7-pin interface connector A204 Electronic fan interface connector D420 PCI ECU F852 humidity sensor L037 VTG turbocharger actuator L095 EGR valve module L096 BPV valve

D420	F852	Function
C90	3	E-CAN high
C92	4	E-CAN low
	1	Power supply after ignition
	2	Ground



Wiring harness connector D420.C front view



Wiring harness connector F852 front view

Handle connectors and pins with care and use matching measuring probes.

Technical data	**Component check, humidity sensor (F852)** This type of component cannot be checked with a multimeter or oscilloscope. Perform the following to assess the component: • Monitor/test the component with DAVIE • Perform the wiring check **Wiring check, humidity sensor (F852)**

<table>
<tr><td></td><td>

Preparation

- Switch off the ignition.
- Disconnect connector F852.
- Measure on the front side of wiring harness connector F852.

<table>
<tr><th>Pin
(+ probe)</th><th>Pin
(- probe)</th><th>Value</th><th>Additional information</th></tr>
<tr><td>1</td><td>2</td><td>Ubat</td><td>Switch on ignition</td></tr>
<tr><td>3</td><td>4</td><td>± 60 Ω</td><td>• Switch off ignition
• Ground cable from the battery disconnected
• DAVIE Vehicle Communication Interface (VCI) disconnected</td></tr>
</table>

</td></tr>
<tr><td>Possible causes</td><td>

- E-CAN communication
- Faulty humidity sensor

</td></tr>
<tr><td>Additional information</td><td>

The humidity sensor is a smart sensor that communicates with the PCI ECU via E-CAN. The sensor measures the following three properties of the drawn in precompressor (VTG turbo charger) air in the inlet air pipe:

- Relative humidity
- Pressure
- Temperature

</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

The ignition should always be in the OFF position when connecting or disconnecting electrical components to reduce the likelihood of damage to the components.

- This troubleshooting procedure is based on the assumption that supply power and ground to the PCI are functioning properly.
- Disconnecting the PCI connectors during the troubleshooting process will result in multiple errors.
- Specific electrical component information and pin out locations are provided in this procedure as a reference only. Always refer to the technical data sections in Rapido for the most up-to-date changes.
- It is necessary to use DAVIE to clear all current DTCs from the PCI and EAS-3 ECUs, and then run the Quick Check to identify a change in fault status.
- This DTC can be set as a result of multiple failure modes. For proper fault isolation, complete all troubleshooting steps in the sequence provided.

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</table>

Step 1 Humidity Sensor (F852) Checks

Step 1A Visual inspection, connections and wiring, humidity sensor (F852)	
Action 1. Visually inspect the associated component connections and wiring for any of the following: • Damaged or loose connectors • Bent, broken, corroded or loose connector pins • Moisture or dirt in the connections • Damage to the wire harness or insulation • The correct parts are not installed • ECU connections are damaged or disconnected • Batteries not fully charged or contacts are not tight	
Was there evidence of any of the above?	
Yes	**No**
Correct any issues found. If the humidity sensor (F852) is found to be damaged or broken, replace it. Refer to step 2A to perform the corresponding repair verification cycles and rechecks.	
If this DTC is still present, go to step 1B	**Go to step 1B**

Step 1B Electrical checks, supply voltage, humidity sensor (F852)	
Refer to the corresponding checking data for associated supply and signal voltages, resistance values, and related connector pin test points.	
Action 1. Confirm the supply voltage level as outlined in the corresponding checking data, "component check, humidity sensor (F852).	
Are measured values within expected range?	
Yes	**No**
	Correct any issues found. Refer to step 2A to perform the

	corresponding repair verification cycles and rechecks.
Go to step 1C	**If this DTC is still present, go to step 1C**

Step 1C Electrical checks, resistance, humidity sensor (F852) to E-CAN	
Refer to the corresponding checking data for associated supply and signal voltages, resistance values, and related connector pin test points.	
Action 1. Confirm the resistance value as outlined in the corresponding checking data, "component check, humidity sensor (F852).	
Is the measured value within expected range?	
Yes	**No**
	Correct any issues found. Refer to step 2A to perform the corresponding repair verification cycles and rechecks.
If all steps have been completed and this DTC is still present, contact the PACCAR Engine Support Center for further assistance.	

Step 2 Repair Verification

Step 2A Repair verification cycles
Perform these repair verification cycles following any corrective actions taken, to enable related OBD monitors to reach a readiness state associated with the DTC or system being investigated.
Before beginning these repair verification cycles, use the DAVIE Diagnostics, Quick Check function to "Clear all" current DTCs from the PCI and EAS-3 ECUs.
Action 1. Start-up With the brakes set, start the engine and allow it to run at idle for 2 minutes.

Were the identified repair verification cycles able to be completed?	
Yes	**No**
	Investigate and correct any issues preventing these repair verification cycles from being completed, then re-run. For additional assistance, contact the PACCAR Engine Support Center.
Go to step 2B	

Step 2B DAVIE Diagnostics, Quick Check, OBD Readiness Monitors	
Action Use DAVIE Diagnostics to perform a Quick Check for current DTCs to determine whether the actions taken have cleared this DTC. 1. Confirm that the corresponding OBD Monitor Readiness Status value is displayed as "Ready." A status of Ready indicates that the corresponding OBD monitor has run successfully and the problem has been resolved—no further action. If the displayed status is "Not ready," continue to action step 2. 2. View the DTC overview display, and confirm that U1074 has been cleared.	
Is the related OBD Monitor Readiness Status set to "Ready." Or, has U1074 been cleared?	
Yes	**No**
Problem resolved. No further actions.	Continue with the next step in this troubleshooting procedure. If all steps have been completed and this DTC is still present: • continue to operate the truck to extend the run time, allowing the corresponding OBD monitor sufficient time to complete • or, return to step 2A and perform this repair verification again. If this issue is still present after extending or re-running the repair verification, contact the PACCAR Engine Support Center for further assistance.

	 Contacting the PACCAR Engine Support Center For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the PACCAR Engine Support Call Center.
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U1104

Code number	U1104
Fault code description	CAN communication - Message (ACC1) rate too low from Advanced Emergency Braking System
Diagnostic Step-by-Step	**Diagnostic and supporting information for this DTC is available in Engine Rapido.**
	Back to Index

U1105

Code number	U1105
Fault code description	CAN communication - Message (PROBA_BBM_to_Eng) out of range, engine stop from Body Builder Module
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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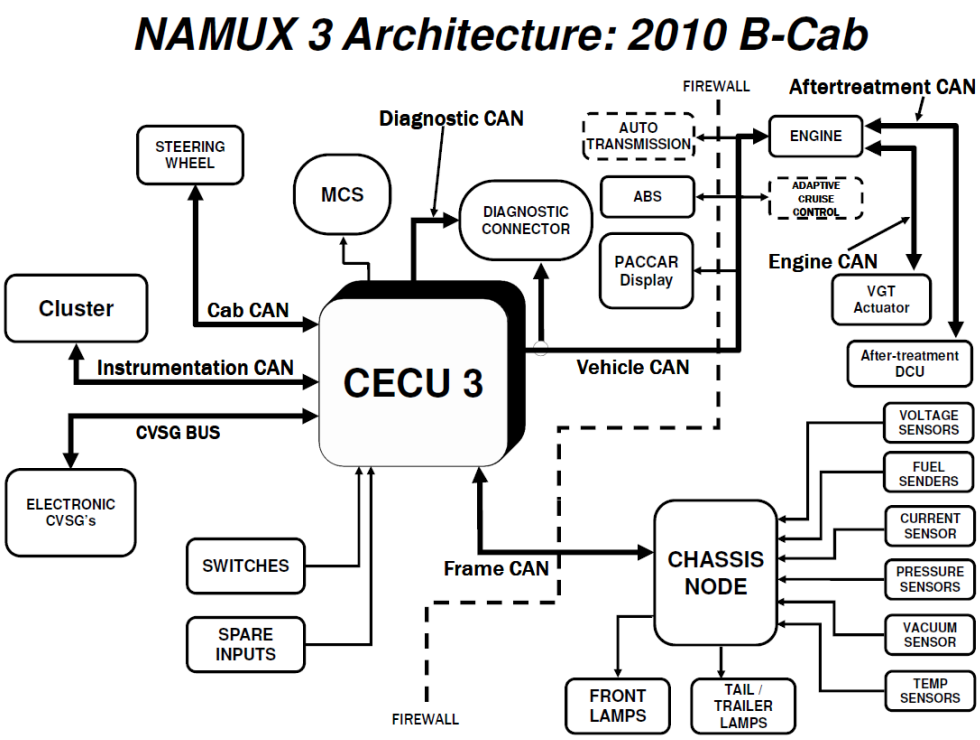
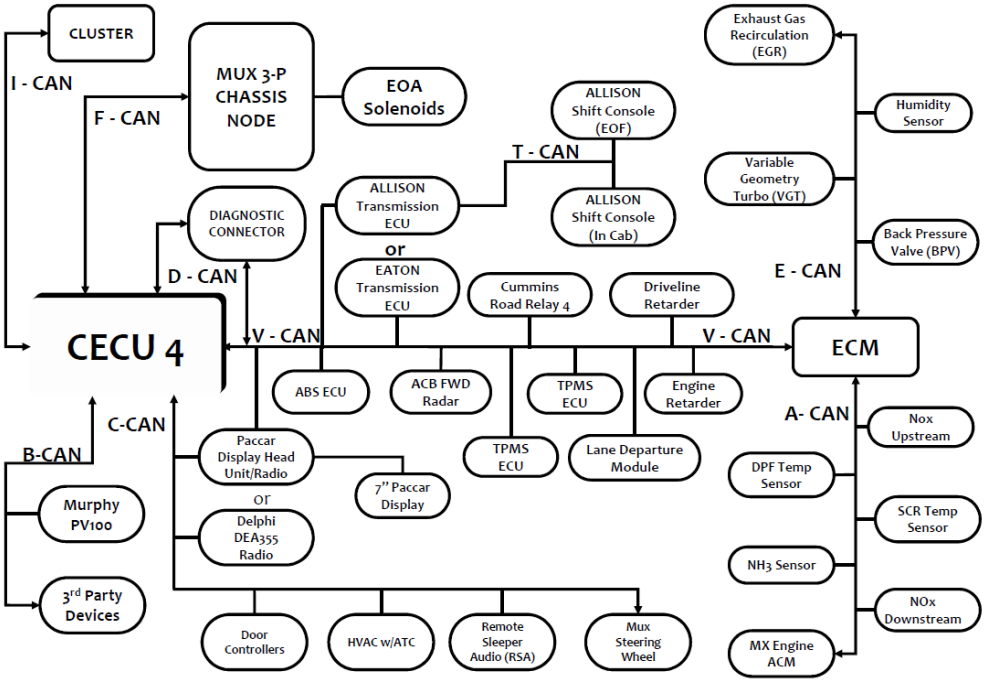
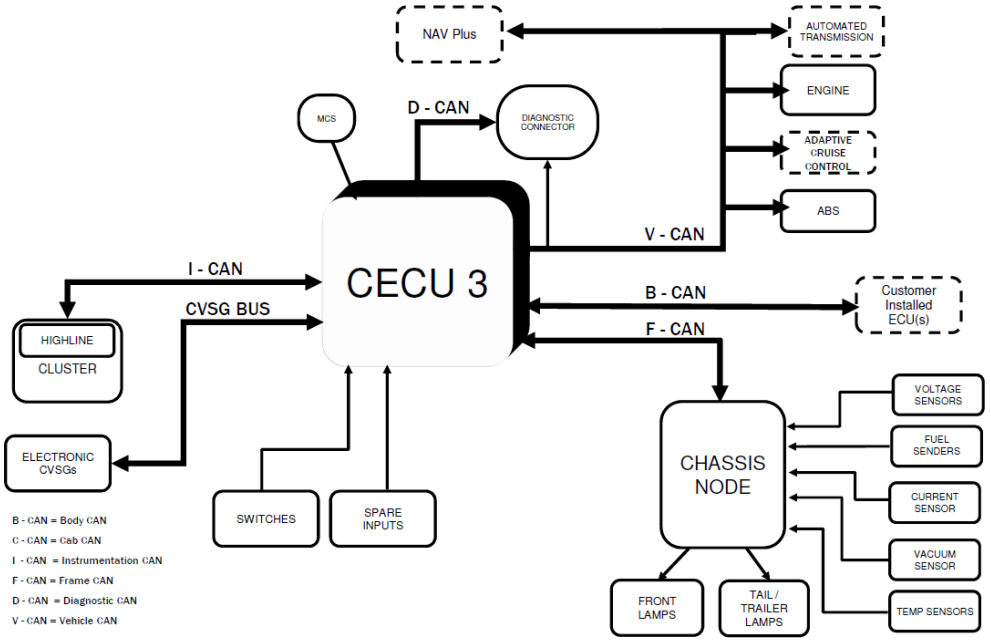
U1110

Code number	U1110
Fault code description	CAN Communication – Message (RC_DR) rate too low from retarder
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680

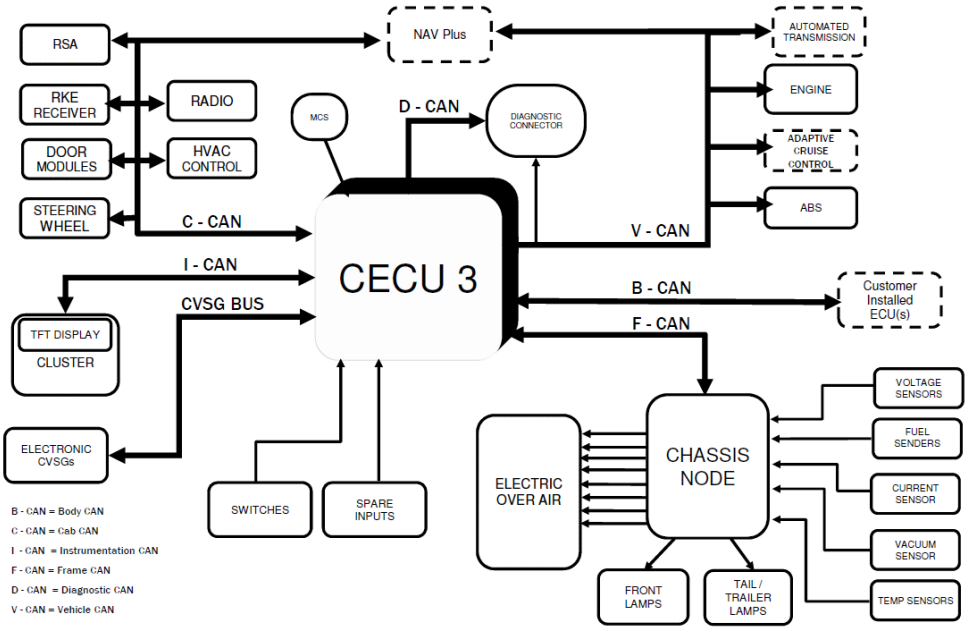


NAMUX 3 Architecture



<table>
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Open circuit, short circuit to ground or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1110a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

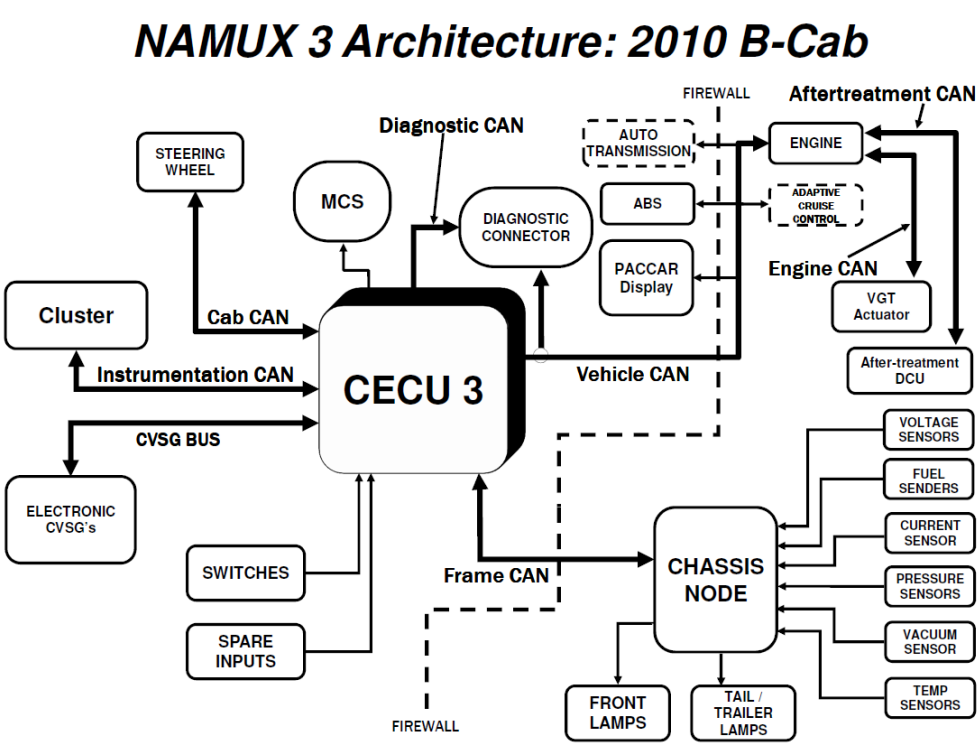
<table>
<tr>
<td></td>
<td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1110b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

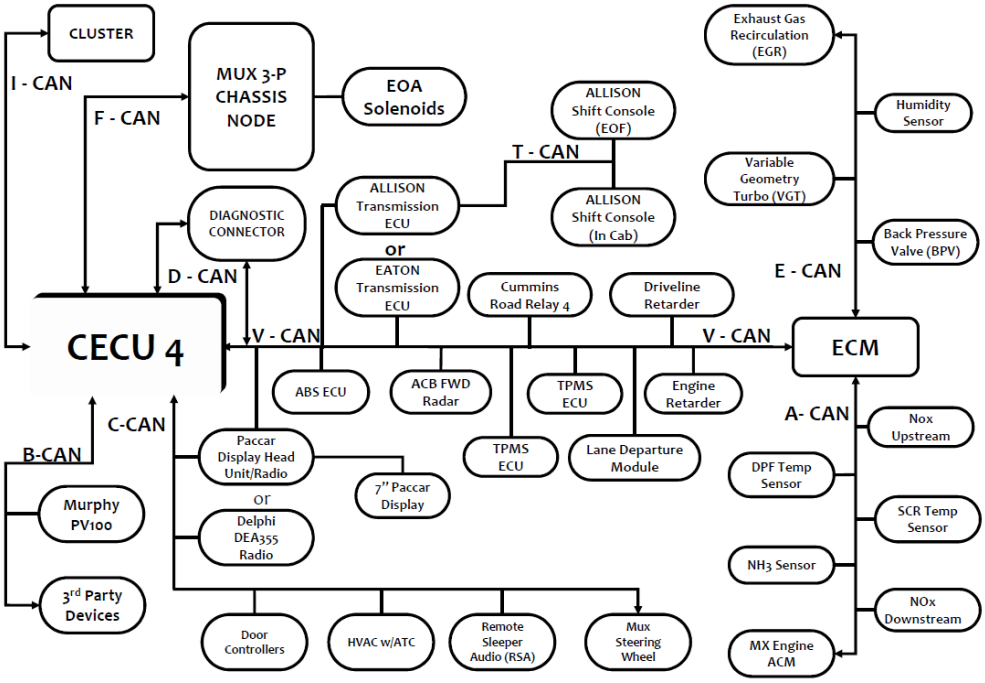
<table>
<tr><td>Step 3</td><td>Step ID 1110c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive: Issue resolved. Clear inactive fault.</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 1110d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Verification Drive Cycle</td>
<td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td>
</tr>
<tr>
<td></td>
<td>Back to Index</td>
</tr>
</table>

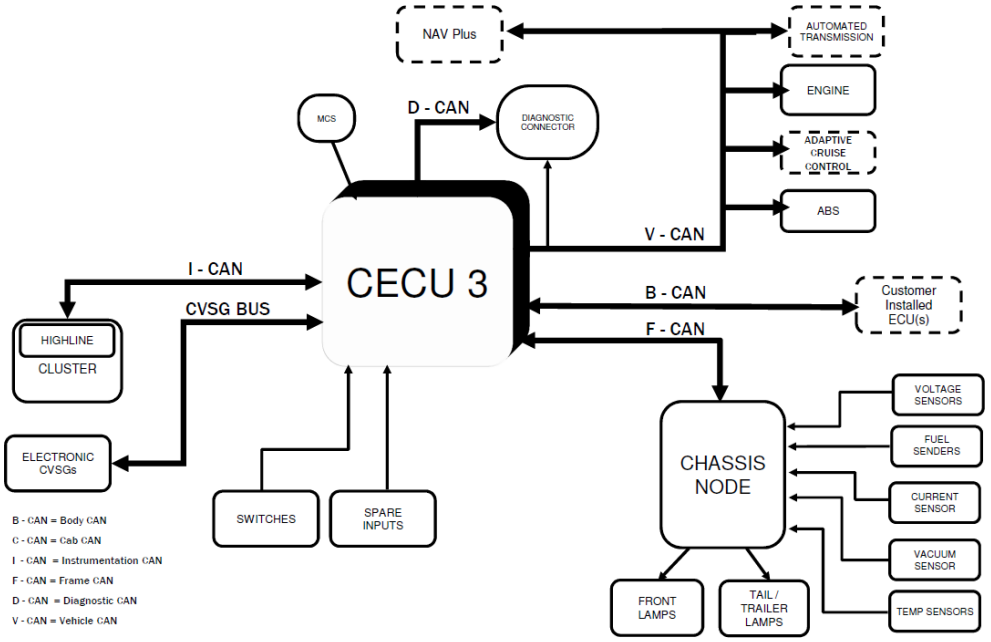
U1112

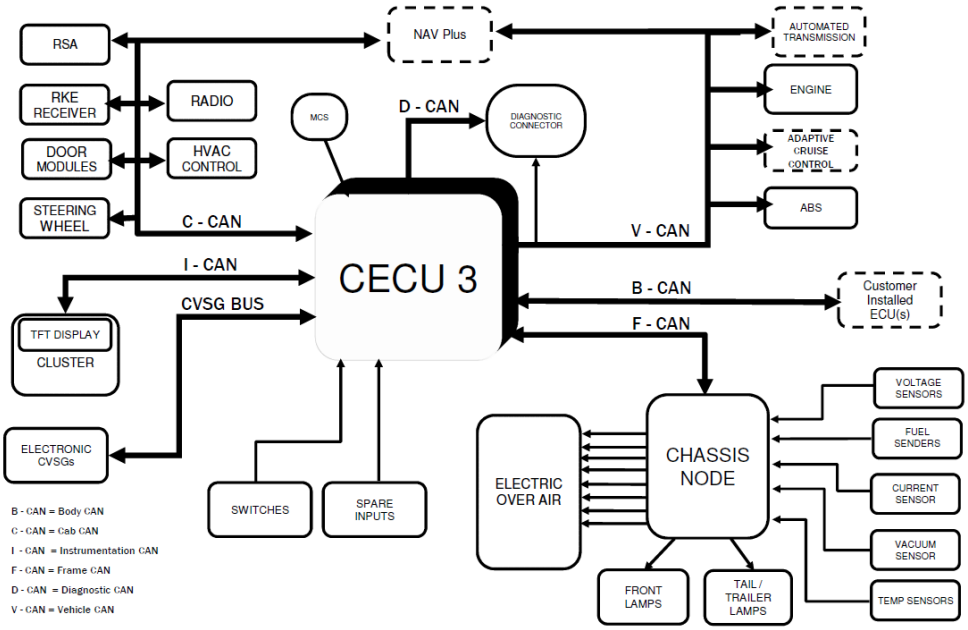
Code number	U1112
Fault code description	CAN communication - Message (SCR1) rate too low from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	This condition will set when Time since last reception is greater than 0.6 sec
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Open circuit, short circuit to ground or short circuit to supply in the CAN network wiring
Additional information	No additional information available
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1112a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above?		

<table>
<tr><td></td><td>

No: Proceed to step 2.
Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1112b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system
Perform the checking data test of the specific component

Is test pass?

No: Proceed to step 3
Yes : Proceed to step 4
</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1112c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key

Use DAVIE to re-check for the presence of active faults:

Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault
</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1112d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To verify the repair:
With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics.
With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

U1114

Code number	U1114
Fault code description	CAN communication - Message (AT1T1I) rate too low, DEF tank information from aftertreatment system
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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U1118

Code number	U1118
Fault code description	CAN communication - Message (EXH_GAS_CORR) out of range - Post SCR NOx reading stable from emission system
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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U111A

Code number	U111A
Fault code description	CAN communication - Message (EXH_GAS_CORR) out of range, engine out NOx reading stable from aftertreatment system
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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U111B

Code number	U111B
Fault code description	CAN communication - Message (EXH_GAS_CORR) out of range, engine out O2 percentage corrected from aftertreatment system
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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U111C

Code number	U111C
Fault code description	CAN communication - Message (EXH_GAS_CORR) out of range, engine out NOx corrected from aftertreatment system
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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U111D

Code number	U111D
Fault code description	CAN communication - Message (EXH_GAS_CORR) rate too low from aftertreatment system
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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U1120

Code number	U1120
Fault code description	CAN communication - Message (TSC1_BE) rate too low from brake system
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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U1122

Code number	U1122
Fault code description	CAN communication - Message (TSC1_TE) rate too low from transmission system
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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U1124

Code number	U1124
Fault code description	CAN communication - Message (TSC1_VE) rate too low from vehicle controller
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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U1126

Code number	U1126
Fault code description	CAN communication - Message (TSC1_SE) rate too low from Body Builder Module
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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U112A

Code number	U112A
Fault code description	CAN communication - Message (ACM) rate too low from aftertreatment system
	Diagnostic and supporting information for this DTC is available in Engine Rapido.
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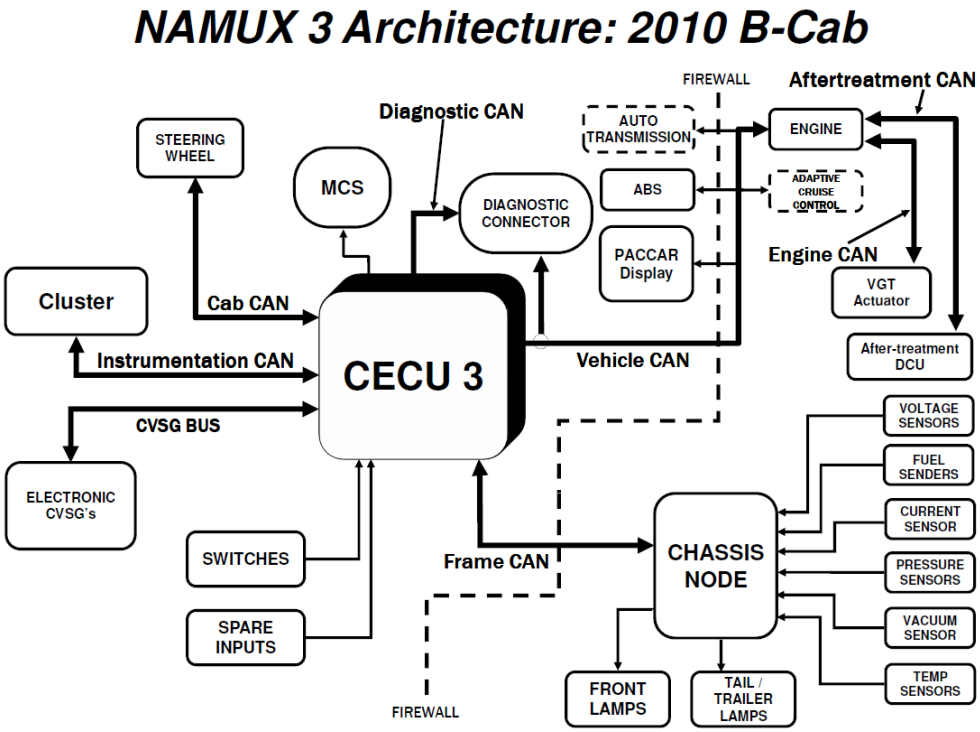
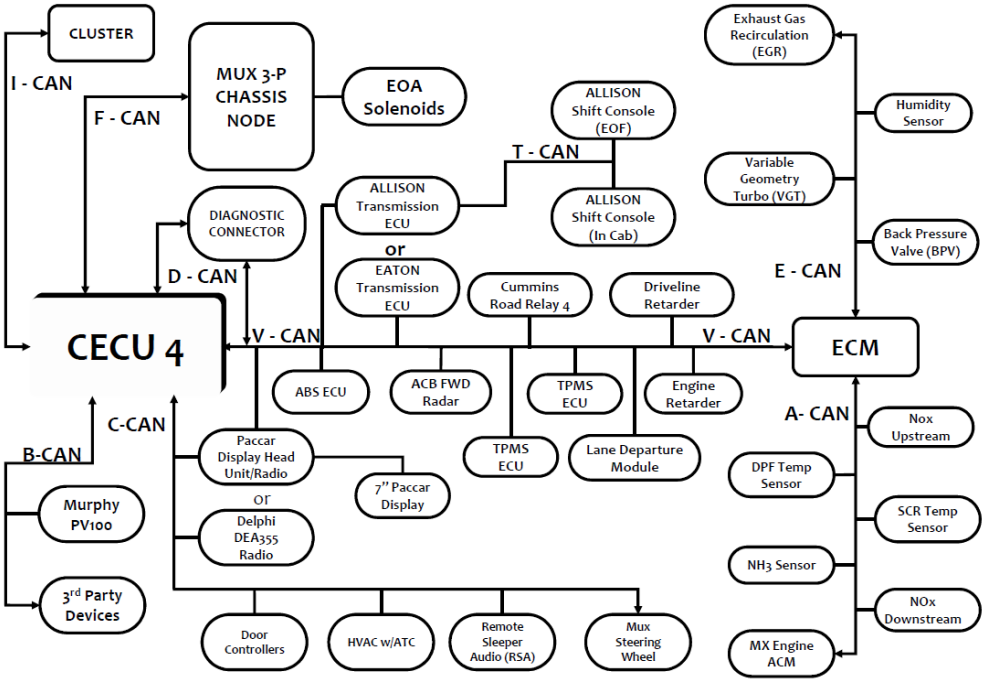
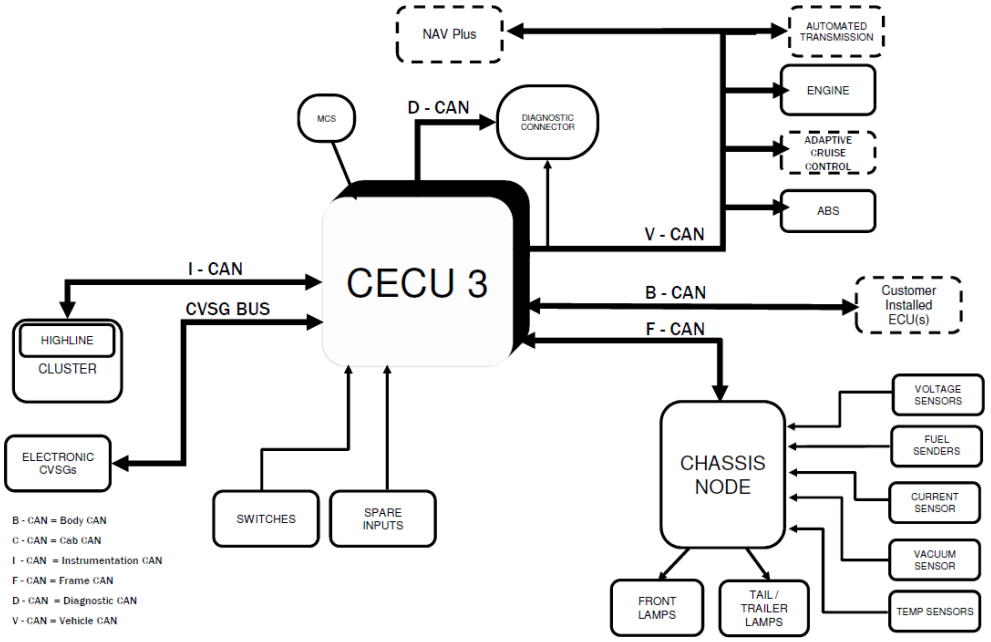
P112C

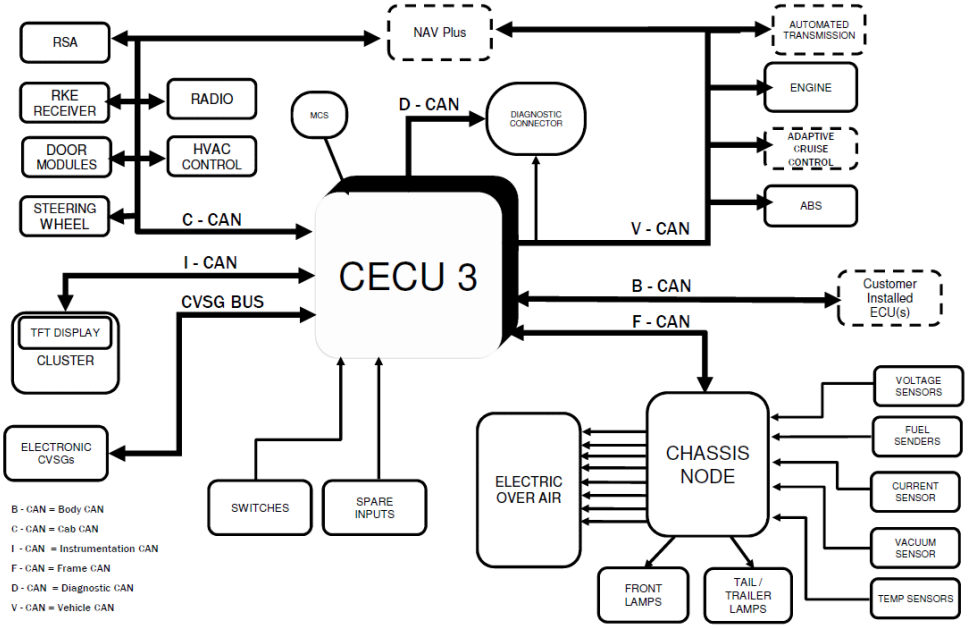
Code number	U112C
Fault code description	CAN communication - Message (AT1FC1) out of range - Fuel rate from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	Received value of fuel rate in message (AT1FC1) is more than 3213 L/h.
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



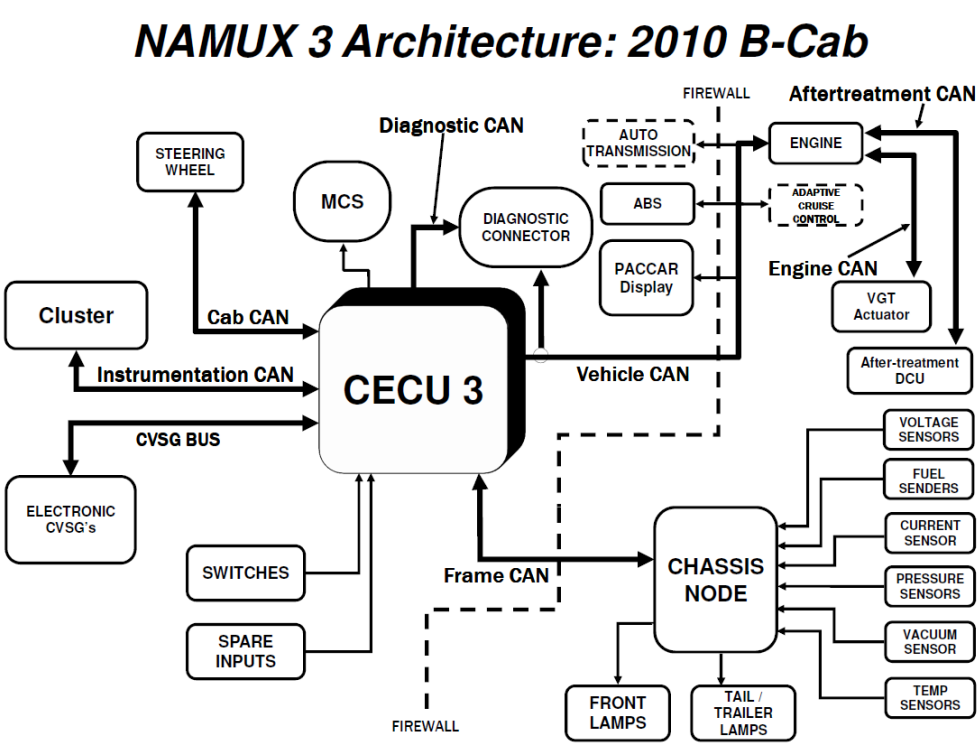


Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	Check the after treatment for fuel consumption
Additional information	No additional information available.
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

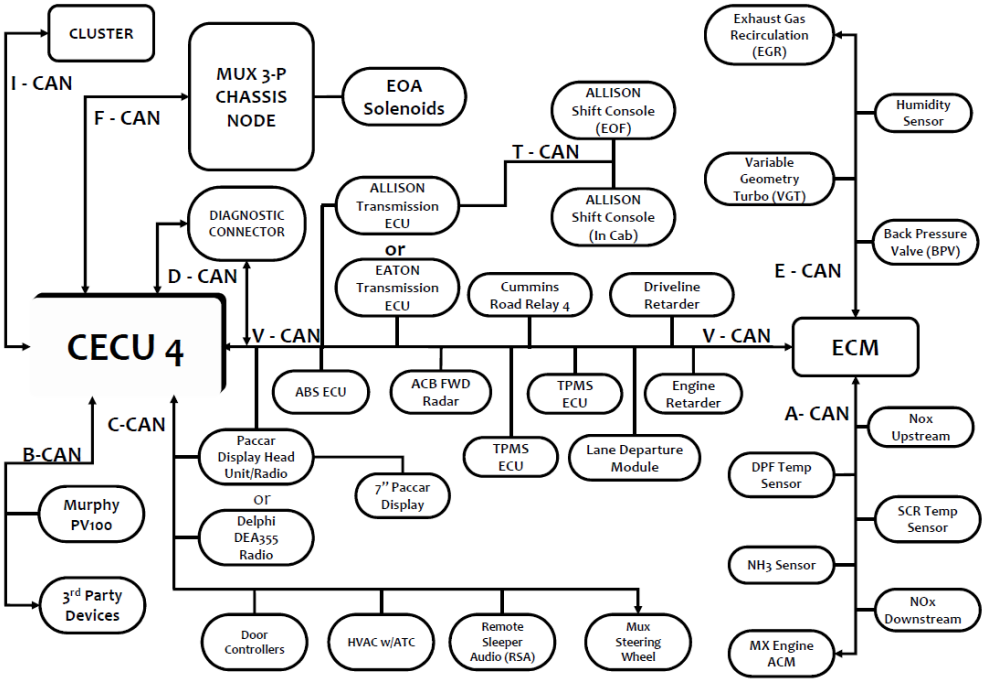
Step 1	Step ID 112C-a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above? • No: Proceed to step 2.		

<table>
<tr><td></td><td>
Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2
<table>
<tr><td>Step 2</td><td>Step ID 112C-b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
Lookup the technical data of the specific system
Perform the checking data test of the specific component
Is test pass?
No: Proceed to step 3
Yes : Proceed to step 4</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 112C-c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key
Use DAVIE to re-check for the presence of active faults:
Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 112C-d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

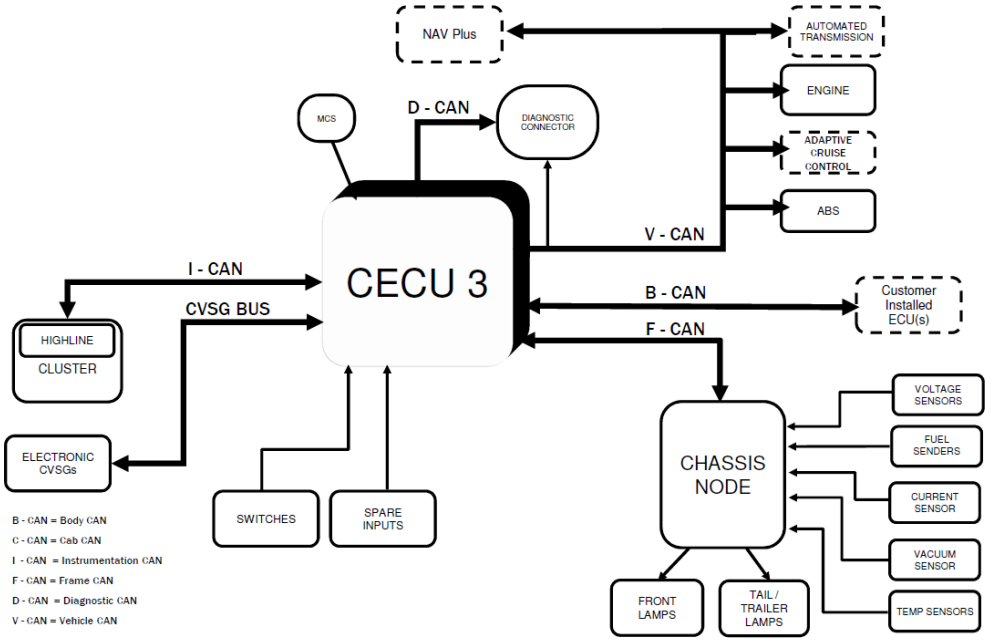
P112D

Code number	U112D
Fault code description	CAN communication - Message (AT1FC1) rate too low from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	CAN command message AT1FC1 is missing for more than 1.5 sec.
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680

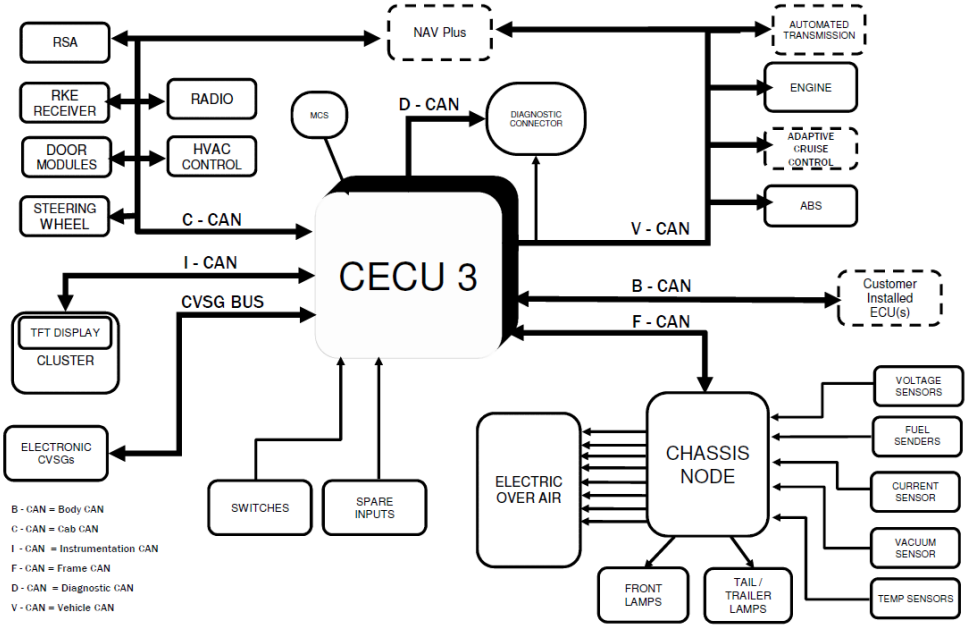


NAMUX 3 Architecture



<table>
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Open circuit, short circuit to ground, or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available.</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 112D-a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

Was there evidence of any of the above?
- No: Proceed to step 2.
- Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.
- If this related fault is no longer active, then this issue has been resolved.
- If this related fault is still active, Proceed to step 2

Step 2	Step ID 112D-b	SRT
Data check • Lookup the technical data of the specific system • Perform the checking data test of the specific component Is test pass? • No: Proceed to step 3 • Yes : Proceed to step 4		

Step 3	Step ID 112D-c	SRT
Repair or replace component • Repair or replace the component, also check for electrical connection and wiring harness. • Reconnect the connector • ON the ignition key Use DAVIE to re-check for the presence of active faults: • Is DTC fault active: Proceed to step 4 • Is DTC fault inactive: Issue resolved. Clear inactive fault		

Step 4	Step ID 112D-d	SRT
For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.		

Verification Drive Cycle	To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.
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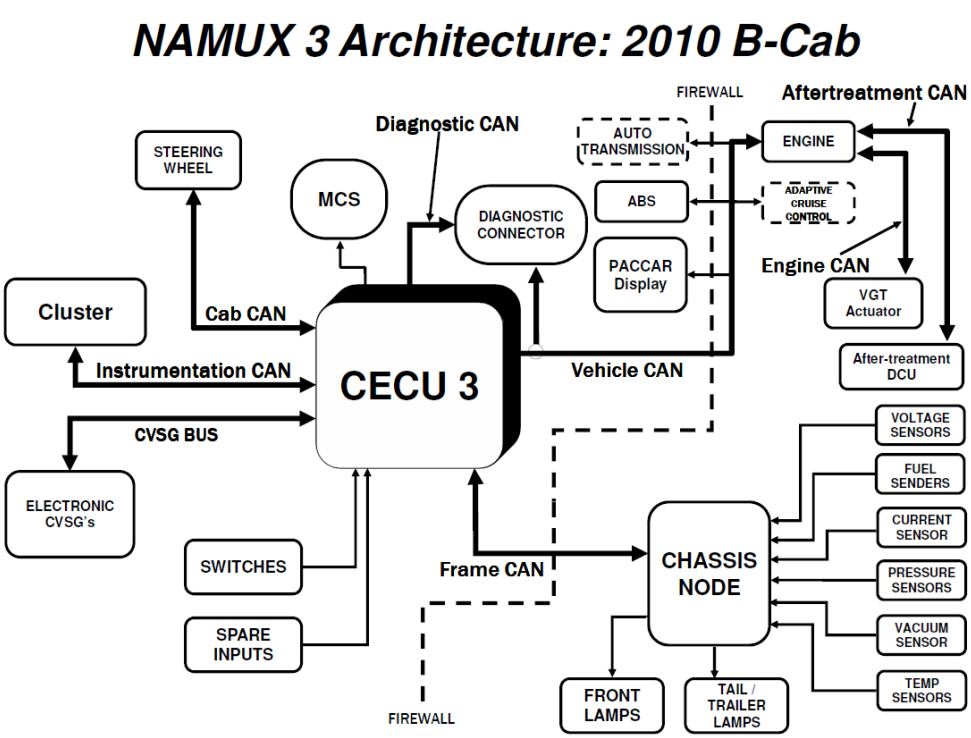
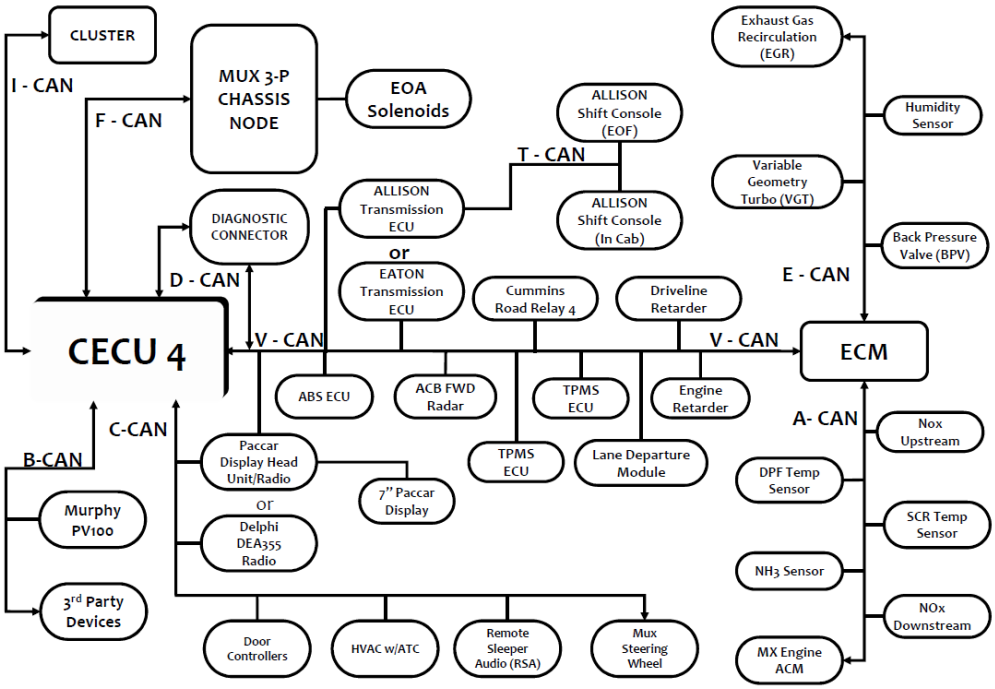
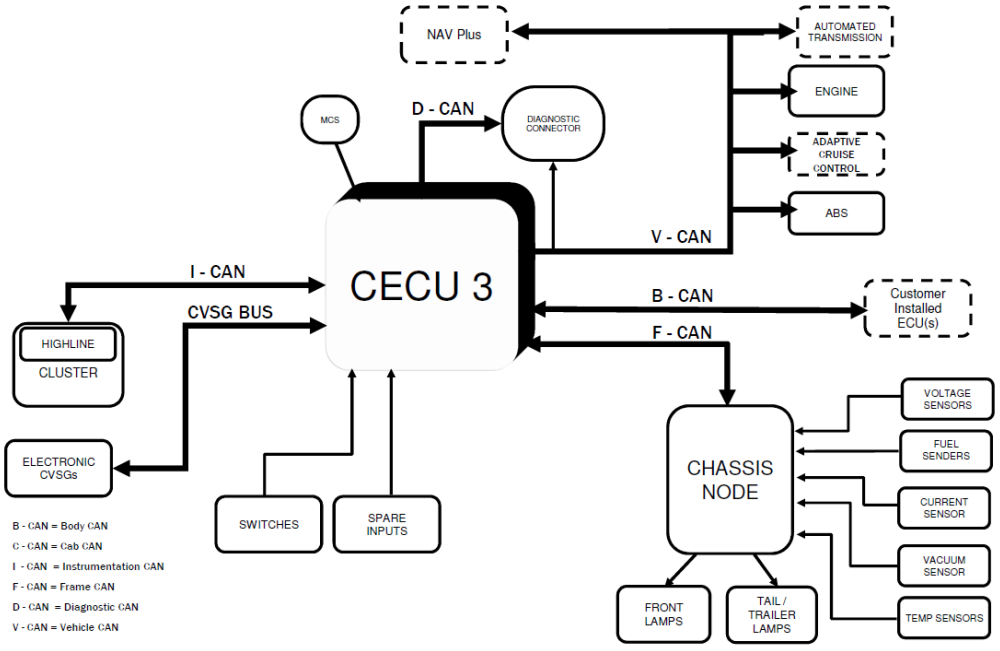
U112F

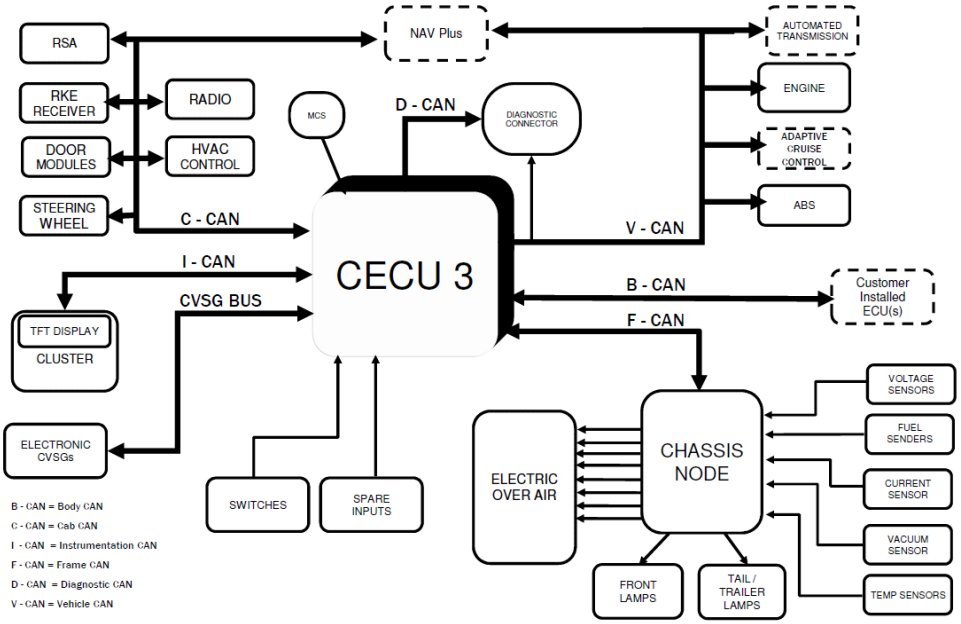
Code number	U112F
Fault code description	CAN communication - Message (AT1HI) out of range - total fuel used from emission system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	Check the after treatment for total fuel used
Additional information	No additional information available

Diagnostic Step-by-Step

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 112F-a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above? • No: Proceed to step 2. • Yes: Make the appropriate repairs or component replacements.		

<table>
<tr><td></td><td>
Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 112F-b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system
Perform the checking data test of the specific component

Is test pass?

No: Proceed to step 3
Yes : Proceed to step4

</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 112F-c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

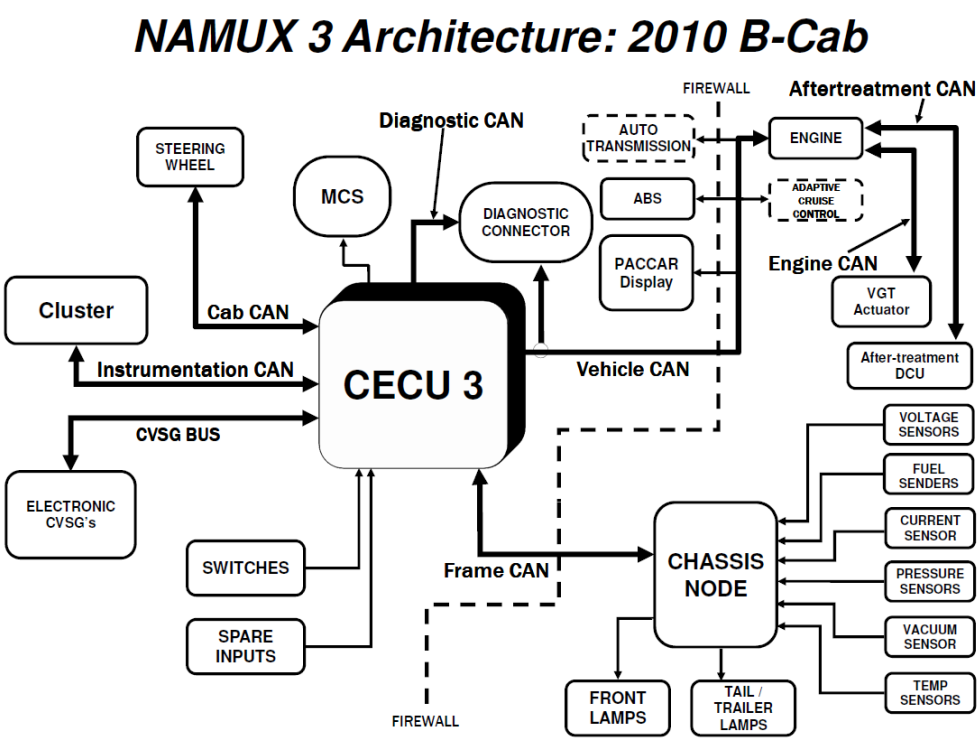
Repair or replace the component, also check for electrical connection and wiring harness .
Reconnect the connector
ON the ignition key

Use DAVIE to re-check for the presence of active faults:

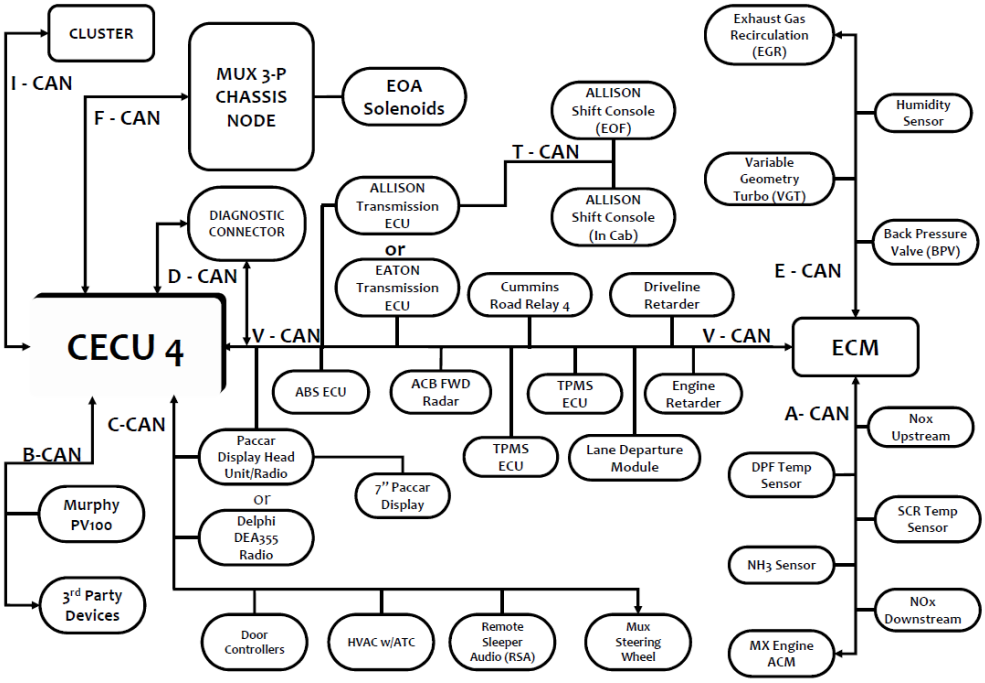
Is DTC fault active: Proceed to step 4
Is DTC fault inactive : Issue resolved. Clear inactive fault.

</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 112F-d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

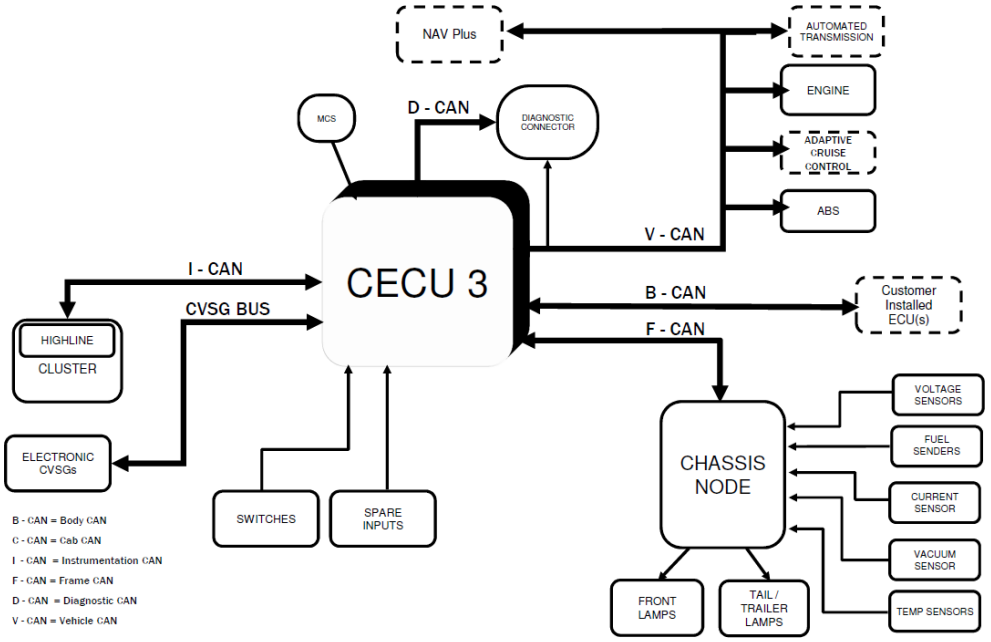
U1130

Code number	U1130
Fault code description	CAN communication - Message (AT1HI) out of range - Distance between active DPF regenerations from emission system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



<table>
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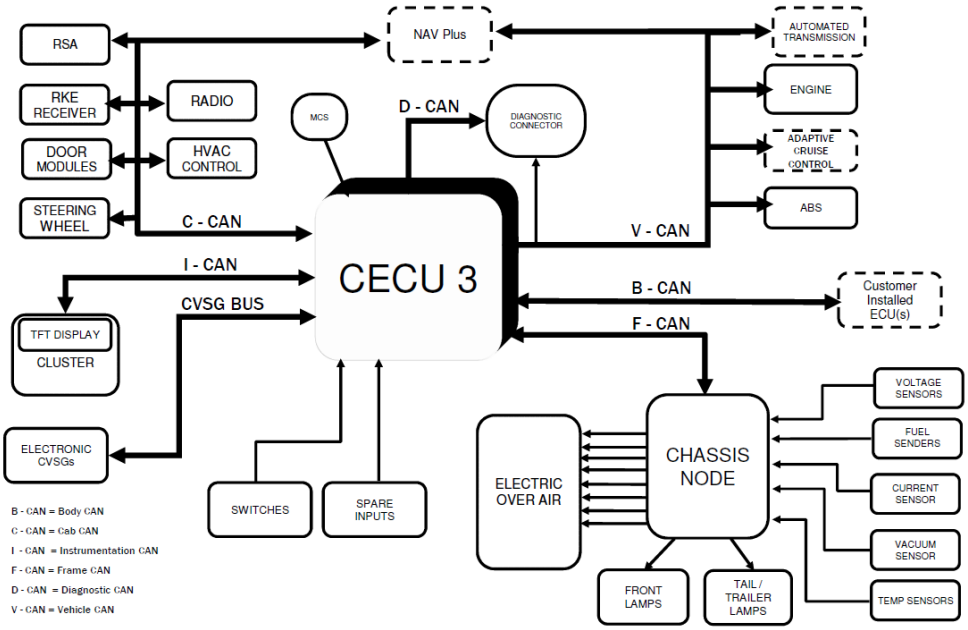
NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

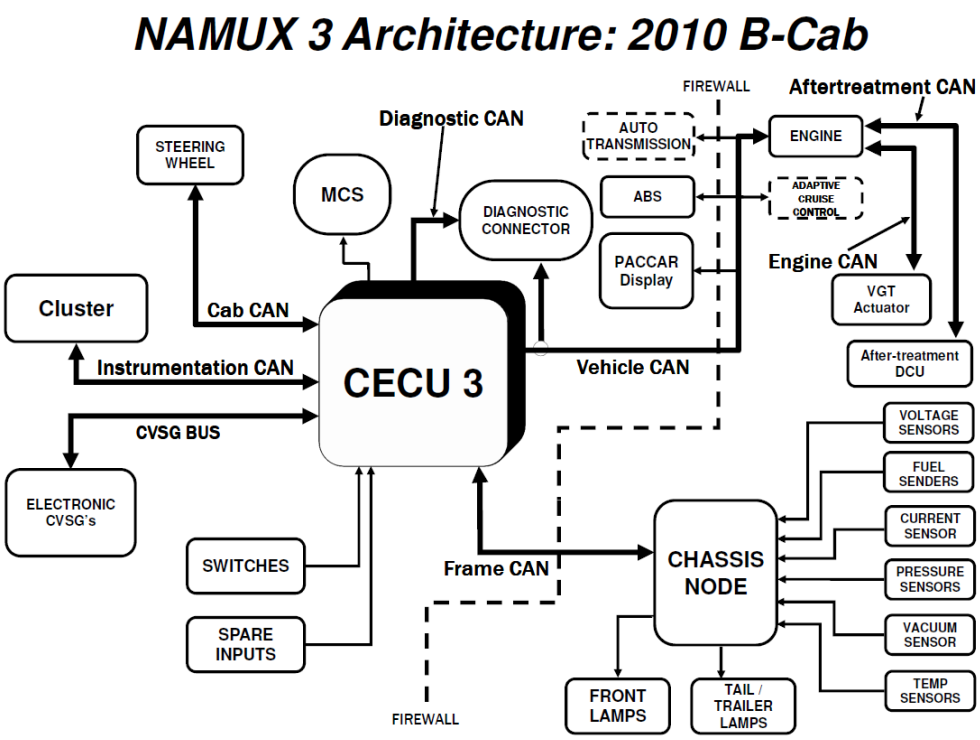
- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1130a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

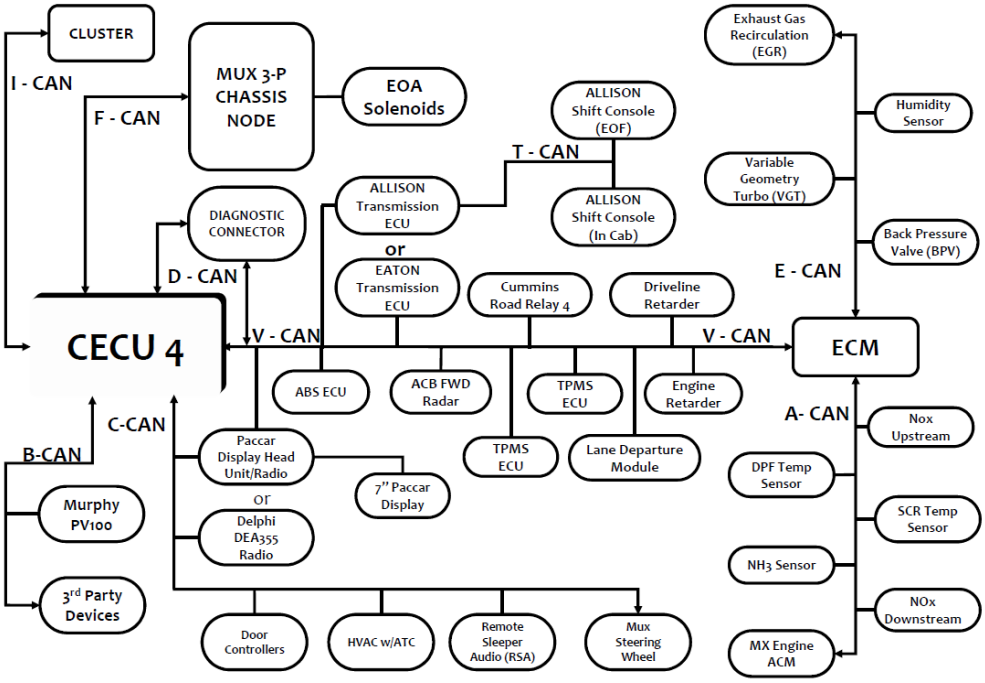
</td></tr>
</table>

<table>
<tr><td></td><td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2
<table>
<tr><td>Step 2</td><td>Step ID 1130b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1130c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive : Issue resolved. Clear inactive fault.</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1130d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics.
With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

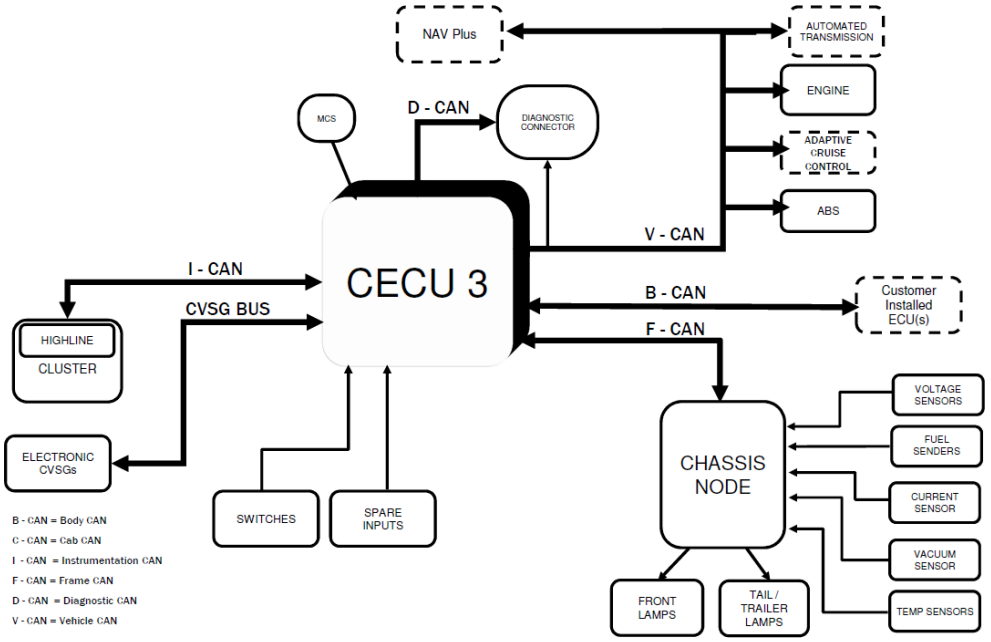
U1132

Code number	U1132
Fault code description	CAN communication - Message (CM1) rate too low from vehicle controller
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



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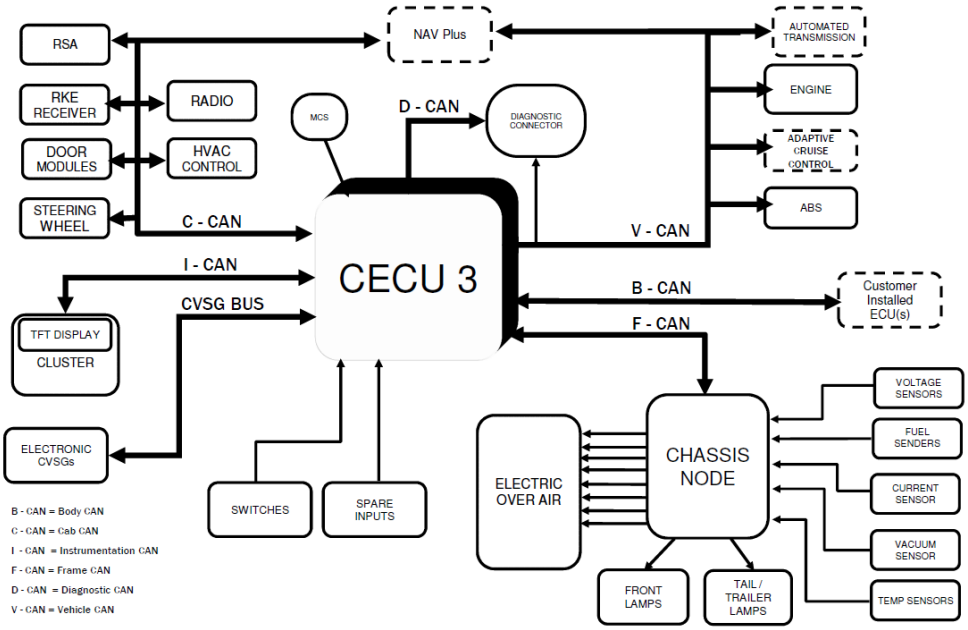
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Open circuit, short circuit to ground, or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

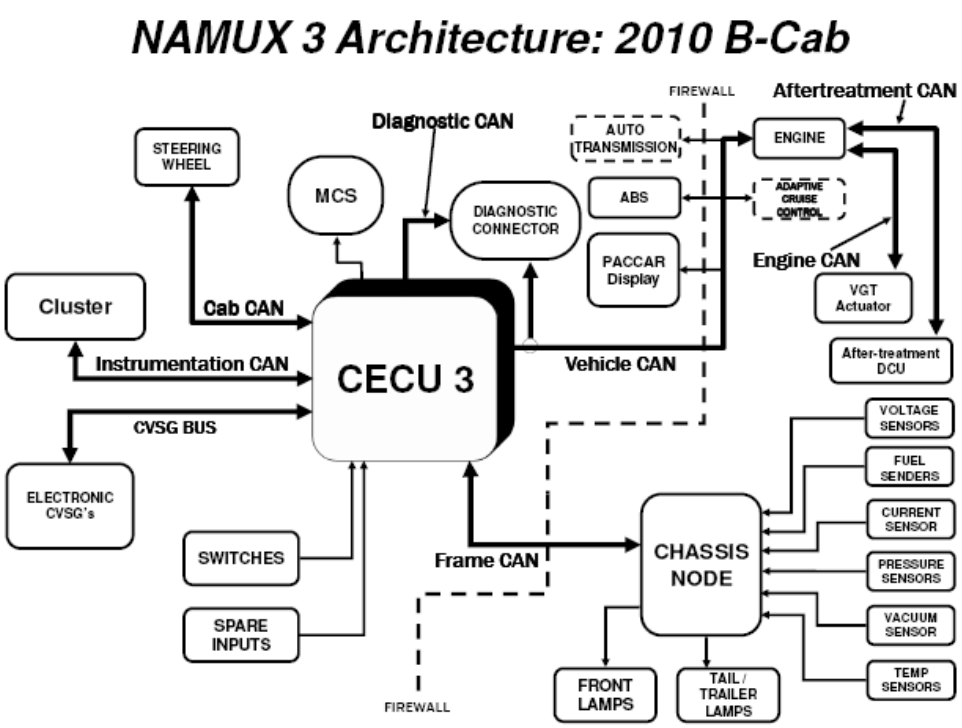
- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1132a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

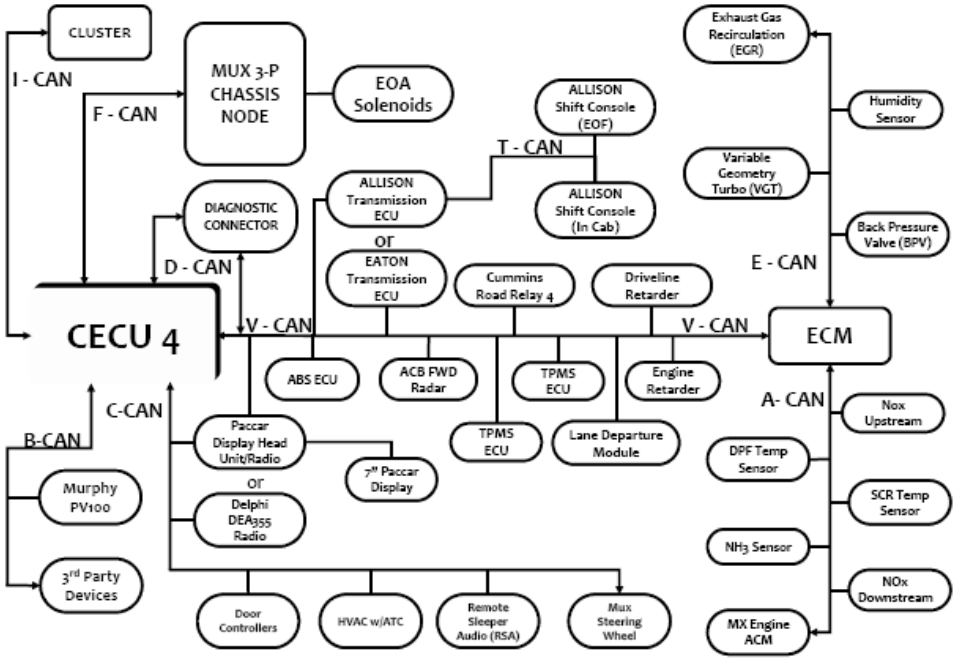
</td></tr>
</table>

	Was there evidence of any of the above? • No: Proceed to step 2. • Yes: Make the appropriate repairs or component replacements. Use DAVIE to re-check for the presence of active faults. • If this related fault is no longer active, then this issue has been resolved. • If this related fault is still active, Proceed to step 2
	Step 2 | Step ID 1132b | SRT Data check • Lookup the technical data of the specific system • Perform the checking data test of the specific component Is test pass? • No: Proceed to step 3 • Yes : Proceed to step4
	Step 3 | Step ID 1132c | SRT Repair or replace component • Repair or replace the component, also check for electrical connection and wiring harness. • Reconnect the connector • ON the ignition key Use DAVIE to re-check for the presence of active faults: • Is DTC fault active: Proceed to step 4 • Is DTC fault inactive: Issue resolved. Clear inactive fault.
	Step 4 | Step ID 1132d | SRT For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.
Verification Drive Cycle	To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.
	Back to Index

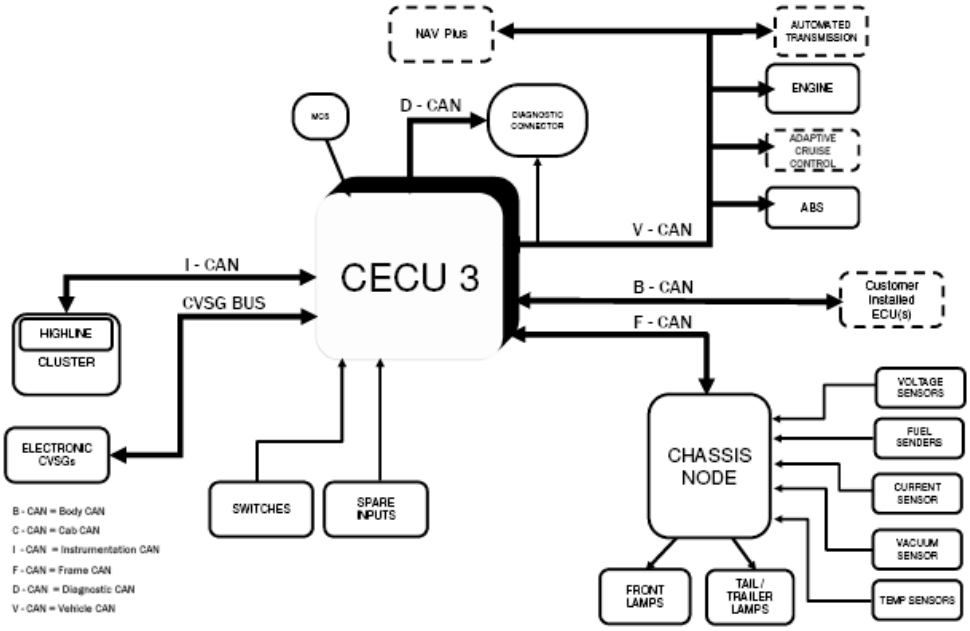
U1134

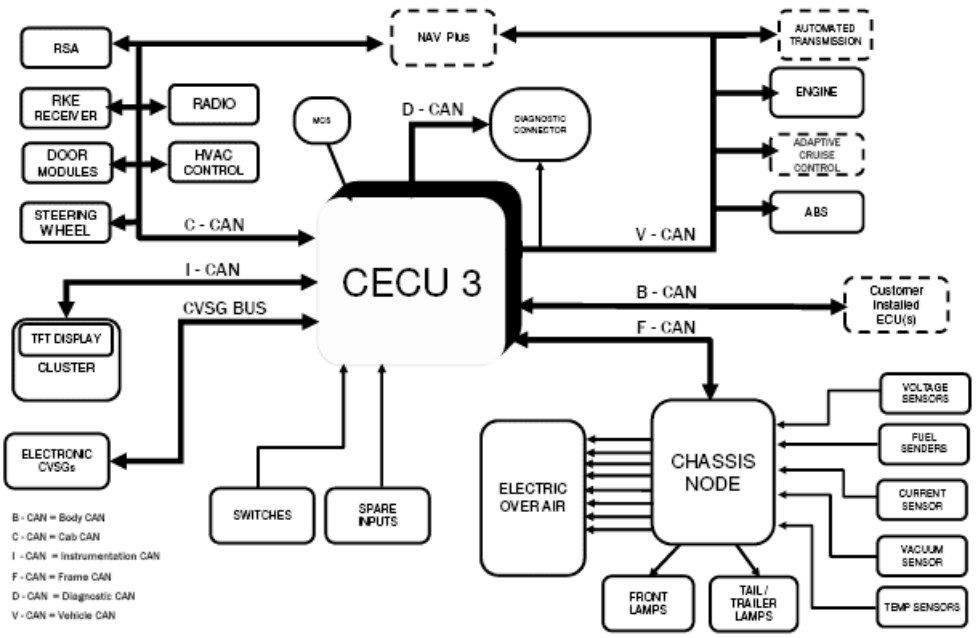
Code number	U1134
Fault code description	CAN communication - Message (A1SCRDSR2) rate too low from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	CAN command message A1SCRDSR2 is missing for more than 1.5 sec.
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Open circuit, short circuit to ground, or short circuit to supply in the CAN network wiring
Additional information	No additional information available.
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1134a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.		

<table>
<tr><td></td><td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1134b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

<table>
<tr><td>Step 3</td><td>Step ID 1134c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive: Issue resolved. Clear inactive fault</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 1134d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

U1136

Code number	U1136
Fault code description	CAN communication - Message (HRW) rate too low from brake system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	CAN command message HRW is missing for more than 0.06 seconds.
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	
Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Open circuit, short circuit to ground, or short circuit to supply in the CAN network wiring • Incorrect male terminal in J1939 network that can cause intermittent communication
Additional information	No additional information available.
Diagnostic Step-by-Step	**The ignition should always be in the OFF position when connecting or disconnecting electrical components to reduce the likelihood of damage to the components.** ▪ This troubleshooting procedure is based on the assumption that supply power and ground to the PMCI are functioning properly. ▪ Disconnecting the PMCI connectors during the troubleshooting process will result in multiple errors. ▪ Specific electrical component information and pin out locations are provided in this procedure as a reference only. Always refer to the technical data sections in Rapido for the most up-to-date changes. ▪ It is necessary to use DAVIE to clear all current trouble codes from the PCI and EAS-3 ECUs, and then run the Quick Check to identify a change in fault status.

- This DTC can be set as a result of multiple failure modes. For proper fault isolation, complete all troubleshooting steps in the sequence provided.

Step 1. Data Bus Connection Checks

Step 1.A Visual inspection, J1939 connectors

Action

2. Set the ignition switch to OFF.
3. Locate the J1939 connectors on the OEM engine harness, near the firewall on the driver's side of the engine.
4. Visually inspect all J1939 connectors for bent, broken, corroded, or loose pins.
5. Inspect the wires for signs of damage (strain) where they leave the connectors.
6. Inspect male connector pins to ensure that the correct terminal pin type has been installed.

Correct terminal pins:

- Thicker material
- Terminal pin ends are almost flush with the top of the plastic terminal separator

Incorrect terminal pins:

- Thinner material
- Terminal pins are recessed in the connector socket

Were there any signs of damage to the connectors or connector pins, connector wires, or were any of the terminal connector pins found to be incorrect?

Yes	**No**
Correct any issues found. Refer to step 4.A to perform the corresponding repair verification cycles and rechecks.	

If this code is still present, go to step 2.A	Go to step 2.A

Step 2. ABS Connection Checks

Step 2. A Visual inspection, ABS connector	
Action 2. Set the ignition switch to OFF. 3. Locate the ABS connector on the inside of the dashboard (refer to the related OEM service information for the particular vehicle make and model). 4. Visually inspect the ABS connector for signs of bent, broken, corroded, or loose connector pins. 5. Inspect the J1939 wires (green/yellow twisted pair) for signs of damage (strain) where they leave the connectors.	
Was there evidence of any of the above?	
Yes	**No**
Correct any issues found. Refer to Step 4.A to perform the corresponding repair verification cycles and rechecks.	
If this code is still present, go to Step 3.A	Go to step 3.A

Step 3. Data Bus Harness Checks

Step 3. A Visual inspection, J1939 harness wiring	
Action 1. Set the ignition switch to OFF. 2. Visually inspect the J1939 wires (green/yellow twisted pair) in the dash and engine harness for any signs of damage to the insulation caused by heat, chafing, or cuts. Removal of the convolute tubing may be needed to expose the harness wires for a full visual inspection.  It may be necessary to remove the convolute tubing to expose the wires for a full visual inspection.	
Were there any signs of damage to the J1939 harness wiring?	
Yes	**No**

Correct any issues found. Refer to Step 4.A to perform the corresponding repair verification cycles and rechecks.	
If this code is still present, contact the PACCAR Engine Support Center for further assistance.	Contact the PACCAR Engine Support Center for further assistance.

Step 4. Repair Verification

Step 4.A Repair verification cycles

Perform these repair verification cycles following any corrective actions taken, to enable related OBD monitors to reach a readiness state associated with the trouble code or system being investigated.

Before beginning these repair verification cycles, use the DAVIE Diagnostics, Quick Check function to clear all current DTCs from the PCI and EAS-3 ECUs.

Action

2. Power-up/Electrical

   With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics.

Were the identified repair verification cycles able to be completed?

Yes	No
	Investigate and correct any issues preventing these repair verification cycles from being completed, then re-run. For additional assistance, contact the PACCAR Engine Support Center.
Go to step 4.B	

Step 4.B DAVIE Diagnostics, Quick Check

Action

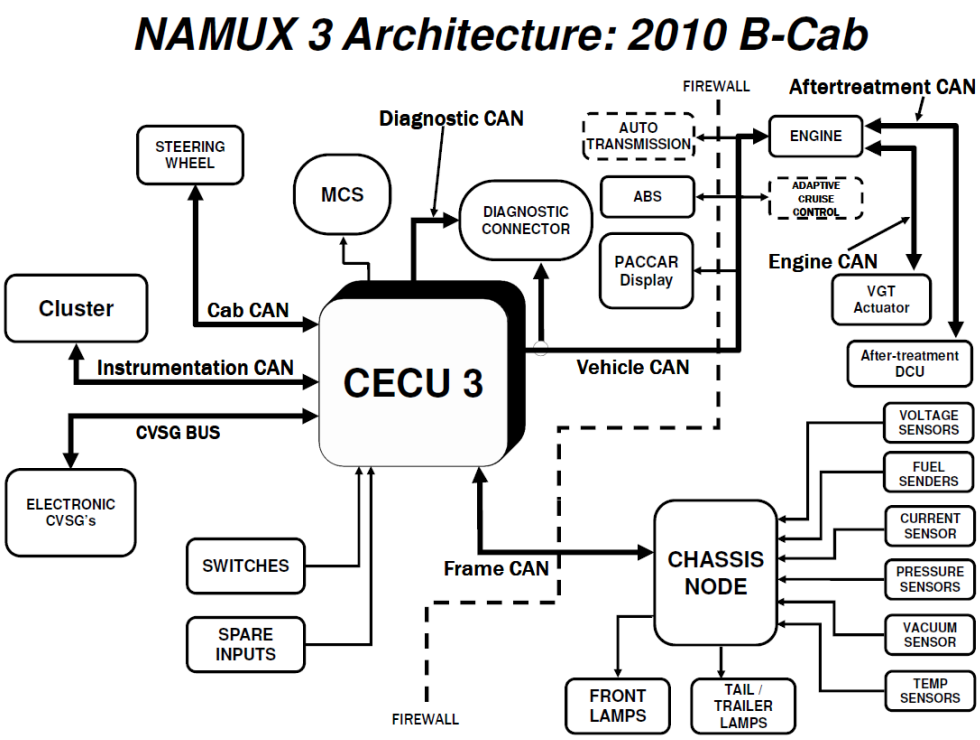
1. Use DAVIE Diagnostics to perform a Quick Check for current trouble codes to determine whether the actions taken have cleared this code.

Has U1136 been cleared?

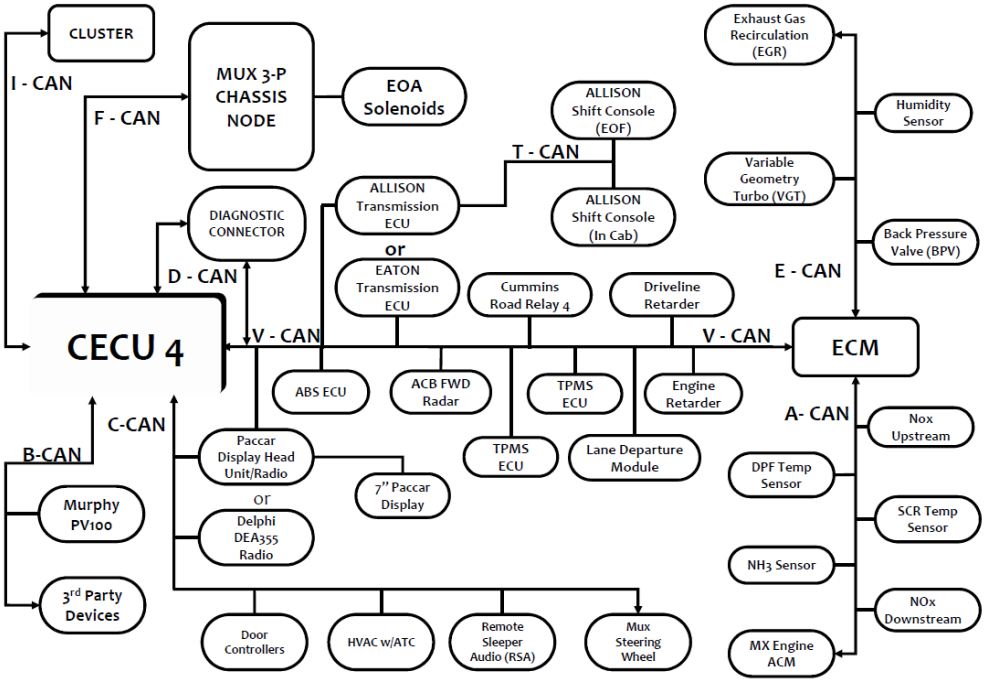
Yes	No
Problem resolved. No further actions.	Continue with the next step in this troubleshooting procedure. If all steps have been completed and this trouble code is still present, contact the PACCAR Engine Support Center for further assistance.

		For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the PACCAR Engine Support Call Center.
		Back to Index

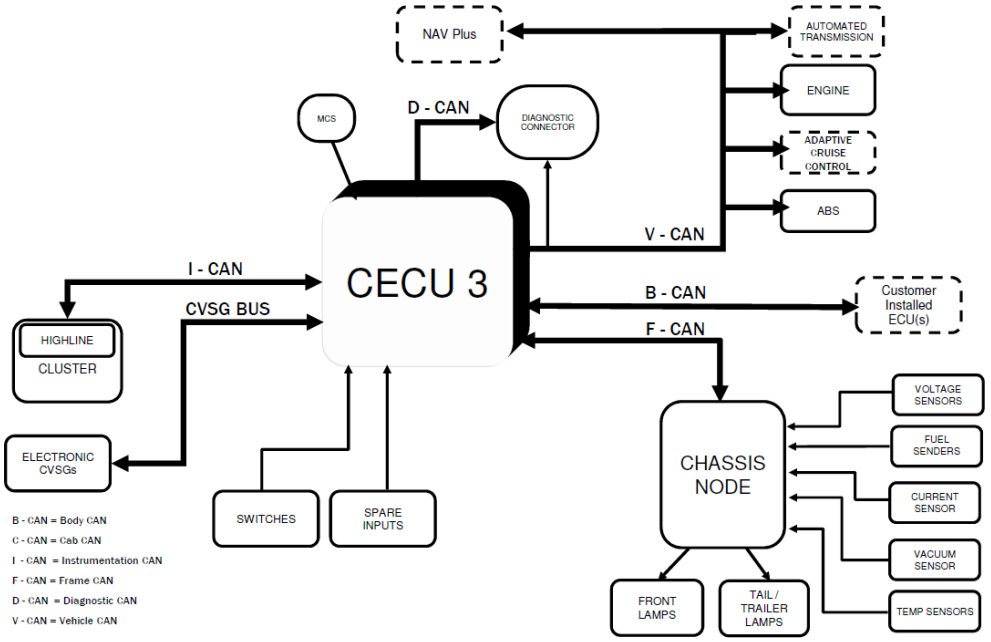
U1138

Code number	U1138
Fault code description	CAN communication - Message (TSC_AE) rate too low from brake system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680

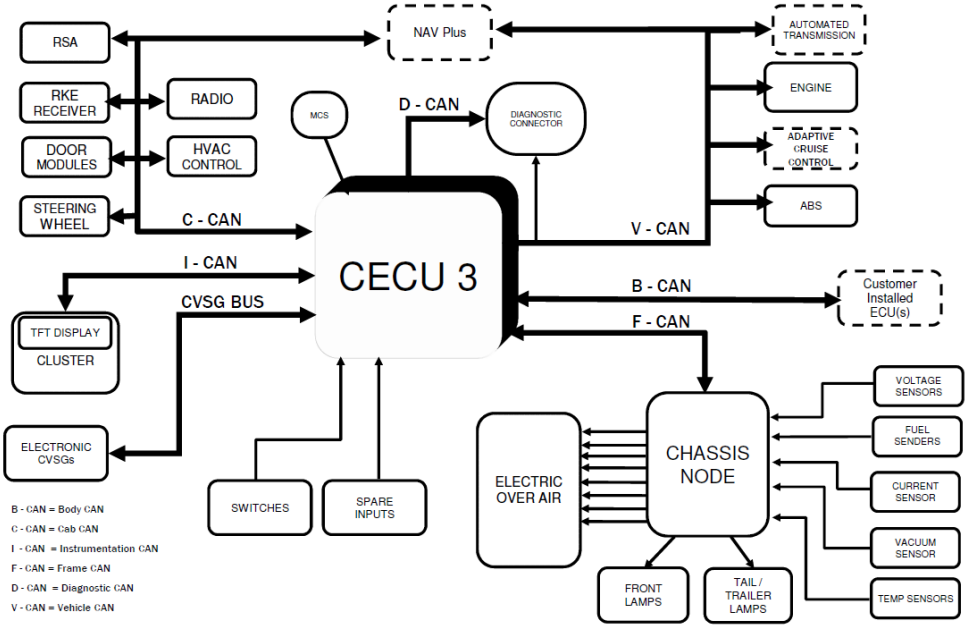


NAMUX 3 Architecture



<table>
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Open circuit, short circuit to ground, or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available.</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1138a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

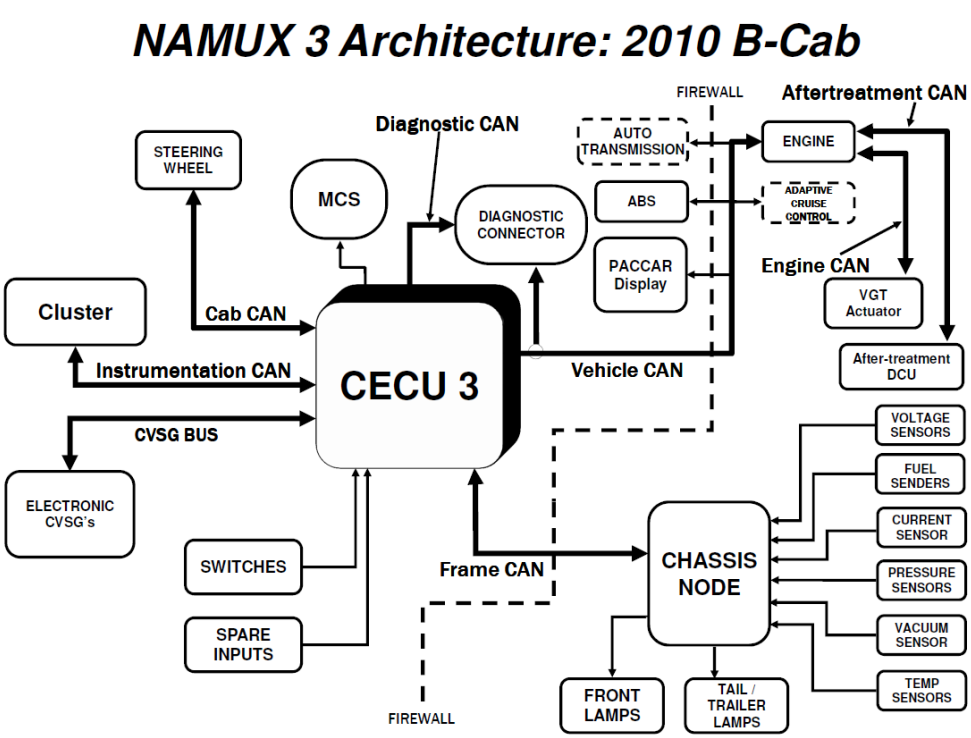
<table>
<tr><td></td><td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1138b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

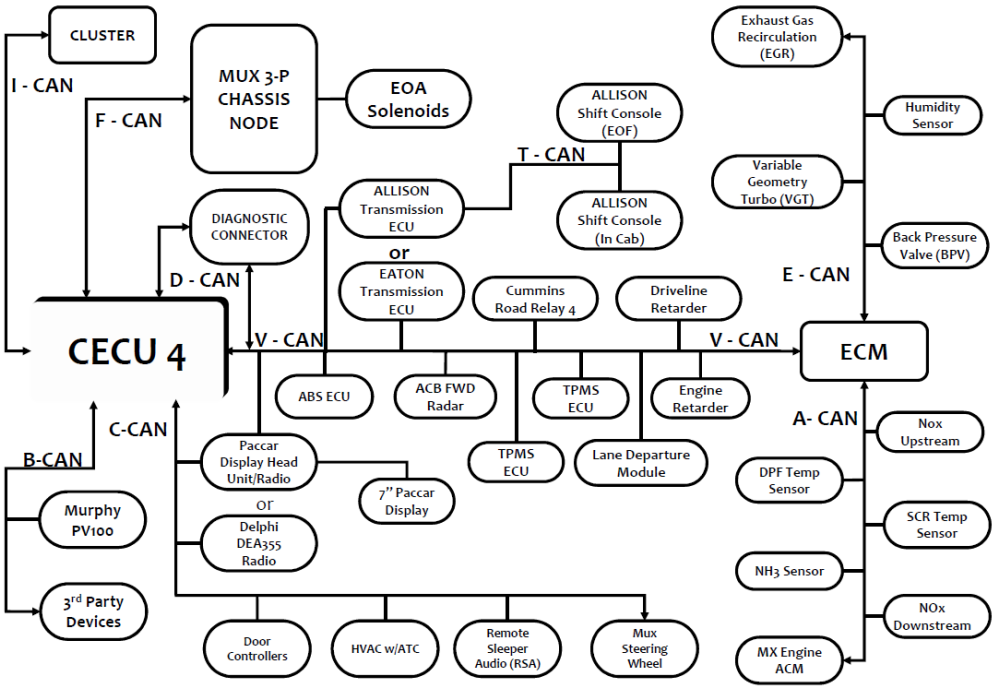
<table>
<tr><td>Step 3</td><td>Step ID 1138c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness .
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive : Issue resolved. Clear inactive fault.</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 1138d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics.
With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

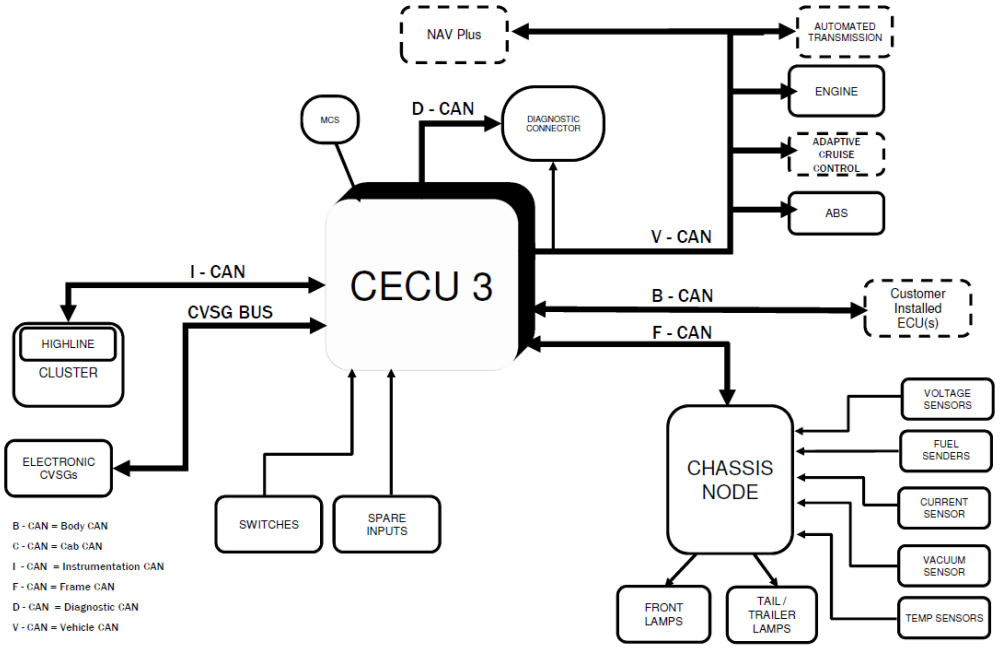
U113A

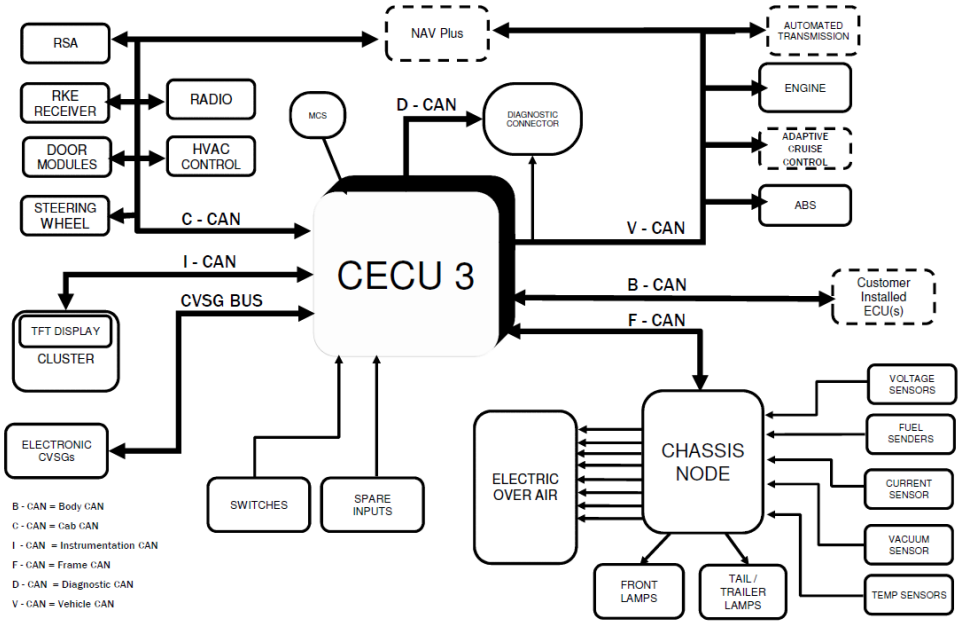
Code number	U113A
Fault code description	CAN communication - Message (AT1HI) rate too high from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Fault in aftertreatment ECU
Additional information	No additional information available.
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 113A-a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above?		

<table>
<tr><td></td><td>

No: Proceed to step 2.
Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 113A-b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system
Perform the checking data test of the specific component

Is test pass?

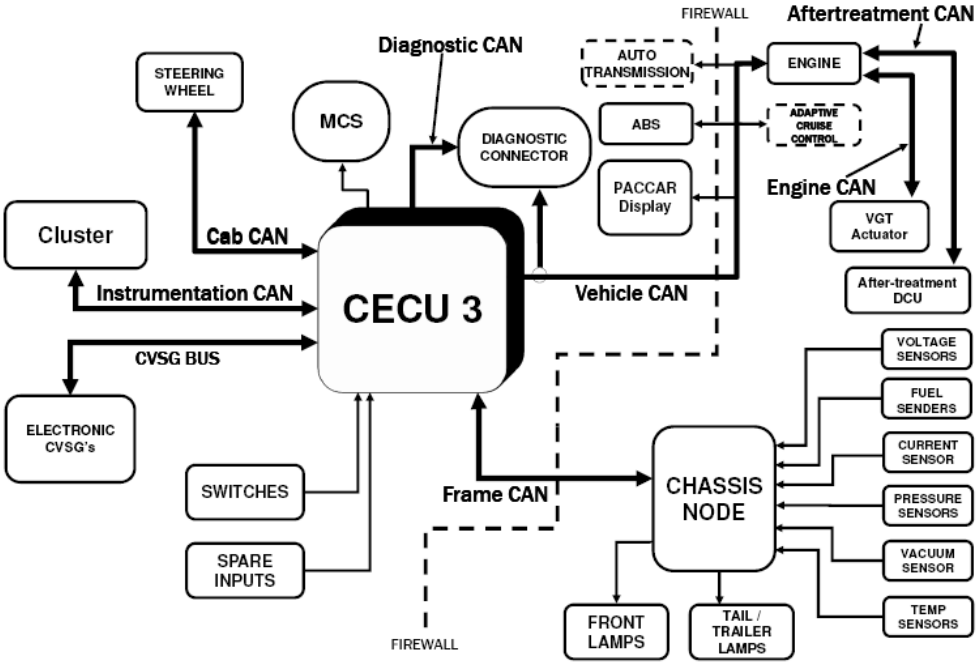
No: Proceed to step 3
Yes : Proceed to step4
</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 113A-c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

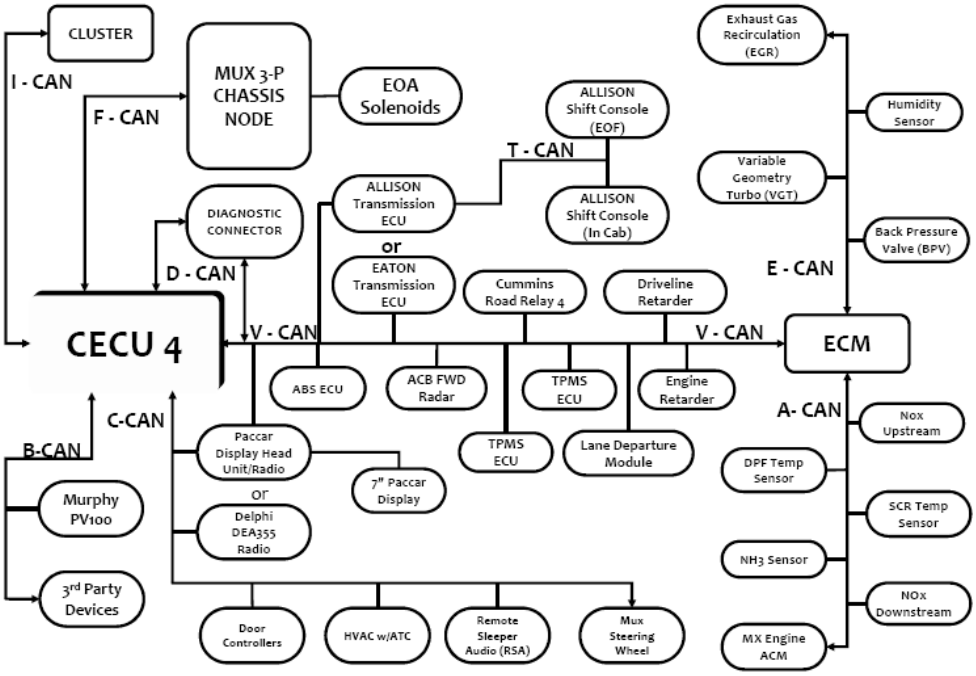
Repair or replace the component, also check for electrical connection and wiring harness .
Reconnect the connector
ON the ignition key

Use DAVIE to re-check for the presence of active faults:

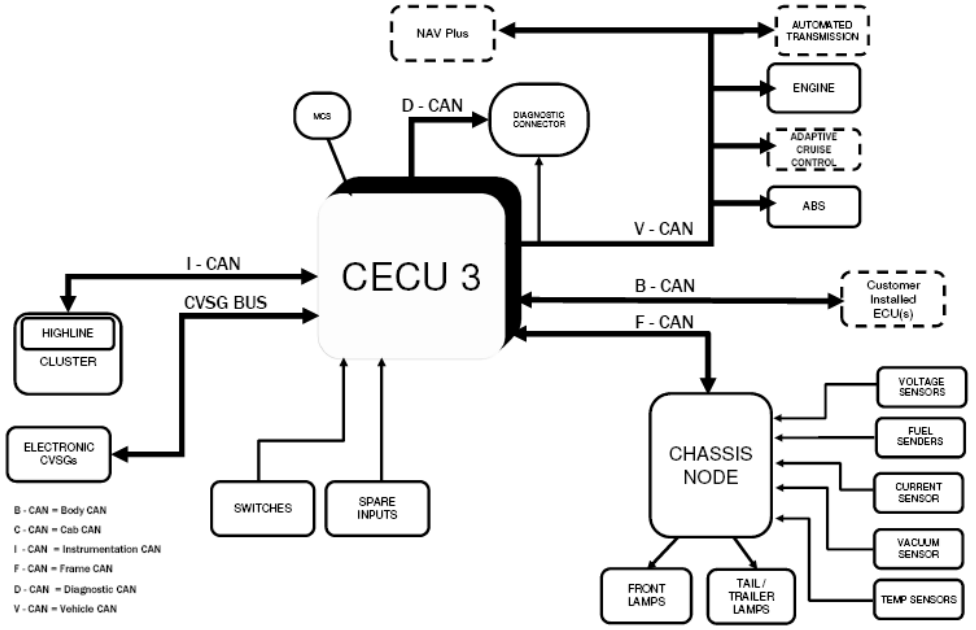
Is DTC fault active: Proceed to step 4
Is DTC fault inactive : Issue resolved. Clear inactive fault.
</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 113A-d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

U113D

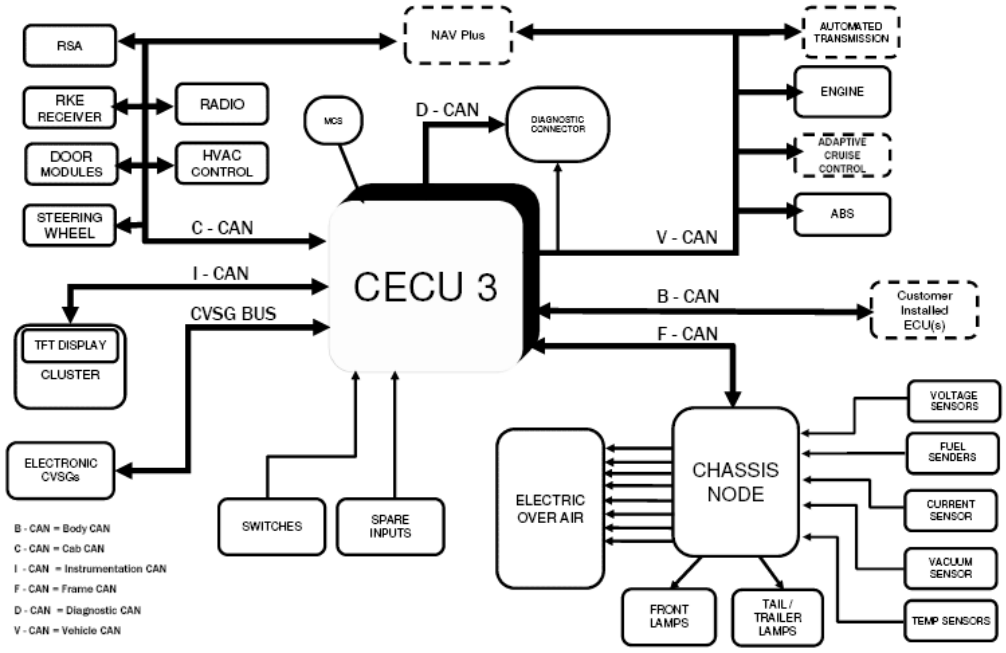
Code number	U113D
Fault code description	CAN communication - Message (A1SCRDSI2) rate too low
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	CAN command message A1SCRDSI2 is missing for more than 1.5 seconds.
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	 NAMUX 3 Architecture: 2010 B-Cab



NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



NAMUX 4 Architecture

Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring
Additional information	No additional information available.
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 113D-a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above?		

<table>
<tr><td></td><td>

No: Proceed to step 2.
Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 113D-b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system
Perform the checking data test of the specific component

Is test pass?

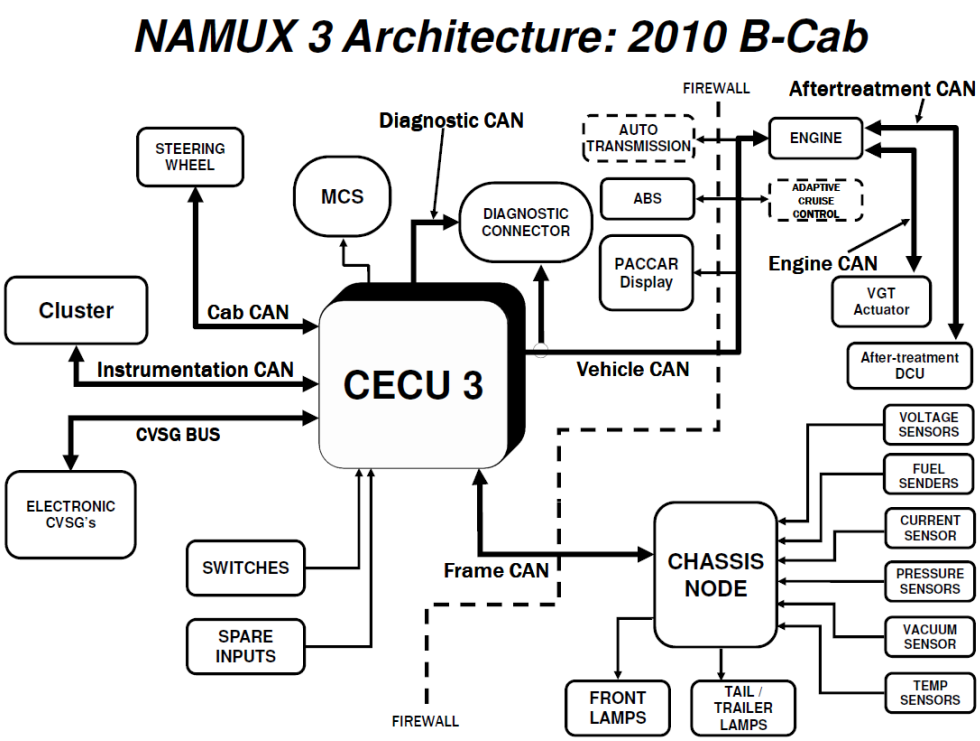
No: Proceed to step 3
Yes : Proceed to step4
</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 113D-c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key

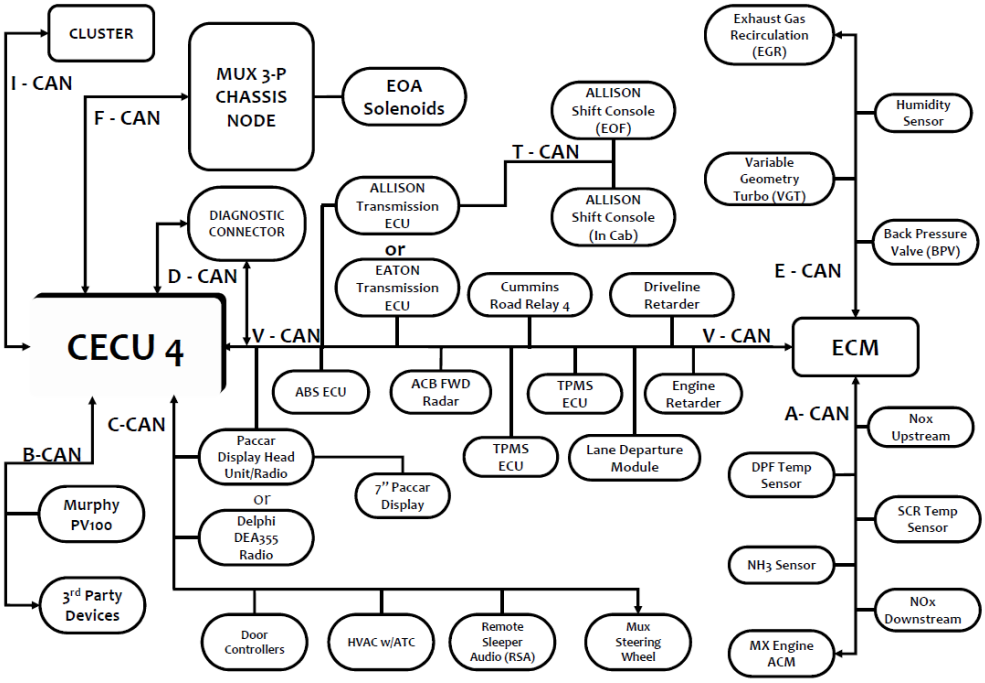
Use DAVIE to re-check for the presence of active faults:

Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault
</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 113D-d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

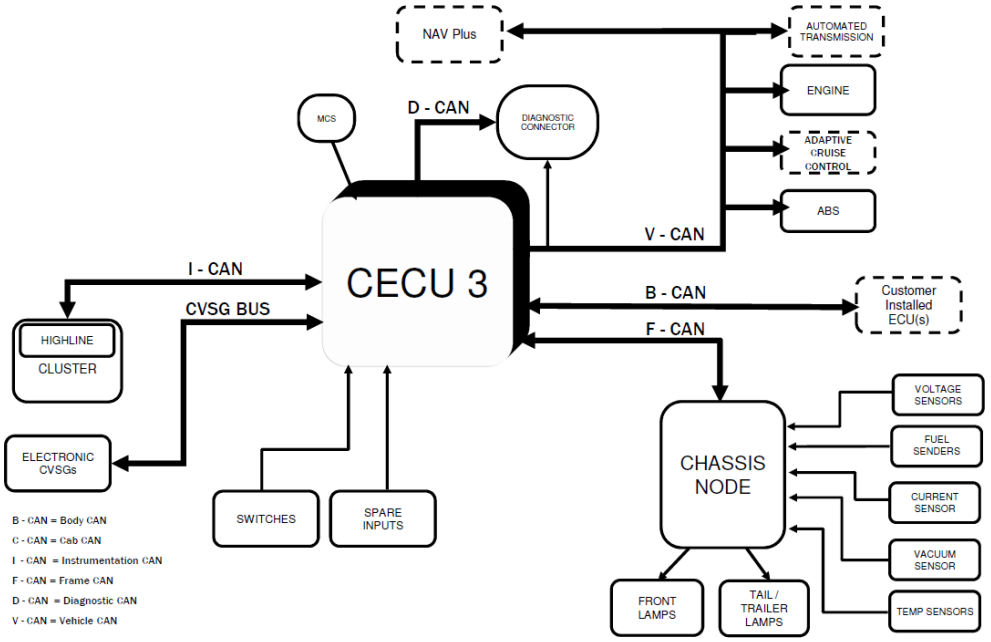
U1144

Code number	U1144
Fault code description	CAN communication - Message (TD) rate too low from tachograph
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680

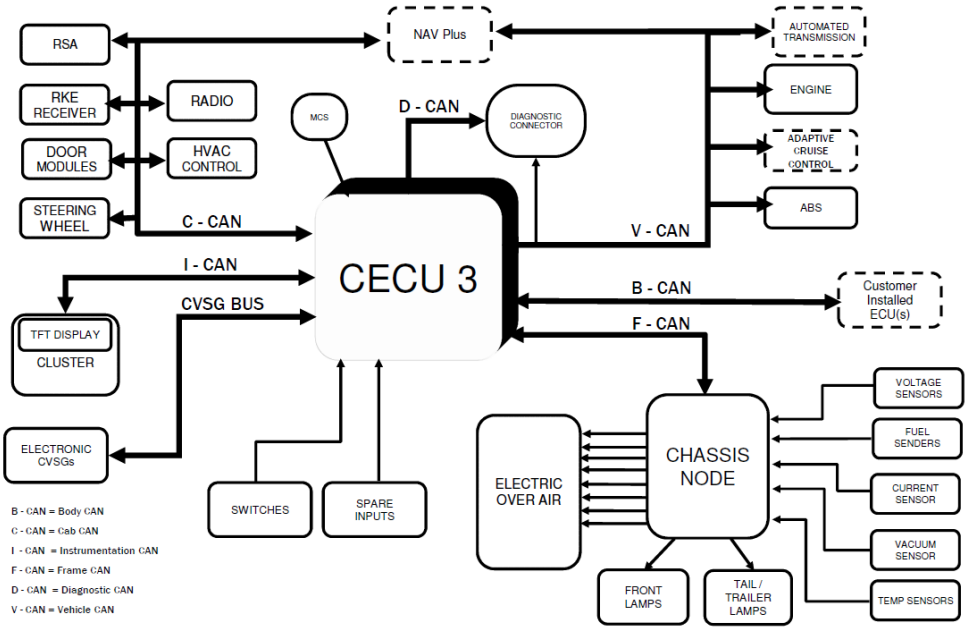


NAMUX 3 Architecture



<table>
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring.

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pin out locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1144a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above?		

</td></tr>
</table>

<table>
<tr>
<td></td>
<td>

No: Proceed to step 2.
Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1144b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system
Perform the checking data test of the specific component

Is test pass?

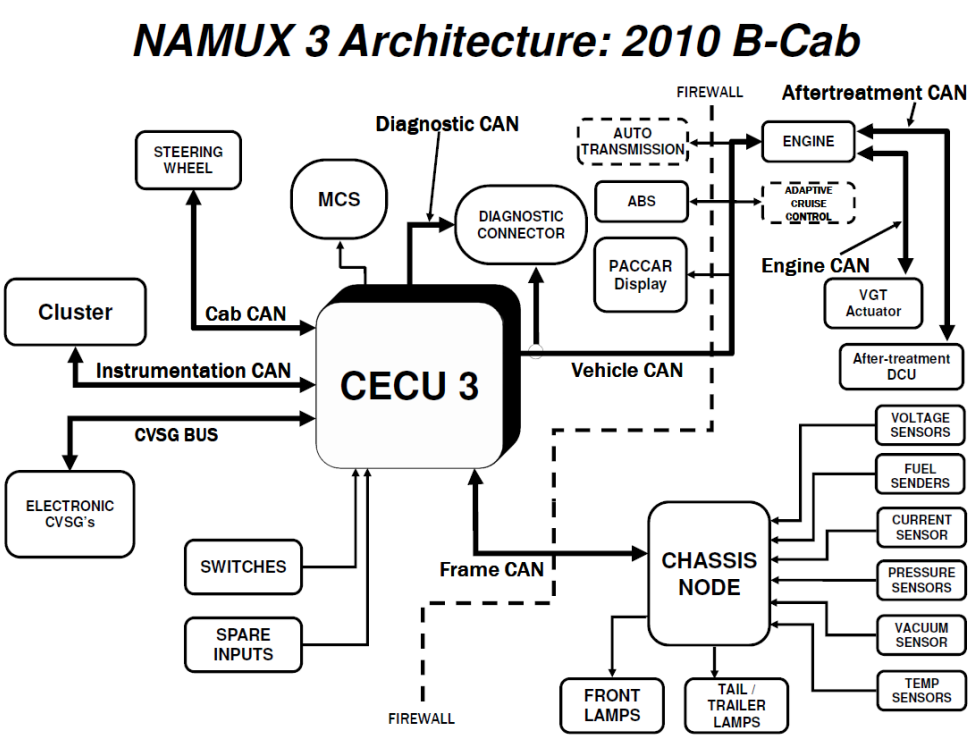
No: Proceed to step 3
Yes : Proceed to step4
</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1144c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key

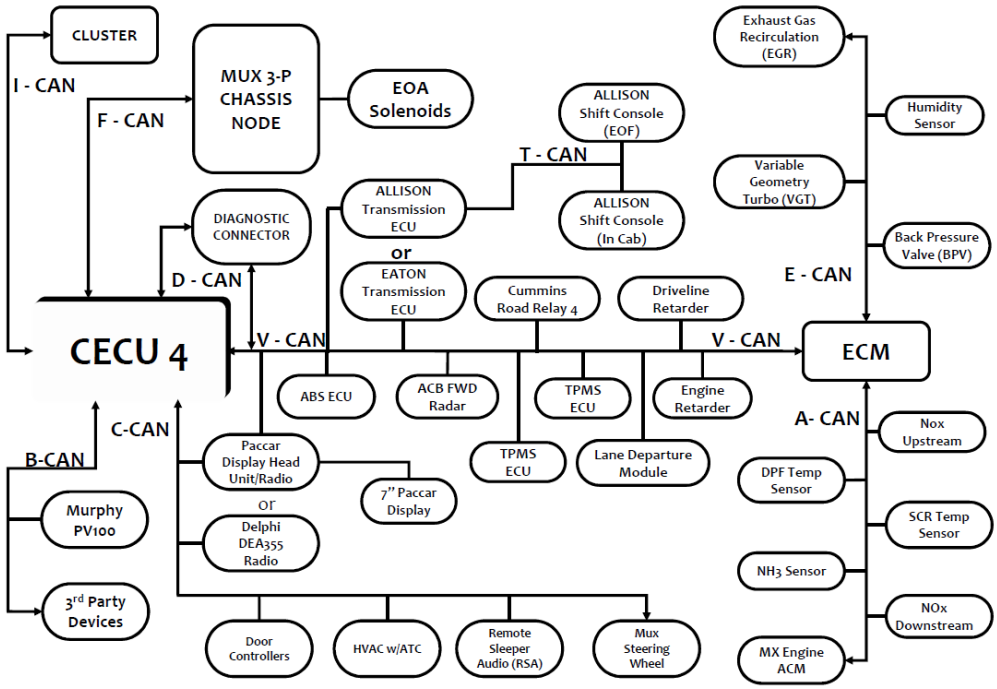
Use DAVIE to re-check for the presence of active faults:

Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault.
</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1144d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Verification Drive Cycle</td>
<td>To verify the repair:
With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics
With the brakes set, start the engine and allow it to run at idle for 2 minutes</td>
</tr>
<tr>
<td></td>
<td>Back to Index</td>
</tr>
</table>

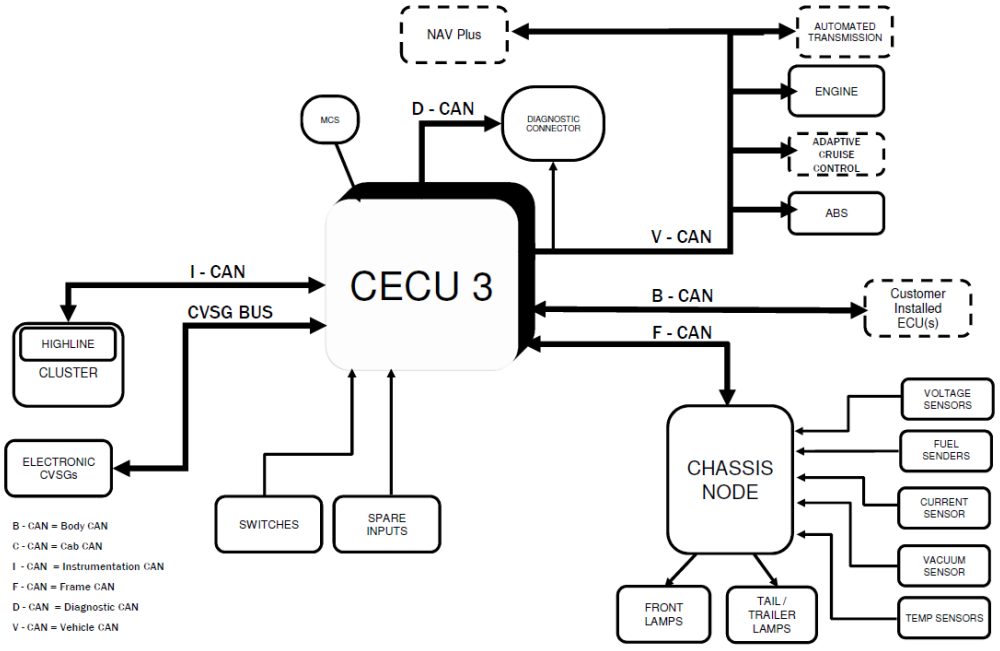
U1145

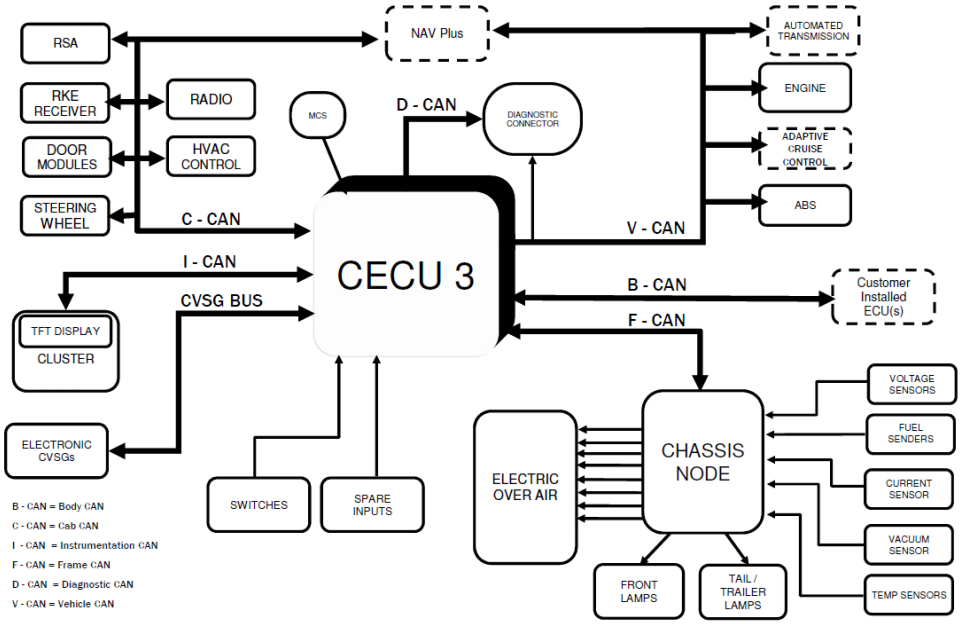
Code number	U1145
Fault code description	CAN communication - Message (A1SCRRSI) rate too low
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	CAN command message A1SCRRSI is missing for more than 3 seconds.
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring
Additional information	No additional information available.
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1145a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic		

	procedure. Was there evidence of any of the above? • No: Proceed to step 2. • Yes: Make the appropriate repairs or component replacements. Use DAVIE to re-check for the presence of active faults. • If this related fault is no longer active, then this issue has been resolved. • If this related fault is still active, Proceed to step 2

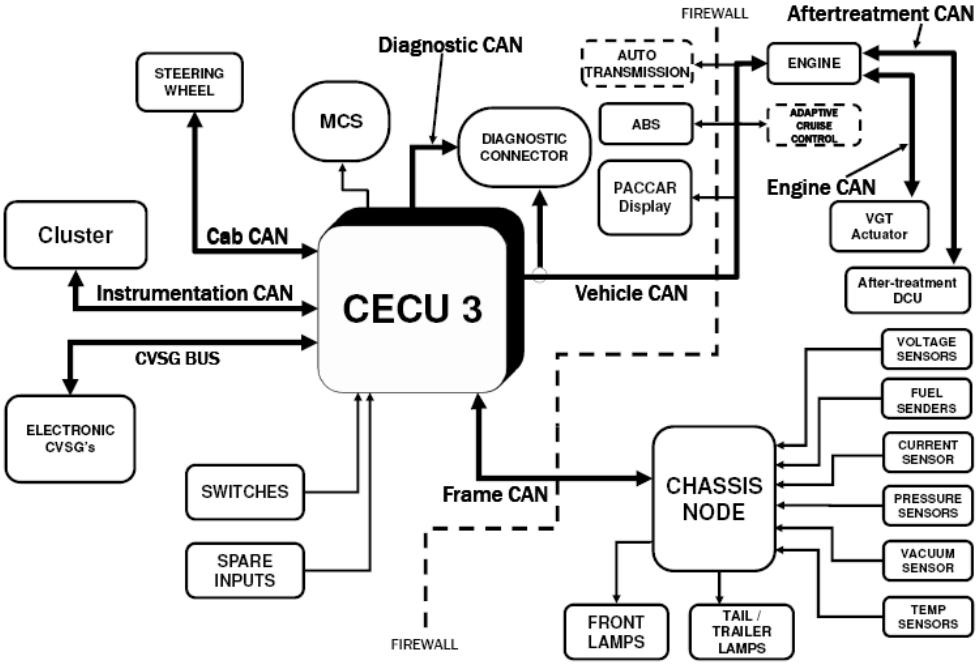
Step 2	Step ID 1145b	SRT
Data check • Lookup the technical data of the specific system • Perform the checking data test of the specific component Is test pass? • No: Proceed to step 3 • Yes : Proceed to step 4		

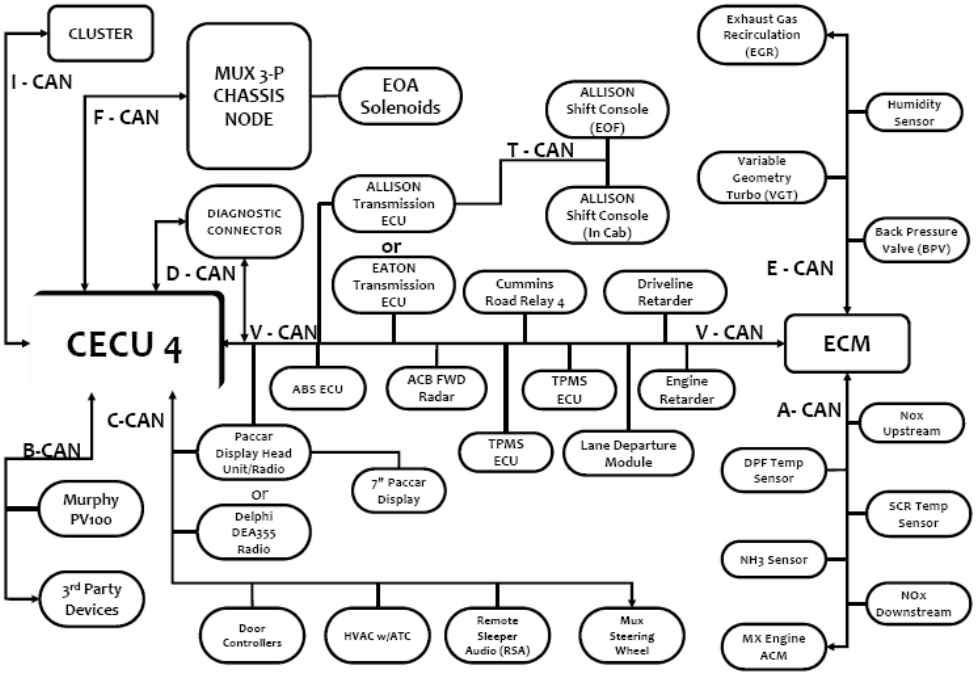
Step 3	Step ID 1145c	SRT
Repair or replace component • Repair or replace the component, also check for electrical connection and wiring harness. • Reconnect the connector • ON the ignition key Use DAVIE to re-check for the presence of active faults: • Is DTC fault active: Proceed to step 4 • Is DTC fault inactive: Issue resolved. Clear inactive fault		

Step 4	Step ID 1145d	SRT
For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.		

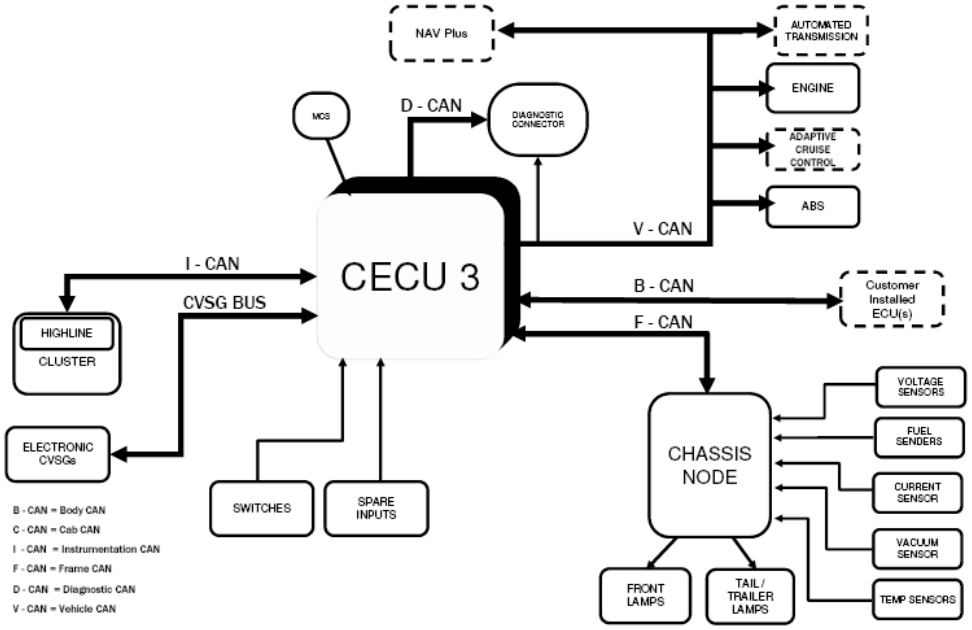
Verification Drive Cycle	To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.
	Back to Index

U1147

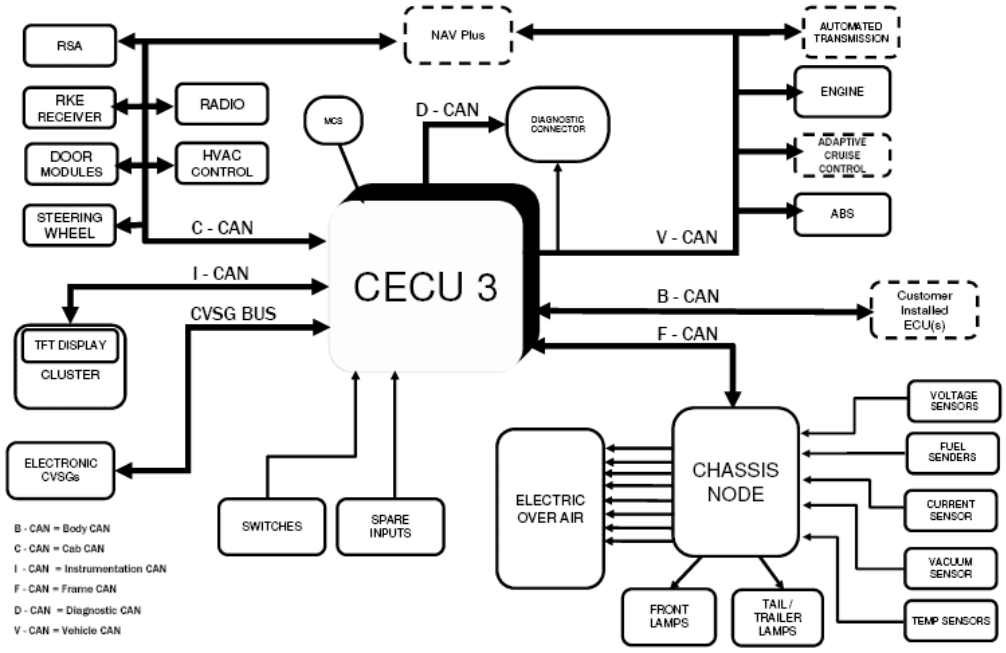
Code number	U1147
Fault code description	CAN communication - Message (A1SCRRSI) rate too low from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	CAN command message A1SCRRSI is missing for more than 1.5 seconds.
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	 NAMUX 3 Architecture: 2010 B-Cab



NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



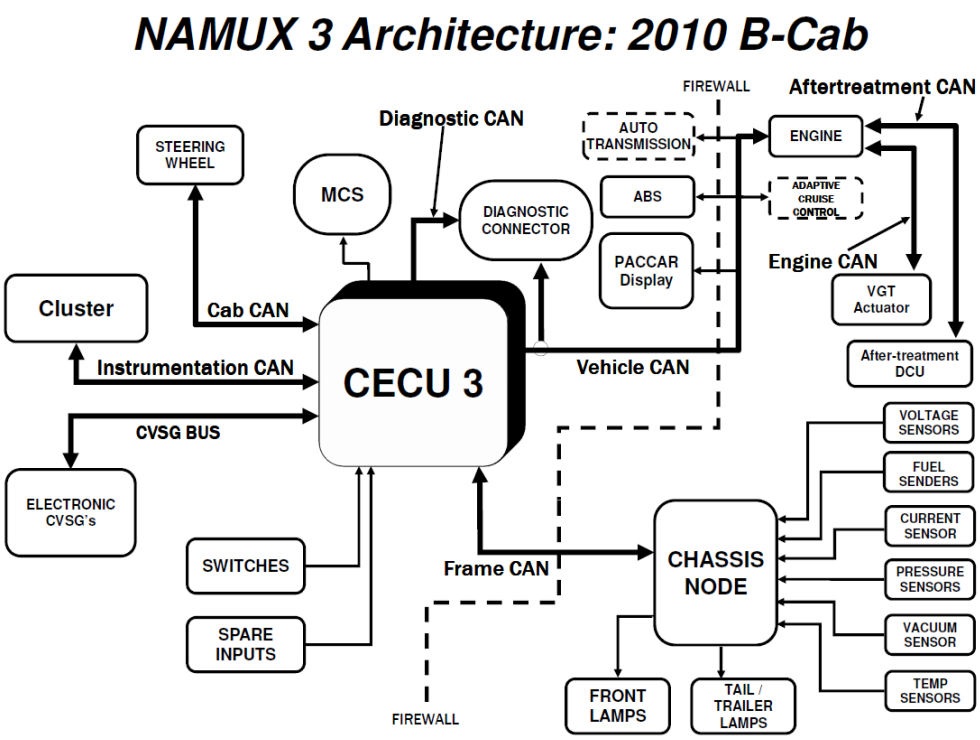
NAMUX 4 Architecture

Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring
Additional information	No additional information available.
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

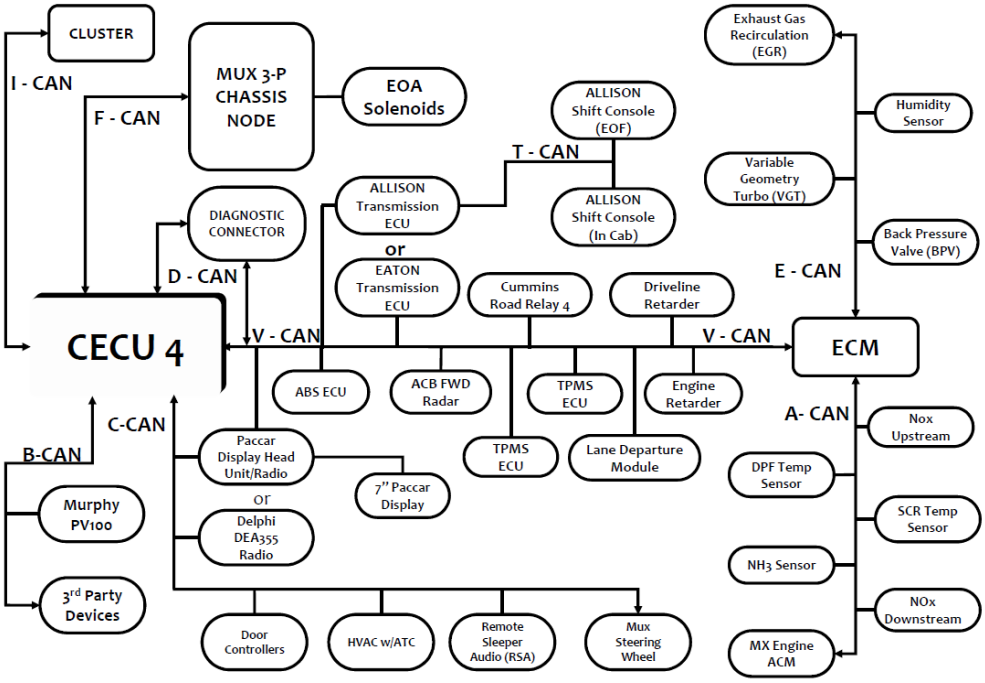
Step 1	Step ID 1147a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above?		

<table>
<tr><td></td><td>
No: Proceed to step 2.
Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2
<table>
<tr><td>Step 2</td><td>Step ID 1147b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
Lookup the technical data of the specific system
Perform the checking data test of the specific component
Is test pass?
No: Proceed to step 3
Yes : Proceed to step4</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1147c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key
Use DAVIE to re-check for the presence of active faults:
Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1147d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

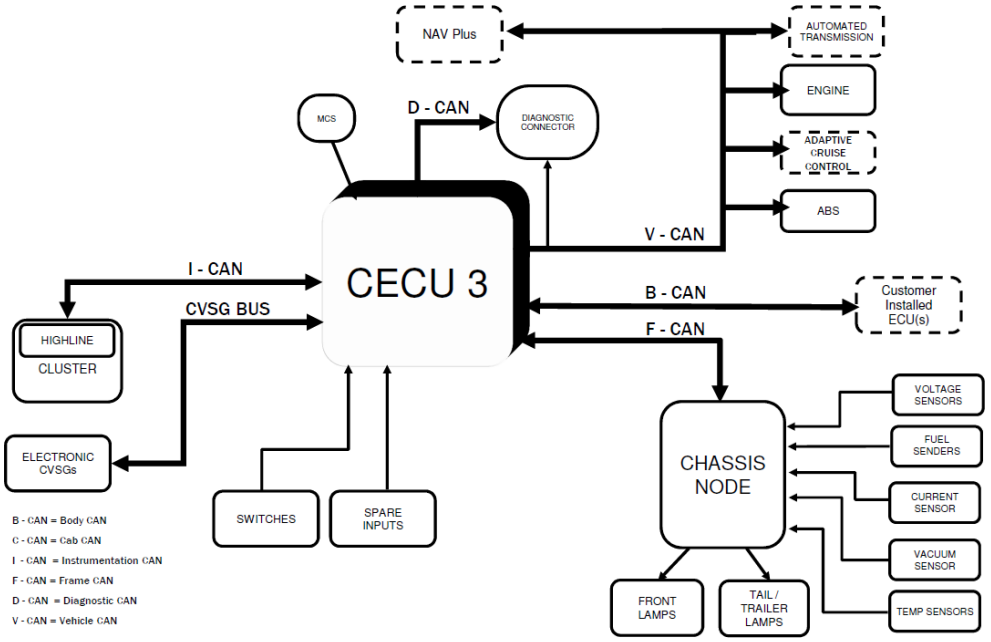
U1149

Code number	U1149
Fault code description	CAN communication - Message (DCUST1) rate too low from emission system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680

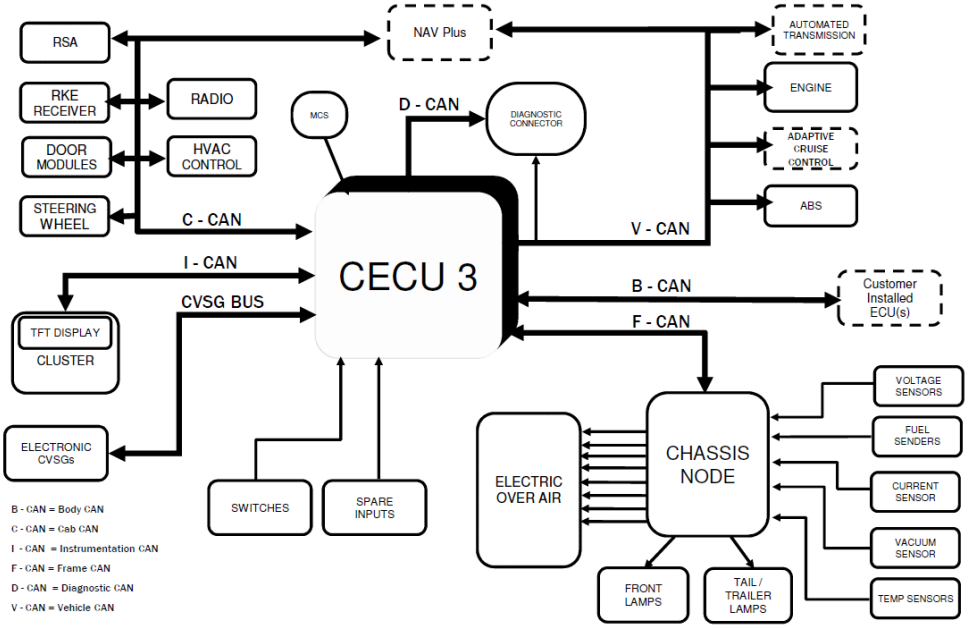


NAMUX 3 Architecture



<table>
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1149a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

<table>
<tr>
<td></td>
<td>
Was there evidence of any of the above?

No: Proceed to step 2.
Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
f this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1149b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system
Perform the checking data test of the specific component

Is test pass?

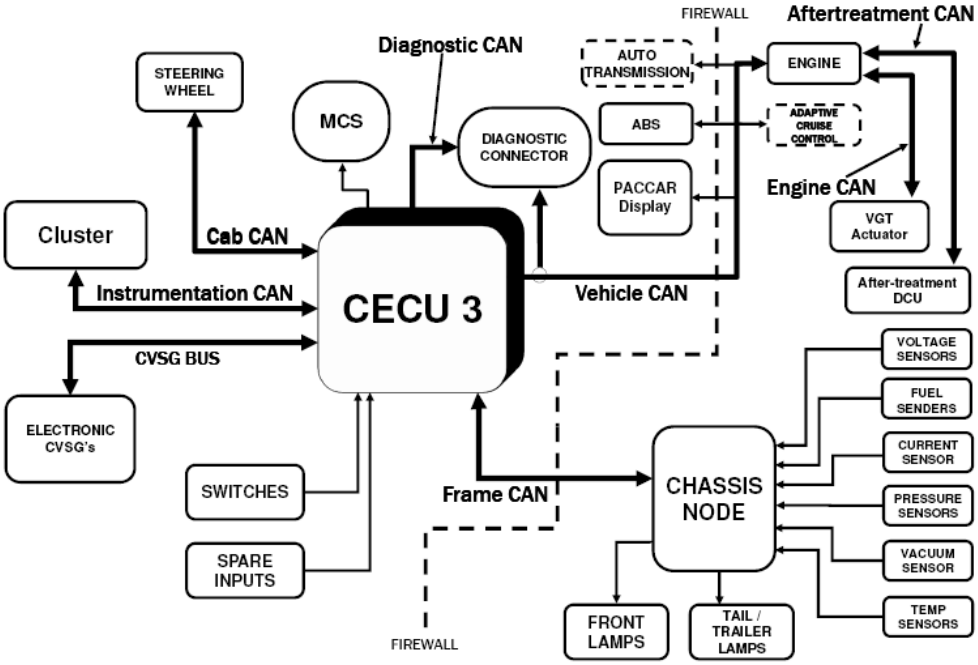
No: Proceed to step 3
Yes : Proceed to step4
</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1149c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

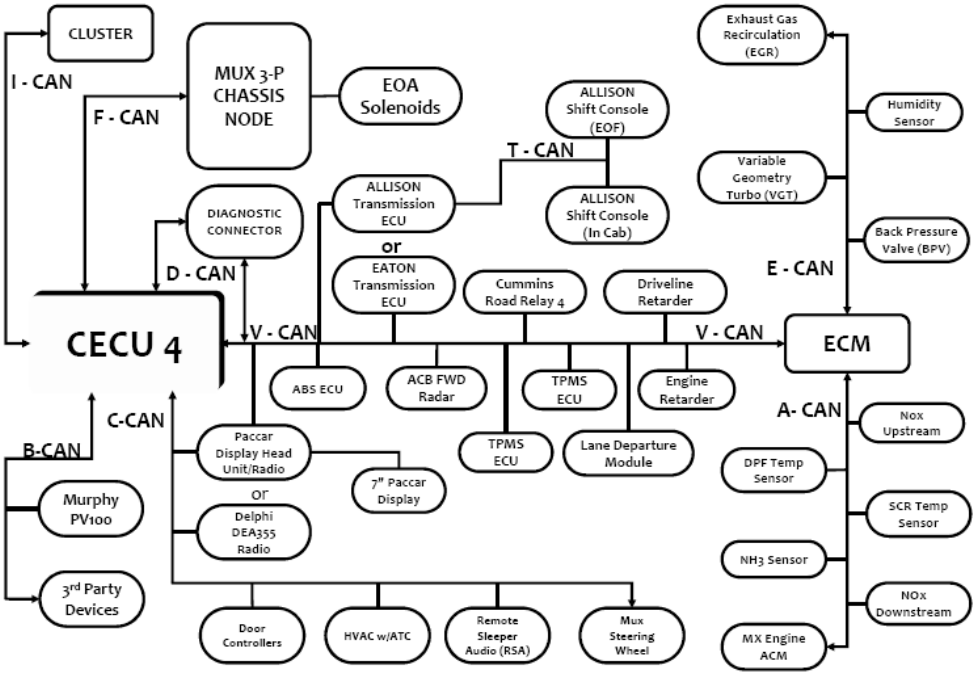
Repair or replace the component, also check for electrical connection and wiring harness .
Reconnect the connector
ON the ignition key

Use DAVIE to re-check for the presence of active faults:

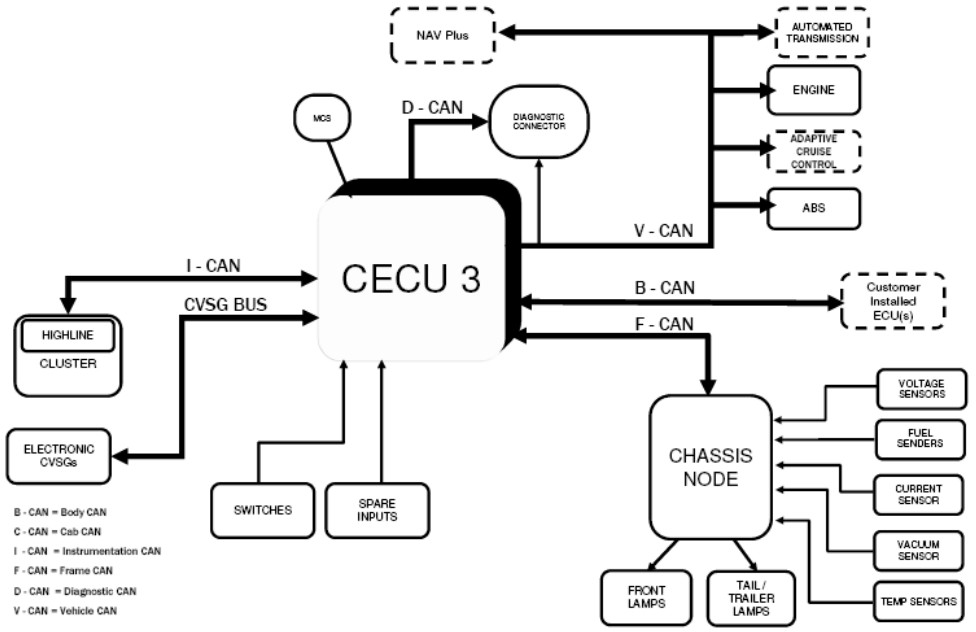
Is DTC fault active: Proceed to step 4
Is DTC fault inactive : Issue resolved. Clear inactive fault
</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1149d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Verification Drive Cycle</td>
<td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td>
</tr>
<tr>
<td></td>
<td>Back to Index</td>
</tr>
</table>

U114A

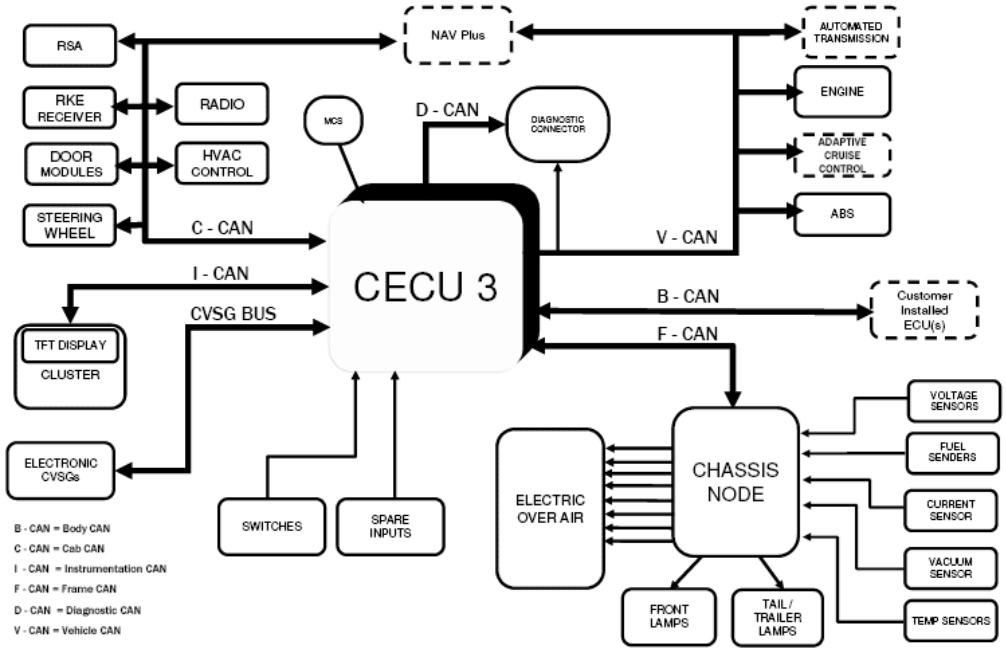
Code number	U114A
Fault code description	CAN communication - Message (A1SCREGT) rate too low from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	CAN command message A1SCREGT is missing for more than 1.5 seconds.
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	 NAMUX 3 Architecture: 2010 B-Cab



NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



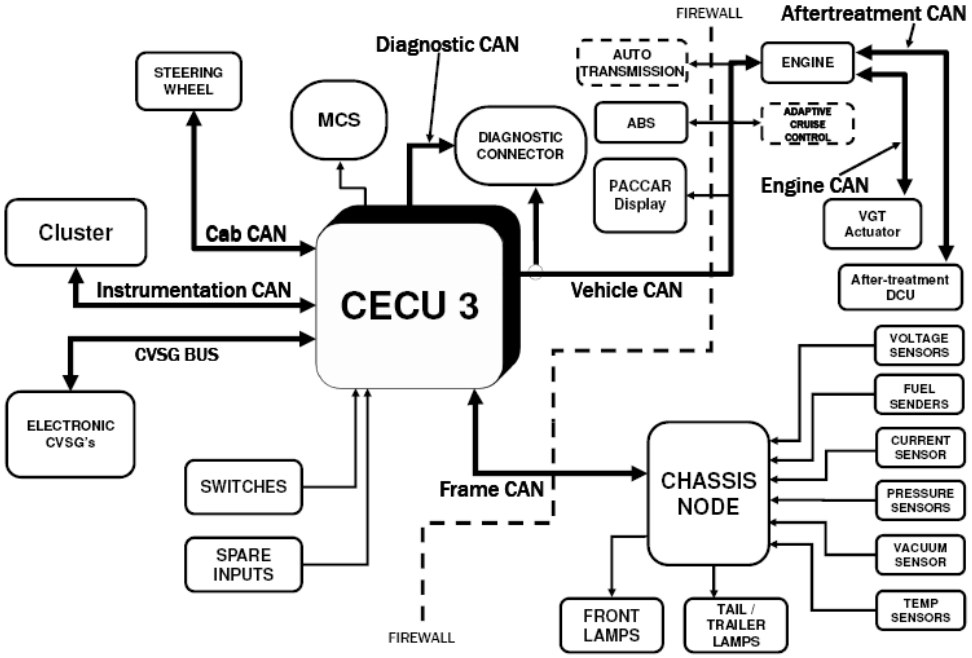
NAMUX 4 Architecture

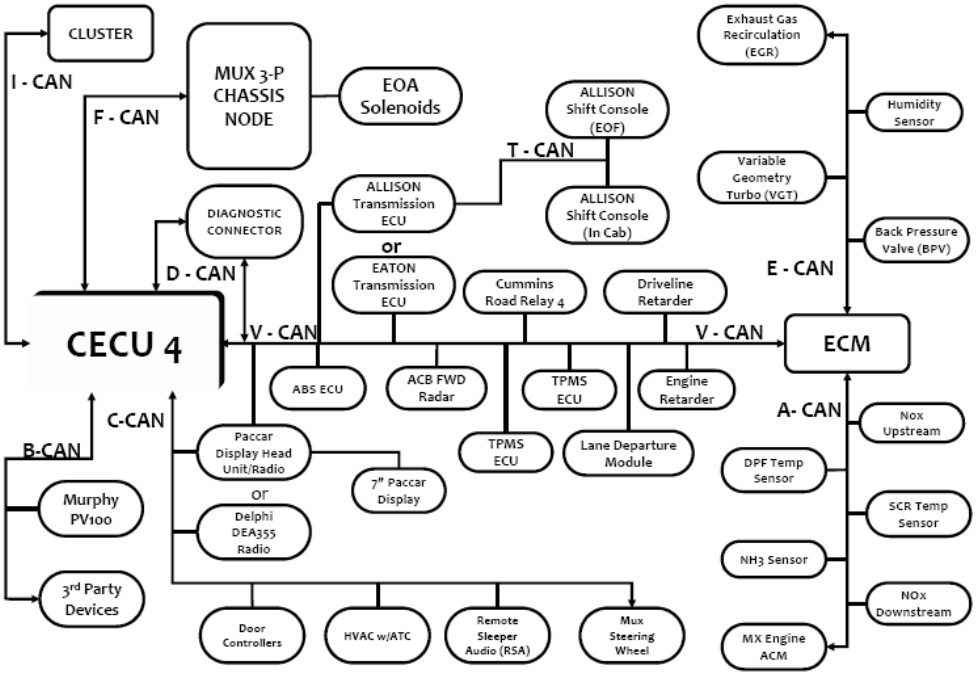
Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring
Additional information	No additional information available.
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 114A-a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above?		

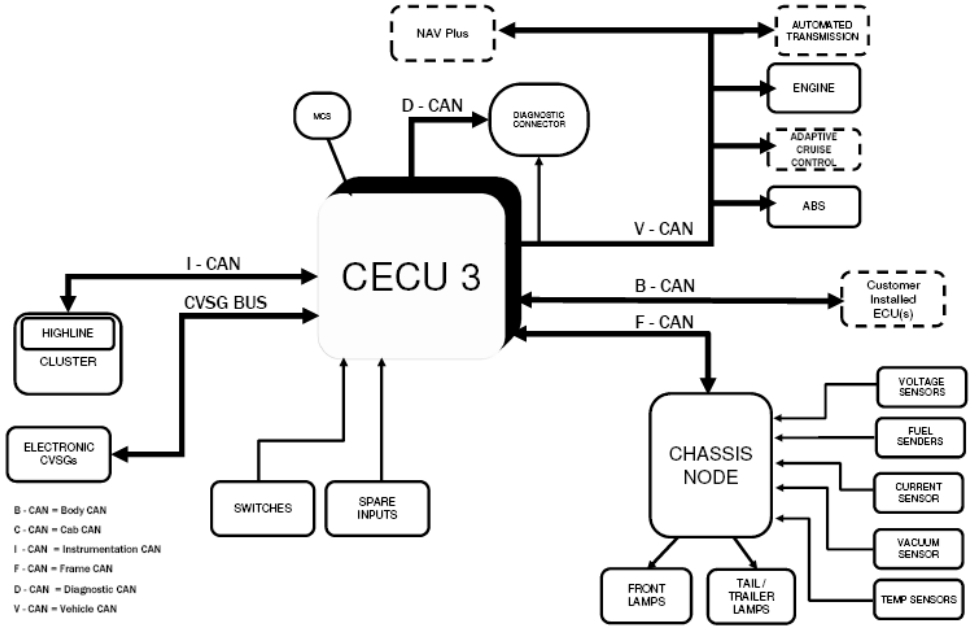
<table>
<tr><td></td><td>
No: Proceed to step 2.
Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2
<table>
<tr><td>Step 2</td><td>Step ID 114A-b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
Lookup the technical data of the specific system
Perform the checking data test of the specific component
Is test pass?
No: Proceed to step 3
Yes : Proceed to step4</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 114A-c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key
Use DAVIE to re-check for the presence of active faults:
Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 114A-d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

U114D

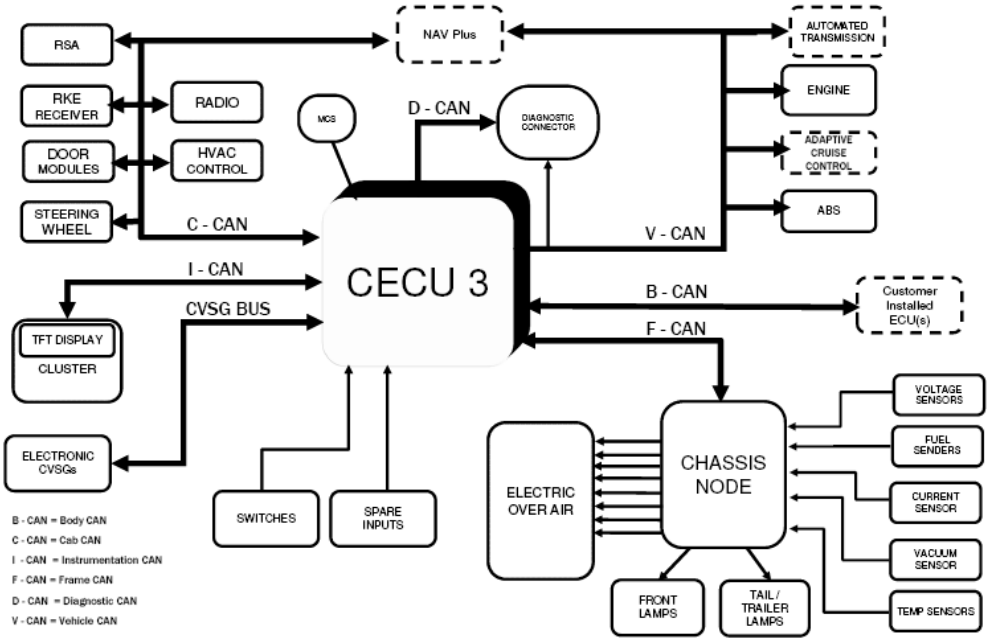
Code number	U114D
Fault code description	CAN communication - Message (A1SCRDSI1) rate too low from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	CAN command message A1SCRDSI1 is missing for more than 1.5 seconds.
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	 NAMUX 3 Architecture: 2010 B-Cab



NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



NAMUX 4 Architecture

Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring
Additional information	No additional information available.
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 114D-a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above? • No: Proceed to step 2.		

<table>
<tr>
<td></td>
<td>

Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 114D-b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system
Perform the checking data test of the specific component

Is test pass?

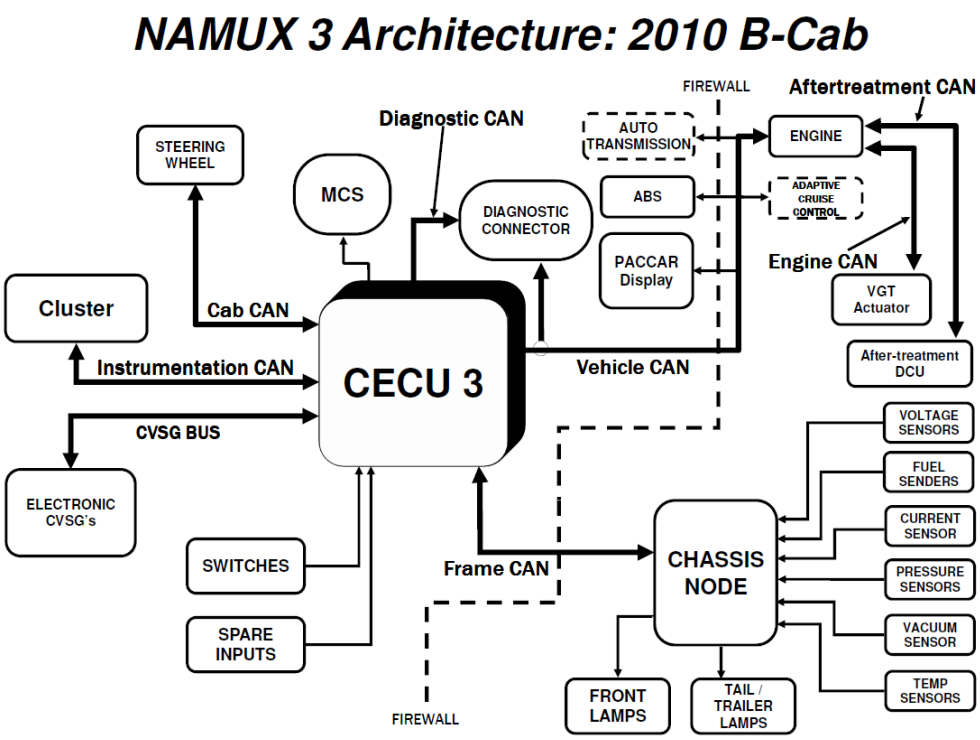
No: Proceed to step 3
Yes : Proceed to step4
</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 114D-c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key

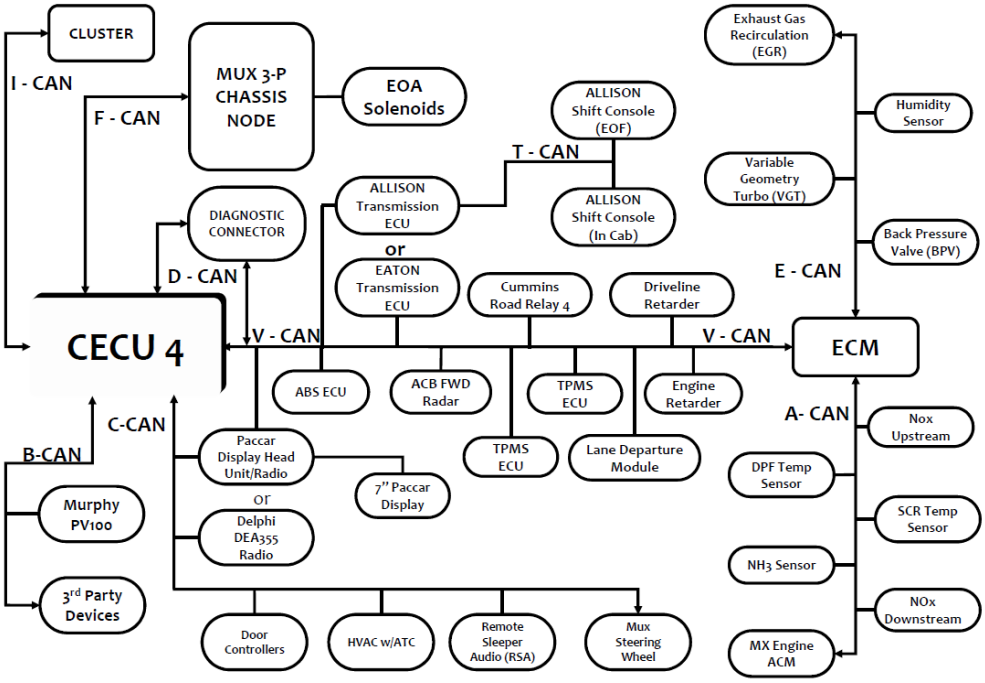
Use DAVIE to re-check for the presence of active faults:

Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault
</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 114D-d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Verification Drive Cycle</td>
<td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td>
</tr>
<tr>
<td></td>
<td>Back to Index</td>
</tr>
</table>

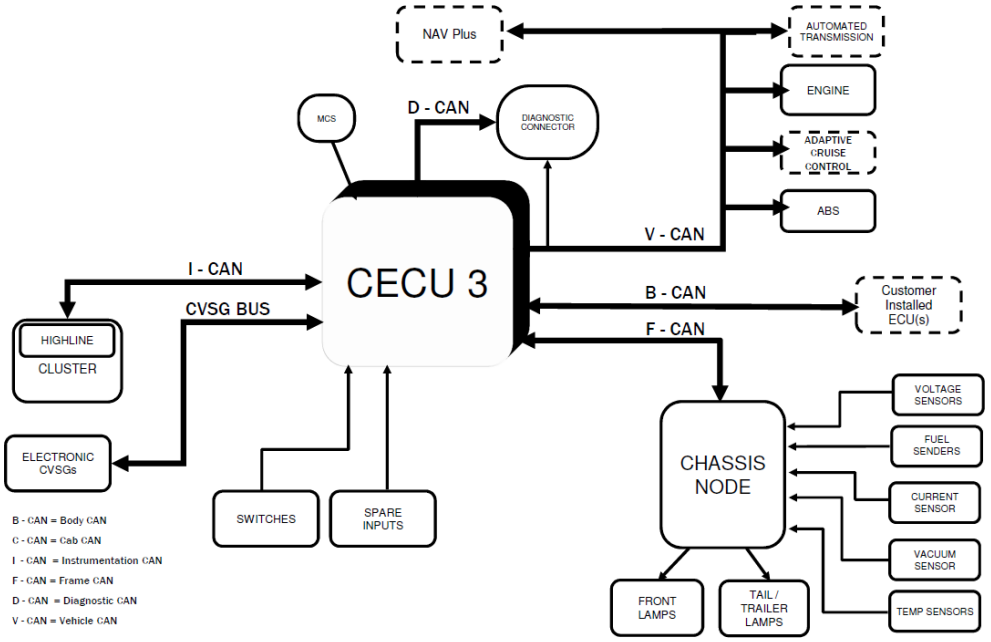
U1150

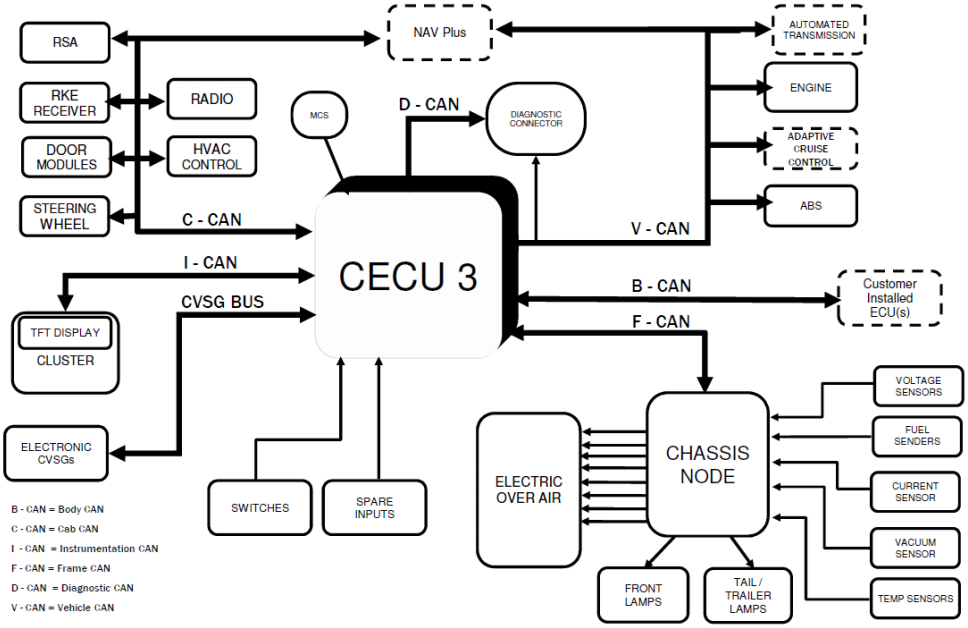
Code number	U1150
Fault code description	CAN communication - Message (EBC1) rate too high from brake system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Fault in brake system ECU
Additional information	No additional information available
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1150a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above?		

<table>
<tr>
<td></td>
<td>

No: Proceed to step 2.
Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
f this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1150b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system
Perform the checking data test of the specific component

Is test pass?

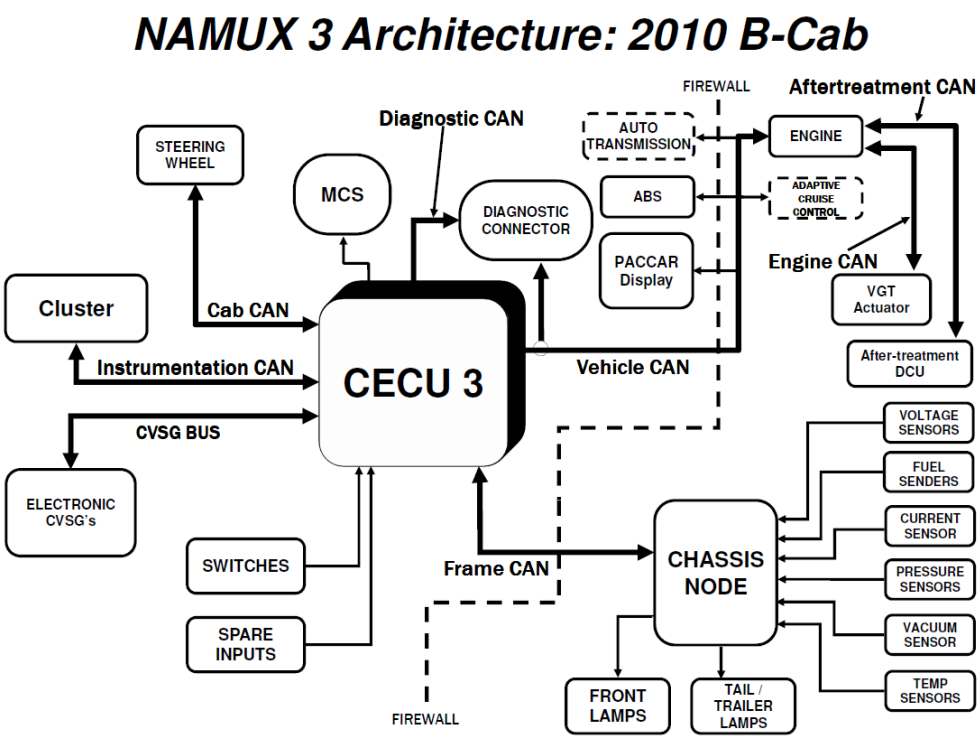
No: Proceed to step 3
Yes : Proceed to step4
</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1150c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

Repair or replace the component, also check for electrical connection and wiring harness .
Reconnect the connector
ON the ignition key

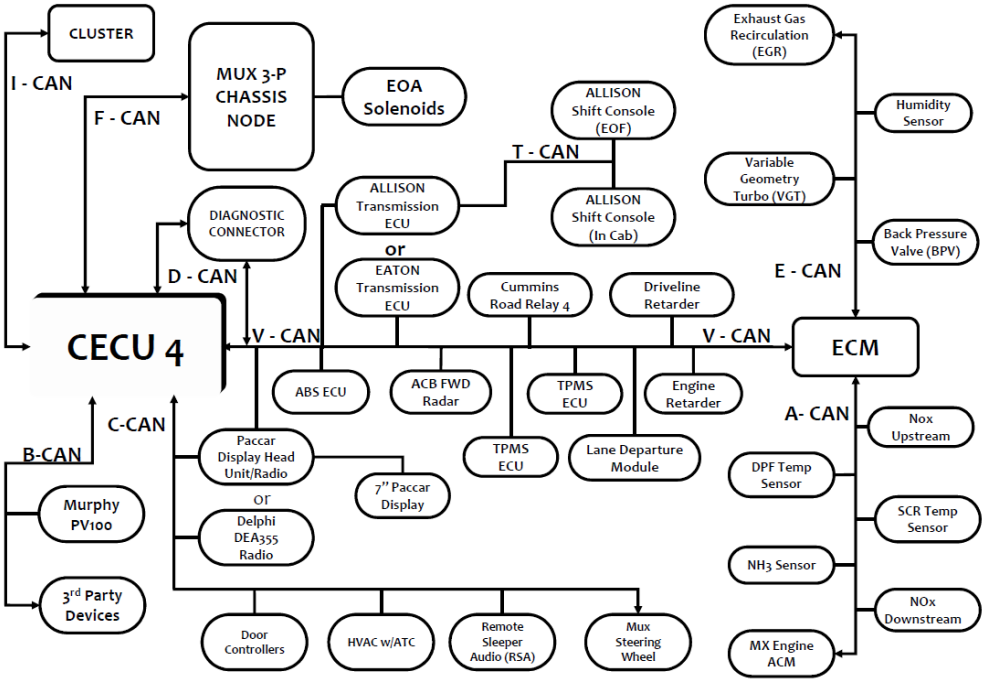
Use DAVIE to re-check for the presence of active faults:

Is DTC fault active: Proceed to step 4
Is DTC fault inactive : Issue resolved. Clear inactive fault
</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1150d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Verification Drive Cycle</td>
<td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td>
</tr>
<tr>
<td></td>
<td>Back to Index</td>
</tr>
</table>

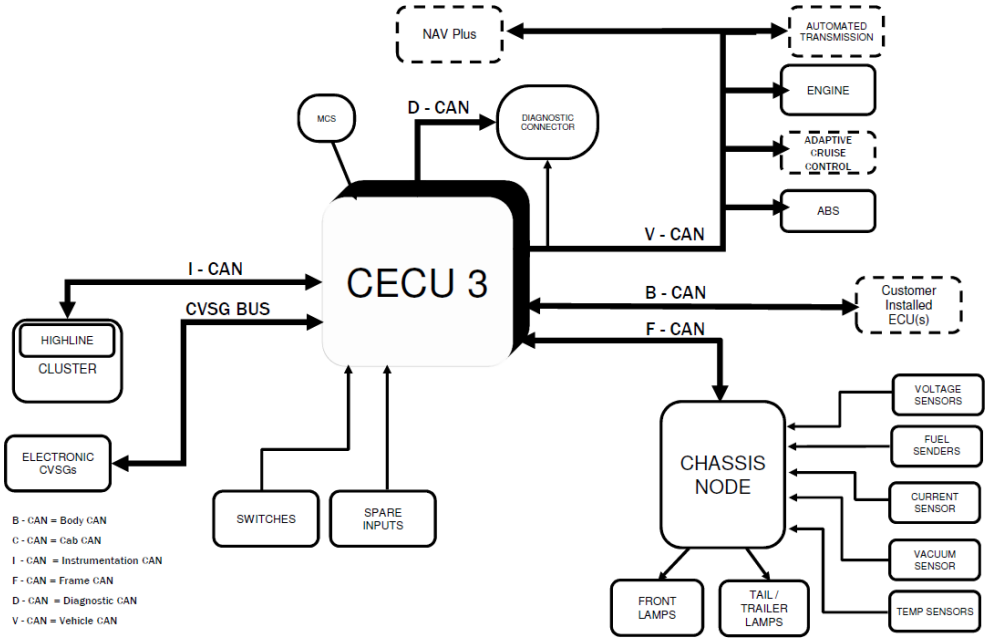
U1154

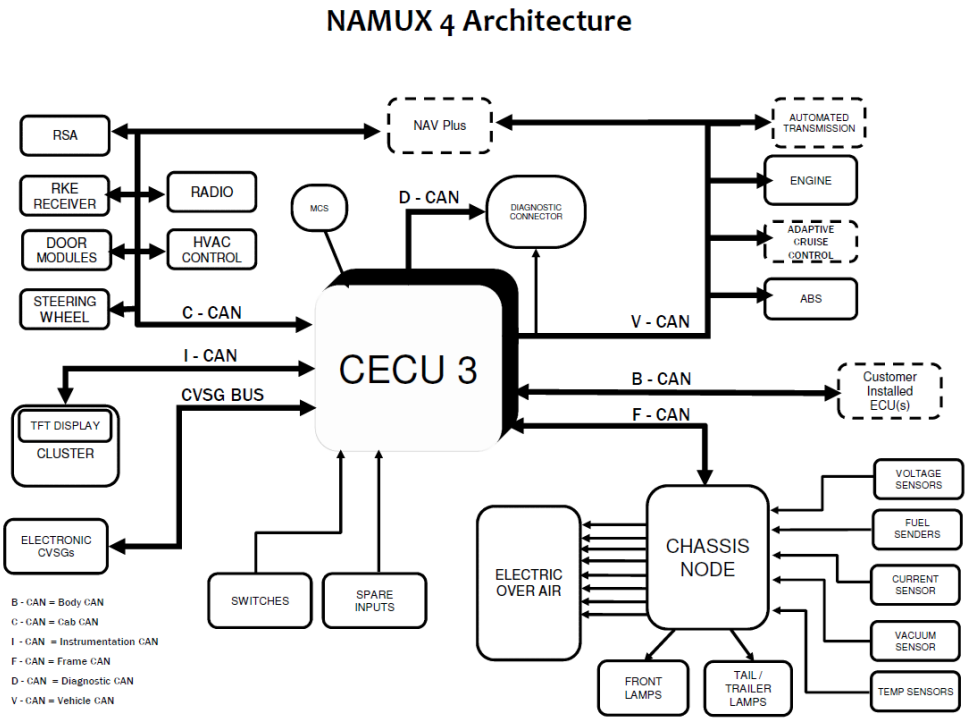
Code number	U1154
Fault code description	CAN communication - Message (B) rate too low from brake system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring.
Additional information	No additional information available
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1154a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.		

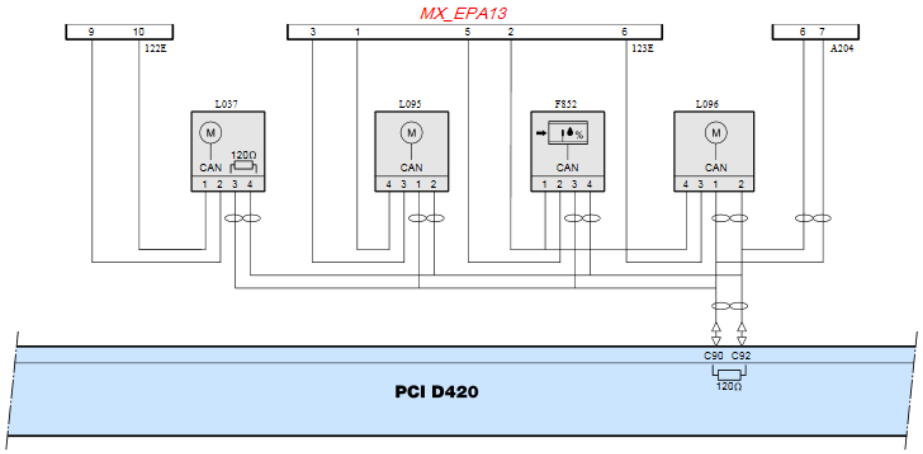
<table>
<tr><td></td><td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• f this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1154b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

<table>
<tr><td>Step 3</td><td>Step ID 1154c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness .
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive : Issue resolved. Clear inactive fault</td></tr>
</table>

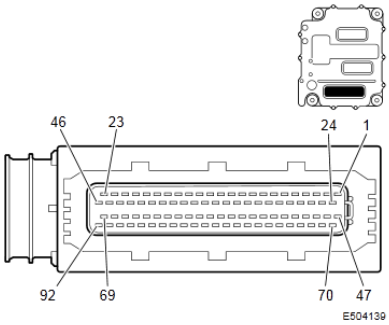
<table>
<tr><td>Step 4</td><td>Step ID 1154d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

U1159

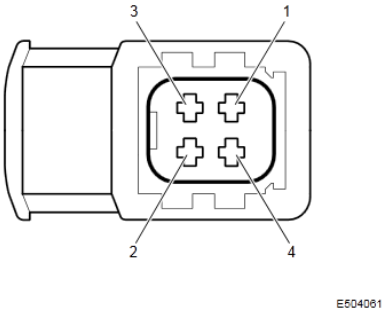
Code number	U1159
Fault code description	VTG turbo charger actuator - CAN communication error, message rate too low
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	The PCI ECU (D420) lost communication with the VTG turbocharger actuator (L037).
Reset condition of fault code	This DTC changes to inactive after the ignition is keyed off for at least 15 seconds, keyed on again, and the trouble code is no longer detected.
Electrical diagram(s)	**E-CAN Component (L037)**  D420 PCI ECU L037 VTG turbocharger actuator

D420	L037	Function
C90	3	E-CAN high
C92	4	E-CAN low
	1	Power supply after ignition
	2	Ground

E-CAN terminating resistance 108-132 Ω



Wiring harness connector D420.C front view



Wiring harness connector L037

Handle connectors and pins with care and use matching measuring probes.

Technical data

Component and wiring checks, VTG turbocharger actuator (L037)

Component check, VTG turbocharger actuator (L037)

Preparation

- Switch off the ignition.
- Disconnect connector L037.
- Measure on component L037.

Pin (+ probe)	Pin (- probe)	Value	Additional information
3	4	± 120 Ω	

Besides the termination resistor check, this type of component cannot be checked with a multimeter/oscilloscope. Perform the following to assess the component:

- Monitor/test the component with DAVIE.
- Perform the wiring check (see below).

Wiring check, VTG turbocharger actuator (L037)

Preparation

- Switch off the ignition.
- Disconnect connector L037.
- Measure on component connector L037.

Pin	Pin	Value	Additional information

	(+ probe)	**(- probe)**		
	1	2	Ubat	Switch on the ignition
	3	4	± 120 Ω	Switch off the ignition Disconnect the ground cable from the battery Disconnect the vehicle communication interface (VCI) of DAVIE

Possible causes

- Communication error between actuator and PCI ECU.
- No or incorrect VTG turbo charger actuator power supply.
- Faulty VTG turbocharger actuator.

Additional information

The VTG turbocharger is controlled by the VTG turbocharger actuator, a smart actuator that communicates with the PCI ECU via E-CAN.

Diagnostic Step-by-Step

The ignition should always be in the OFF position when connecting or disconnecting electrical components to reduce the likelihood of damage to the components.

- This troubleshooting procedure is based on the assumption that supply power and ground to the PCI are functioning properly.
- Disconnecting the PCI connectors during the troubleshooting process will result in multiple errors.
- Specific electrical component information and pin out locations are provided in this procedure as a reference only. Always refer to the technical data sections in Rapido for the most up-to-date changes.
- It is necessary to use DAVIE to clear all current DTCs from the PCI and EAS-3 ECUs, and then run the Quick Check to identify a change in fault status.
- This DTC can be set as a result of multiple failure modes. For proper fault isolation, complete all troubleshooting steps in the sequence provided.

Step 1 VTG Turbo Charger Actuator (L037) Checks

Step 1A Visual inspection, VTG turbo charger actuator (L037)

Action

1. Visually inspect the associated component connections and wiring for any of the following:
   - Damaged or loose connectors
   - Bent, broken, corroded or loose connector pins

- Moisture or dirt in the connections
- Damage to the wire harness or insulation
- The correct parts are not installed
- ECU connections are damaged or disconnected
- Batteries are not okay, contacts are not tight
- VTG turbo charger actuator broken or not installed correctly

Was there evidence of any of the above?

Yes	**No**
Correct any issues found. If the VTG turbo charger actuator is found to be damaged or broken, the actuator may need to be replaced. Contact the PACCAR Engine Support Center for further assistance. Refer to step 2A to perform the corresponding repair verification cycles and rechecks.	
If this DTC is still present, go to step 1B	**Go to step 1B**

Step 1B Electrical checks, supply voltage, VTG turbo charger actuator (L037)

Refer to the corresponding checking data for associated supply and signal voltages, resistance values, and related connector pin test points.

Action

1. Confirm the supply voltage level as outlined in the corresponding checking data, "wiring check, VTG turbocharger actuator (L037)."

Is the measured value within expected range?

Yes	**No**
	Inspect the 12 V battery voltage and power and ground wiring. Correct the battery or wiring, as needed. Refer to step 2A to perform the corresponding repair verification cycles and rechecks.
Go to step 1C	**If this DTC is still present, go to step 1C**

Step 1C Electrical checks, termination resistance, VTG turbo charger actuator (L037)	
 Refer to the corresponding checking data for associated supply and signal voltages, resistance values, and related connector pin test points.	
Action 1. With the VTG turbo charger unplugged, check the termination resistance as outlined in, "component check, VTG Turbocharger Actuator (L037)."	
Are measured values within expected range?	
Yes	**No**
	Correct any issues found, or contact the PACCAR Engine Support Call Center for further assistance in diagnosing and correcting this issue. Refer to step 2A to perform the corresponding repair verification cycles and rechecks.
Go to step 1D	**If this DTC is still present, go to step 1D**

Step 1D Electrical checks, component isolation

Action

Perform the following steps for each of the components listed below, one at a time, to isolate the possible cause of this DTC.

- Turbocharger actuator (L037)
- EGR valve module (L095)
- BPV actuator (L096)
- Humidity sensor (F852)

1. Switch off the ignition.
2. Disconnect the suspected component's connector.
3. Switch on the ignition.
4. Use DAVIE Diagnostics to view all current DTCs, to determine if disconnecting the suspected component has changed the status for U1159.

Repeat these steps for each of the suspected components until a change in U1159 status can be observed.	
Did the status for U1159 change when a component was disconnected?	
Yes	**No**
Investigate the suspected component, checking related wiring and connections, or component operation. Correct any issues found or replace the component if it is found to be damaged or broken. Refer to step 2A to perform the corresponding repair verification cycles and rechecks.	
If this DTC is still present, go to step 1E	**Go to step 1E**

Step 1E Electrical checks, resistance, E-CAN-H and E-CAN-L	
Action 1. Check the resistance between CAN-H and CAN-L at the as outlined in the corresponding checking data, "E-CAN PCI ECU (D420), circuit check, E-CAN and wiring."	
Are measured values within expected range?	
Yes	**No**
	Contact the PACCAR Engine Support Call Center for further assistance in diagnosing and correcting this issue. Refer to step 2A to perform the corresponding repair verification cycles and rechecks.
Go to step 1F	**If this DTC is still present, go to step 1F**

Step 1F Visual inspection, turbo charger actuator (L037)
Action 1. Visually inspect the turbocharger fuse to see if it is blown.
Is the turbocharger fuse blown?

Yes	No
Replace the turbocharger fuse. Visually inspect the turbocharger actuator (L037) for evidence of coolant or moisture. In addition to a blown fuse, if the turbocharger actuator (L037) shows evidence of coolant or moisture, the entire turbocharger (not just the turbocharger actuator) may need to be replaced. Contact the PACCAR Engine Support Call Center for confirmation before replacing the turbocharger.	
If all steps have been completed and this DTC is still present, contact the PACCAR Engine Support Center for further assistance.	**If all steps have been completed and this DTC is still present, contact the PACCAR Engine Support Center for further assistance.**

Step 2 Repair Verification

Step 2A Repair verification cycles

Perform these repair verification cycles following any corrective actions taken, to enable related OBD monitors to reach a readiness state associated with the DTC or system being investigated.

Before beginning these repair verification cycles, use the DAVIE Diagnostics, Quick Check function to clear all current DTCs from the PCI and EAS-3 ECUs.

Action

1. Steady State

   This cycle is best performed on a level grade road (least amount of incline possible) and under load using a trailer. If a loaded trailer is unavailable, produce engine load by turning the A/C and fan to ON.

   With the System Initiation cycle complete, proceed to a road with a minimum speed limit of 50 mph, then get to the highest gear possible with the engine speed between 1100-1500 rpm, and set the cruise control. Run this cycle for roughly 3 to 5 miles or in three separate 1-mile increments if a steady 3 to 5 miles is unachievable.

Were the identified repair verification cycles able to be completed?

Yes	No

	Investigate and correct any issues preventing these repair verification cycles from being completed, then re-run. For additional assistance, contact the PACCAR Engine Support Center.
Go to step 2B	**Go to step 2B**

Step 2B DAVIE Diagnostics, Quick Check, OBD Readiness Monitors	
Action Use DAVIE Diagnostics to perform a Quick Check for current DTCs to determine whether the actions taken have cleared this DTC. 1. Confirm that the corresponding OBD Monitor Readiness Status value is displayed as "Ready." A status of Ready indicates that the corresponding OBD monitor has run successfully and the problem has been resolved—no further action. If the displayed status is "Not ready," continue to action step 2. 2. View the DTC overview display, and confirm that U1159 has been cleared.	
Is the related OBD Monitor Readiness Status set to "Ready." Or, has U1159 been cleared?	
Yes	**No**
Problem resolved. No further actions.	Continue with the next step in this troubleshooting procedure. If all steps have been completed and this DTC is still present: • continue to operate the truck to extend the run time, allowing the corresponding OBD monitor sufficient time to complete • or, return to step 2A and perform this repair verification again. If this issue is still present after extending or re-running the repair verification, contact the PACCAR Engine Support Center for further assistance.

	 Contacting the PACCAR Engine Support Center For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the PACCAR Engine Support Call Center.
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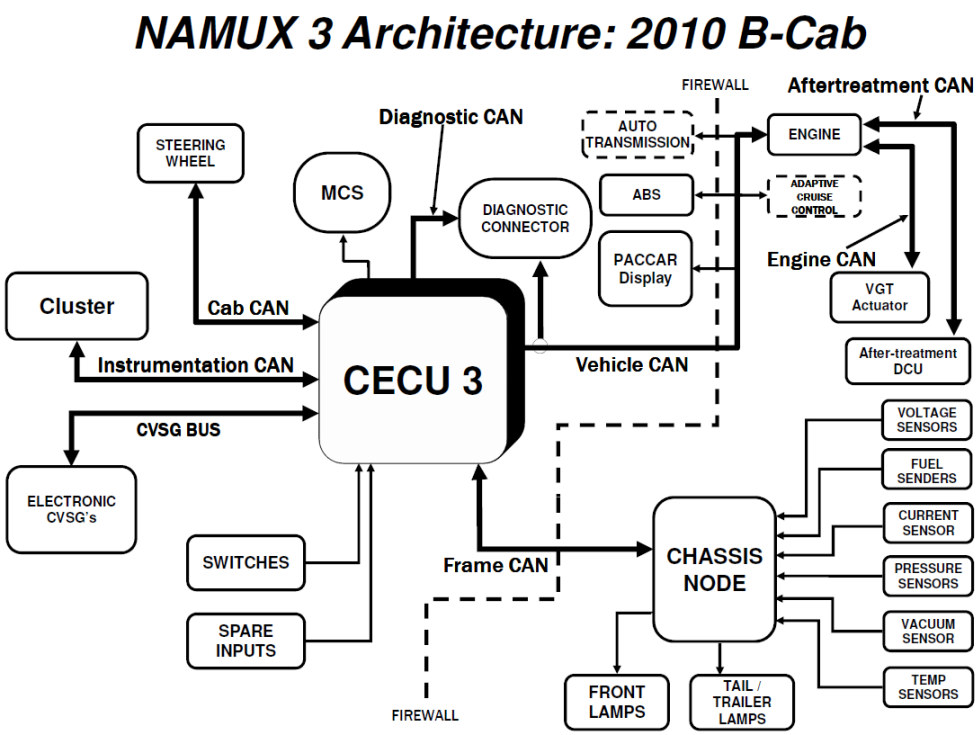
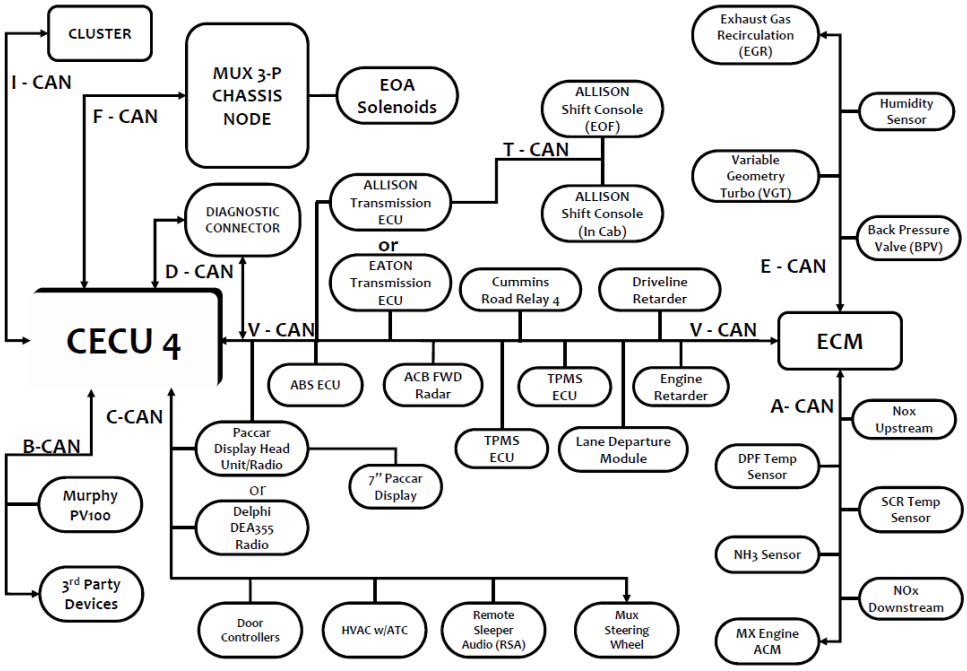
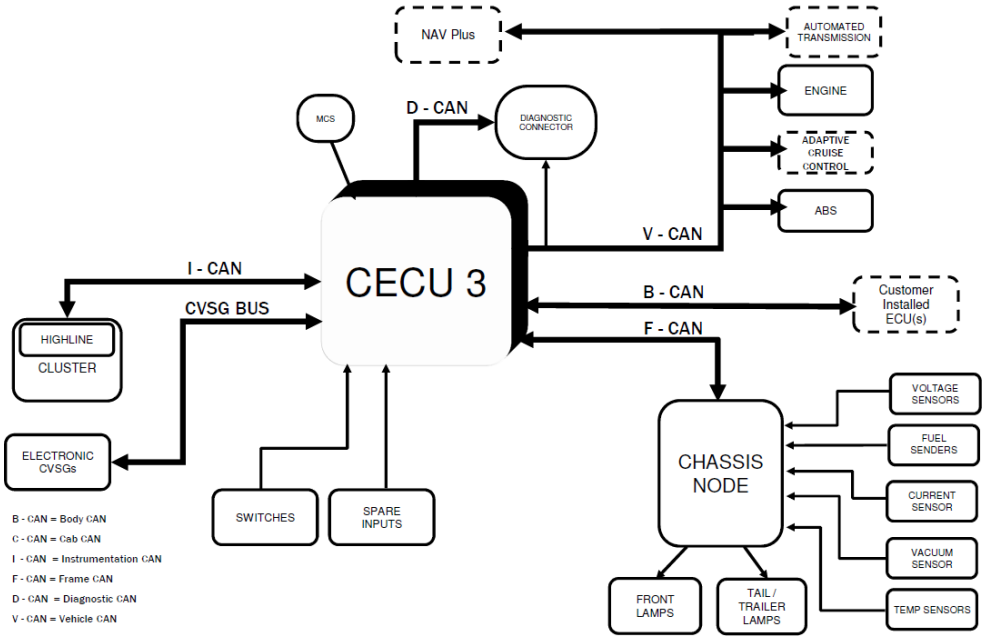
U1160

Code number	U1160
Fault code description	VTG turbo charger actuator position - Data erratic, intermittent or incorrect
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	The PCI ECU (D420) receives a CAN message from the VTG turbo charger actuator (L037) that contains an out of range value for the actuator position.
Reset condition of fault code	This DTC changes to inactive after the ignition is keyed off for at least 15 seconds, keyed on again, and the fault is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



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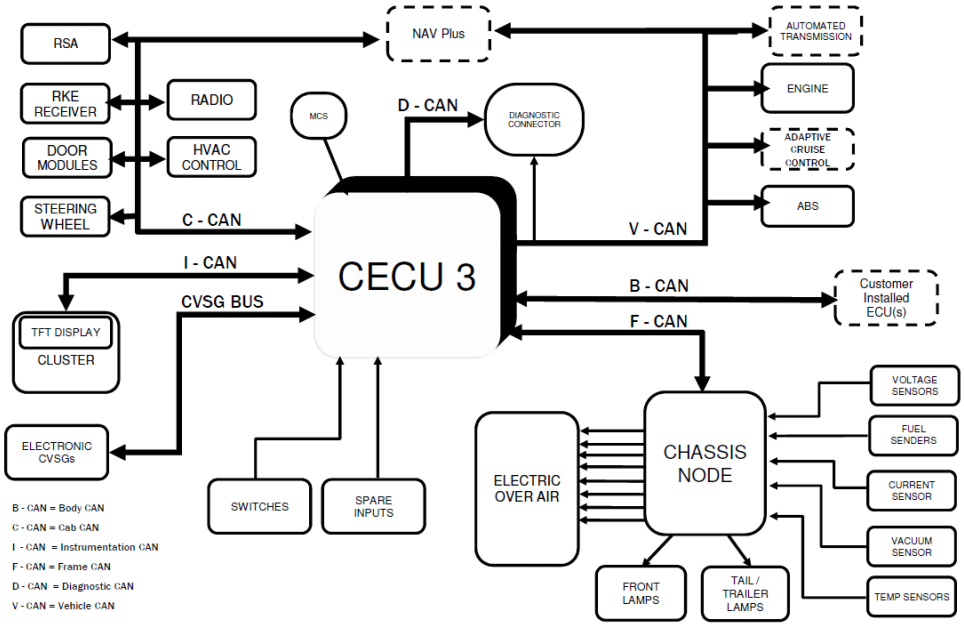
NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>• E-CAN communication
• Faulty VTG turbocharger actuator</td></tr>
<tr><td>Additional information</td><td>• The VTG turbocharger is controlled by the VTG turbocharger actuator, a smart actuator that communicates with the PCI ECU via E-CAN. The actuator ECU is controlled by the PCI ECU but has its own diagnostics.
• The actuator provides feedback to the PCI ECU about the nozzle ring position.</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1160a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins)</td></tr>
</table>

</td></tr>
</table>

damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.
Was there evidence of any of the above?

- No: Proceed to step 2.
- Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

- If this related fault is no longer active, then this issue has been resolved.
- If this related fault is still active, Proceed to step 2

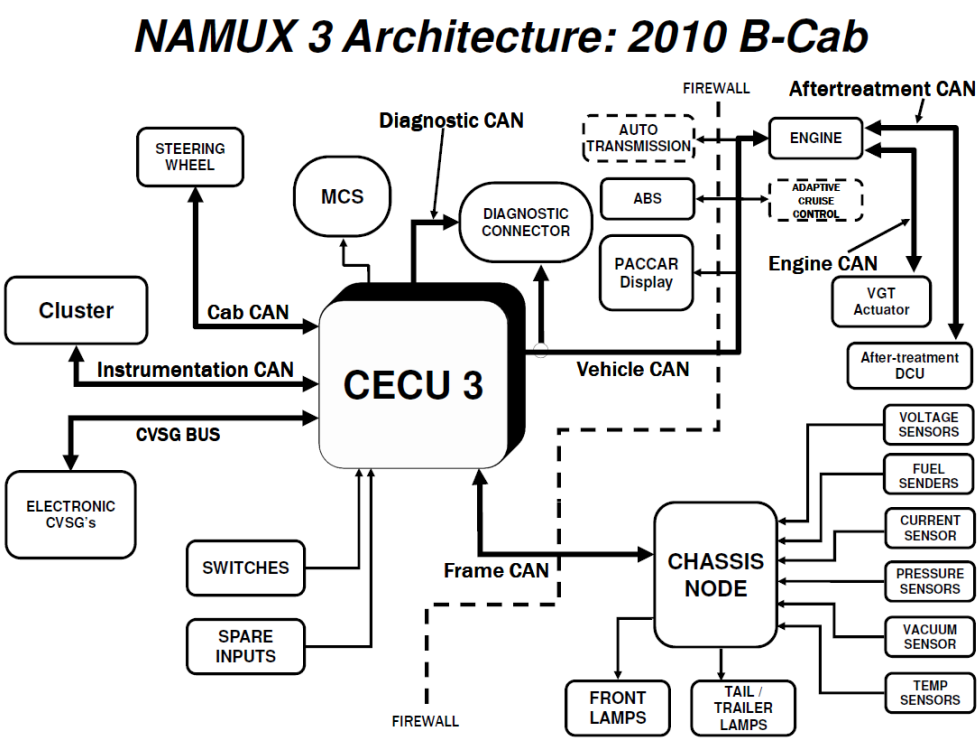
Step 2	Step ID 1160b	SRT
Data check • Lookup the technical data of the specific system • Perform the checking data test of the specific component Is test pass? • No: Proceed to step 3 • Yes : Proceed to step4		

Step 3	Step ID 1160c	SRT
Repair or replace component • Repair or replace the component, also check for electrical connection and wiring harness. • Reconnect the connector • ON the ignition key Use DAVIE to re-check for the presence of active faults: • Is DTC fault active: Proceed to step 4 • Is DTC fault inactive: Issue resolved. Clear inactive fault.		

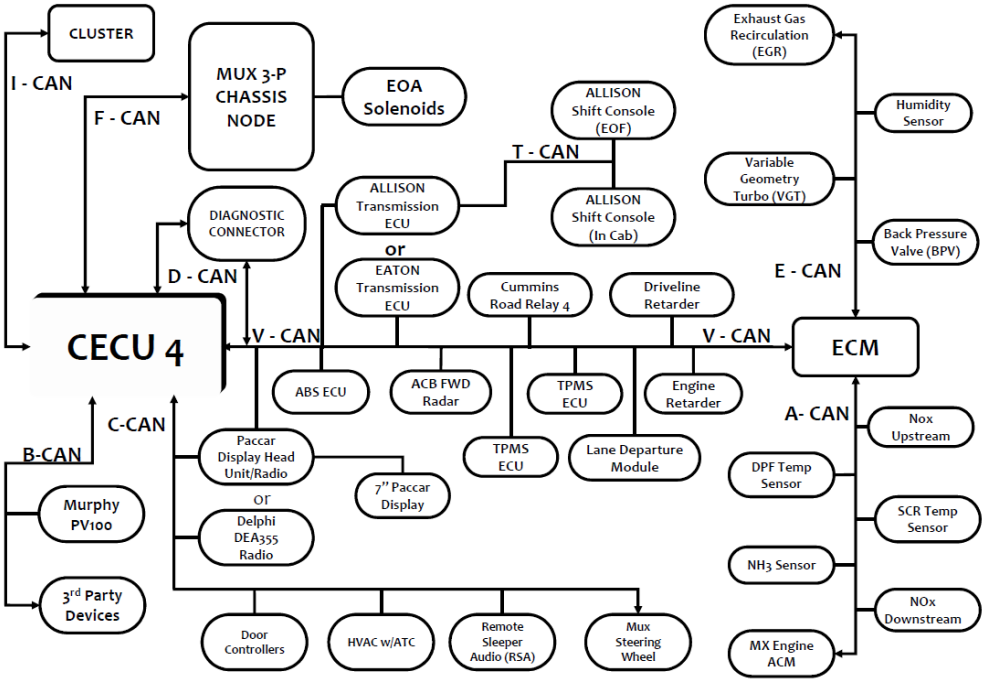
Step 4	Step ID 1160d	SRT
For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.		

Verification Drive Cycle	To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.
	Back to Index

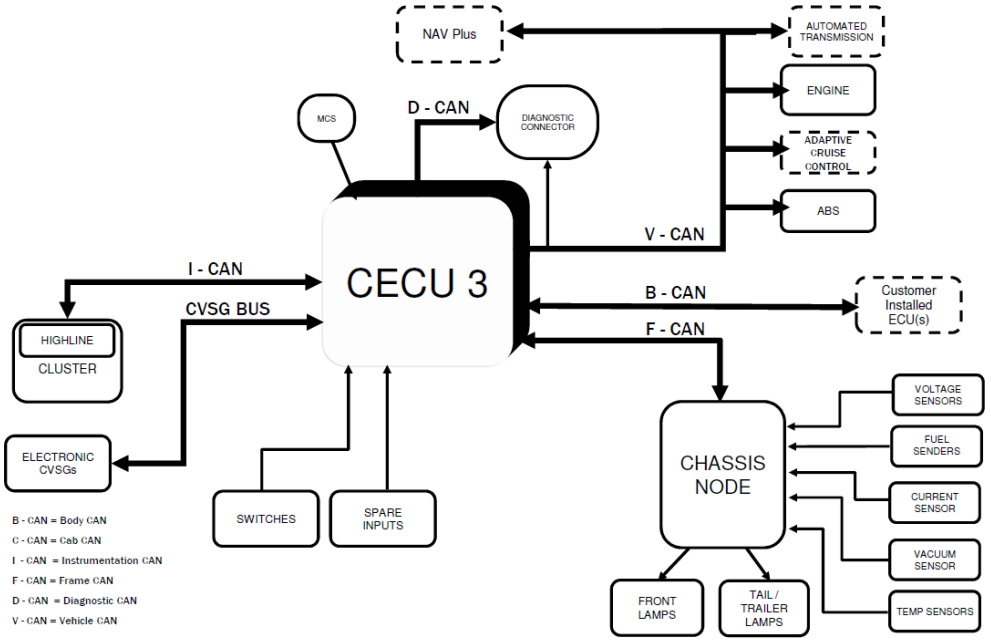
U1161

Code number	U1161
Fault code description	CAN communication - Message (A1SCRAI2) rate too low from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



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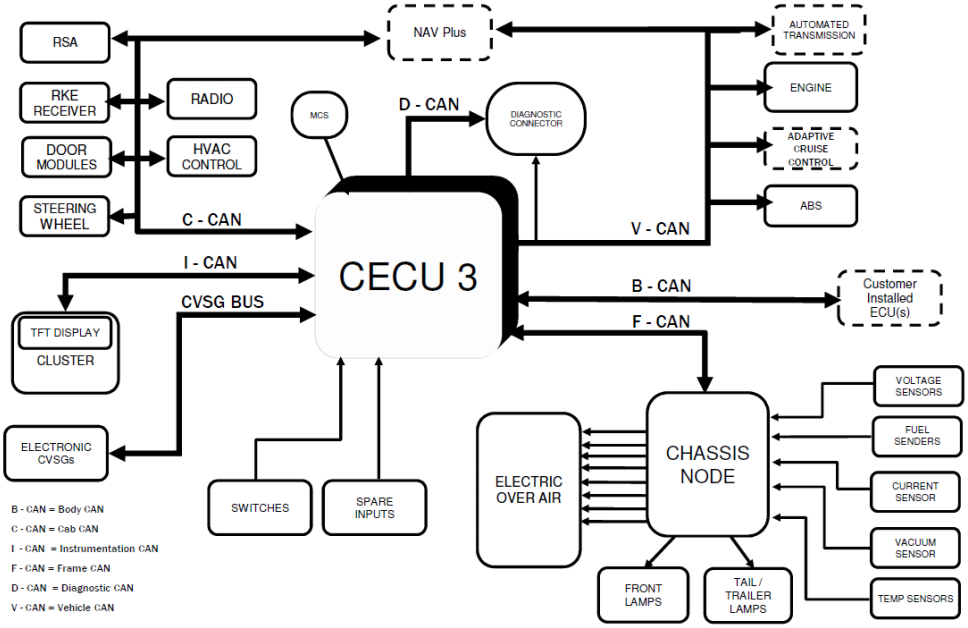
NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring.

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

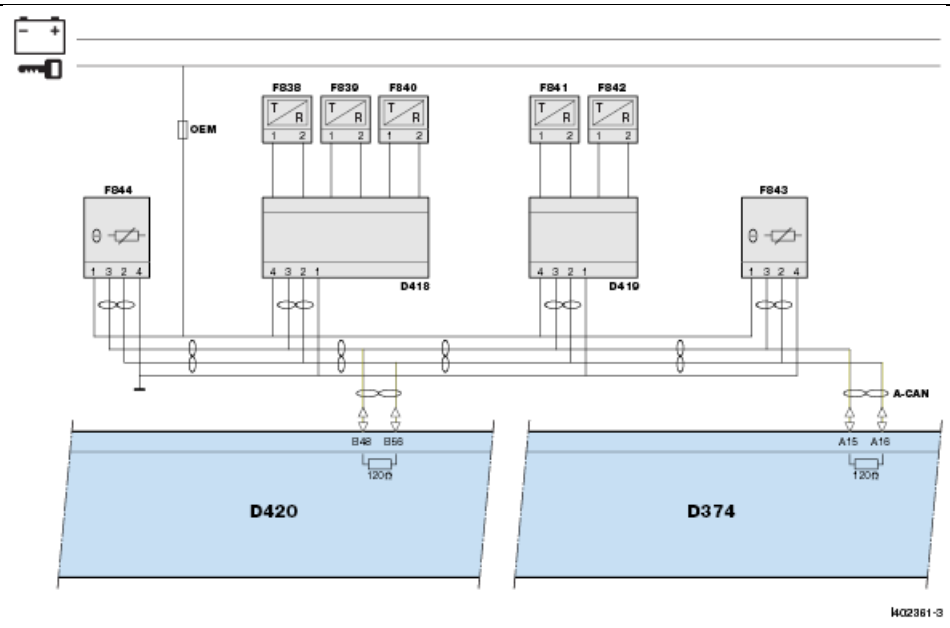
- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pin out locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1161a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above?		

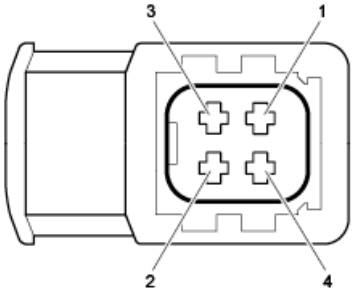
</td></tr>
</table>

<table>
<tr><td></td><td>
No: Proceed to step 2.
Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2
<table>
<tr><td>Step 2</td><td>Step ID 1161b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
Lookup the technical data of the specific system
Perform the checking data test of the specific component
Is test pass?
No: Proceed to step 3
Yes : Proceed to step4</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1161c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key
Use DAVIE to re-check for the presence of active faults:
Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault.</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1161d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To verify the repair:
With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics
With the brakes set, start the engine and allow it to run at idle for 2 minutes</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

U1163

Code number	U1163
Fault code description	CAN communication - Message (A1SCRAI2) out of range - SCR intermediate NH3 from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Freeze frame type – Crankcase
Description of component(s)	This code relates to a communication issue dealing with the signal for the NH3 sensor to the ACM to the engine PCI.
Location of component(s)	This code relates to a communication issue and not a specific component.
Diagnostic condition	This diagnostic consists of two parts: • This diagnostic runs continuously when the ignition is initially keyed on • This diagnostic runs when the engine is running.
Set condition of fault code	The aftertreatment 1 SCR ammonia information 2 reception message is received every 50 ms. If more than 50 messages are received with an NH3 value above 6225.5 ppm, the fault sets.
Reset condition of fault code	THE DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	 D420 PCI ECU D374 EAS-3 ECU F869 NH3 sensor

D420	F823	Function
B14	3	A-CAN High
B15	2	A-CAN Low
	1	Power supply
	4	Ground



Wiring harness connector F869

Handle connectors and pins with care and use matching measuring probes.

Technical data

Component and circuit checks, NH3 sensor (F869)

Circuit check, ECU & wiring

Conditions

- Connector removed from NH3 sensor (F869)
- Ignition switch to ON
- Measurements must be made on the wiring harness connector F869

Pin (+ probe)	Pin (- probe)	Value	Additional information
1	4	Ubat	
4	Battery negative pole	>0.5V	Switch on all consumers

Circuit check, A-CAN

Conditions

- Ignition switch to OFF
- Connector removed from NH3 sensor (F869)
- Measurements must be made on the wiring harness connector F823

Pin (+ probe)	Pin (- probe)	Value	Additional information
2	3	± 60 Ω	

Possible causes

- Breakdown in communication of the CAN network
- An open circuit or a short circuit to ground for the NH3 sensor (F869)

Additional information

This is a low level CAN fault that is checking whether the message from the ACM is within a specified range.

Diagnostic Step-by-Step

The ignition should always be in the OFF position when connecting or disconnecting electrical components to reduce the likelihood of damage to the components.

- This troubleshooting procedure is based on the assumption that supply power and ground to the PMCI are functioning properly.
- Disconnecting the PMCI connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pin out locations, always refer to the technical data in Rapido.
- It is necessary to exit the 'Active errors' screen in DAVIE and run the diagnostic test again to identify a change in errors.
- This DTC can be set as a result of multiple failure modes. For proper fault isolation, complete all troubleshooting steps in the sequence provided.

Step 1. Investigate Related Trouble Codes

Before troubleshooting this code, take notice of any other current trouble codes. One or multiple other codes could have been the cause for this code.

Step U1163_1.A	Investigate related trouble codes	SRT:
Are these or any other related trouble codes present?		

P3950; P3951; P3952; P3953; P3954; P3955; P3956; P3961; P3962; P3963; P3964; P3965; P3966; P3967; P3968; P3969: P3970

Yes Refer to the troubleshooting information for these codes before continuing with this procedure.
No Step 2.A

Step 2. NH3 Sensor Checks

Step U1163_2.A	Visual Inspection: NH3 Sensor (F869)	SRT:

Visually inspect the associated component connections and wiring for any of the following:

- Damaged or loose connectors
- Bent, broken, corroded or loose connector pins
- Moisture or dirt in the connections
- Missing or damaged connector seals
- Damage to the wire harness or insulation
- Connector locking tabs damaged or not functioning
- ECU connections are damaged or disconnected
- Battery voltage low, loose contacts
- NH3 sensor is broken or not installed correctly
- The correct parts are not installed

Was there evidence of any of the above?

Yes Clean or and repair any issues found.
If the NH3 sensor (F869) is found to be damaged or broken, replace it.
Refer to Step 3.A to perform the corresponding repair verification cycles.
Use DAVIE Diagnostics to perform a Quick Check for current trouble codes.
If this code is still active, proceed to Step 2.B
No Step 2.B

Step U1163_2.B	Electrical Checks: NH3 sensor (F869)	SRT:

Refer to the corresponding Checking Data in Engine Service – Rapido for associated supply and signal voltages, resistance values, and related connector pin test points.

2.B.1 Supply and signal voltage

Perform circuit check, ECU & wiring measurements across the corresponding pins of the NH3 sensor (F869) wiring harness connector.

Are measured values within expected range?

Yes Step 2.B.2
No Correct any issues found, or replace the sensor if measured values indicate a

sensor error.
Refer to Step 3.A to perform the corresponding repair verification cycles.
Use DAVIE Diagnostics to perform a Quick Check for current trouble codes.
If this code is still active, proceed to Step 2.B.2

2.B.2 Resistance checks

Perform circuit check, ECU & wiring measurements across the corresponding pins of the NH3 sensor (F869) wiring harness connector.

Are measured values within expected range?

Yes Step 4.A
No Correct any issues found, or replace the sensor if measured values indicate a sensor error.
Refer to Step 3.A to perform the corresponding repair verification cycles.
Use DAVIE Diagnostics to perform a Quick Check for current trouble codes.
If this code is still active, proceed to Step 4.A

Step 3. Repair Verification Cycles

Perform these repair verification cycles following any corrective actions taken, to confirm that this trouble code is no longer active.

Step U1163_3.A	Repair Verification Cycle: Steady State	SRT:

This cycle is best performed on a level grade road (least amount of incline possible) and under load using a trailer. If a loaded trailer is unavailable, produce engine load by turning the A/C and fan to ON.

With the System Initiation cycle complete, proceed to a road with a minimum speed limit of 50 mph, then get to the highest gear possible with the engine speed between 1100-1500 rpm, and set the cruise control. Run this cycle for roughly 3 to 5 miles or in three separate 1-mile increments if a steady 3 to 5 miles is unachievable.

Step U1163_3.B	Repair Verification Cycle: DEF Doser & SCR	SRT:

Perform the same driving requirements as described for the Steady State cycle. Using DAVIE, select the following Monitor values to record:

- Exhaust Temperature Before SCR
- Exhaust Temperature After SCR
- Pump Module

Once the SCR temperatures have reached a minimum of 536°F (280°C), continue the remainder of this cycle with the high idle. The monitored Pump Module value will indicate when dosing starts. Allow dosing to occur for a minimum of 15 minutes. Check the recorded values after the driving has been completed to verify

temperatures and dosing.

Step 3. Contact PACCAR Engine Support Center

Step U1163_4.A	Contact PACCAR Engine Support Center	SRT:
For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the PACCAR Engine Support Call Center at 1-800-477-0251.		

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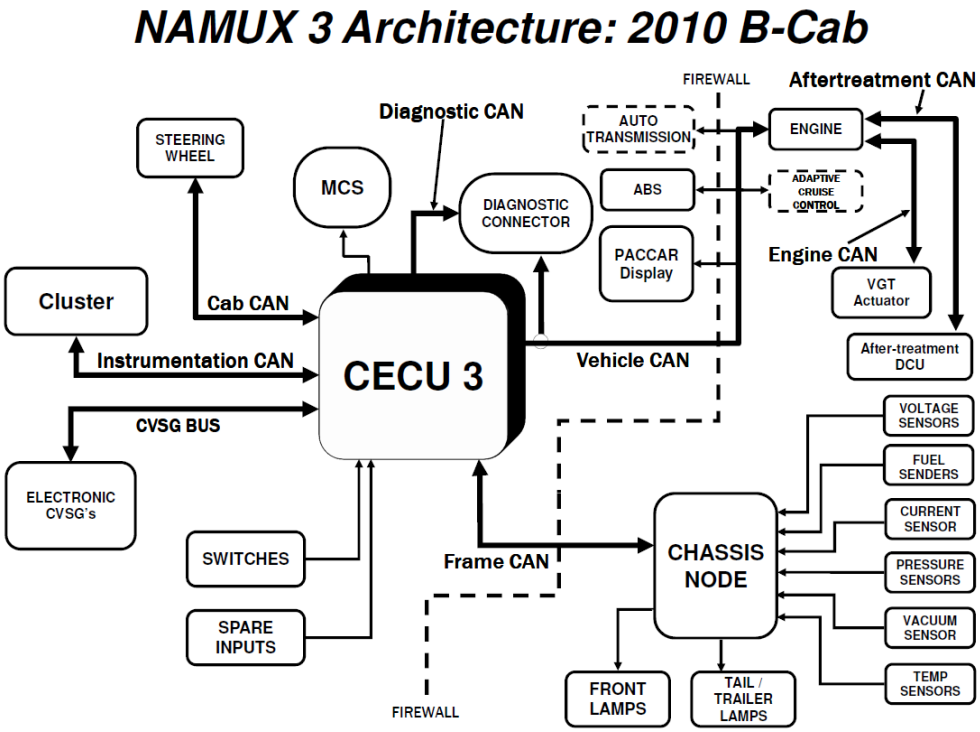
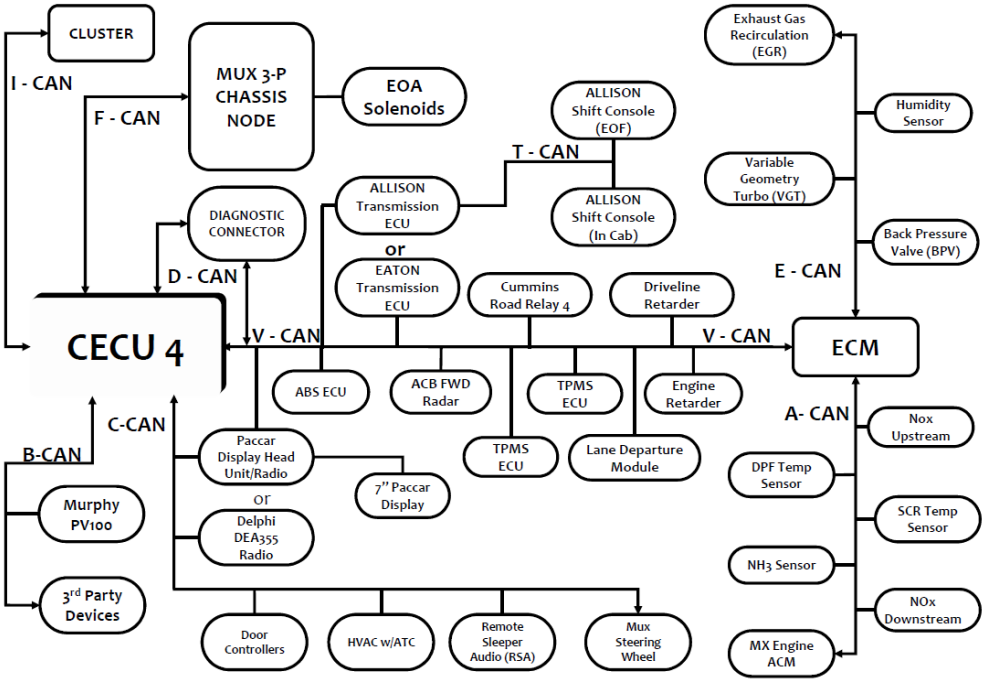
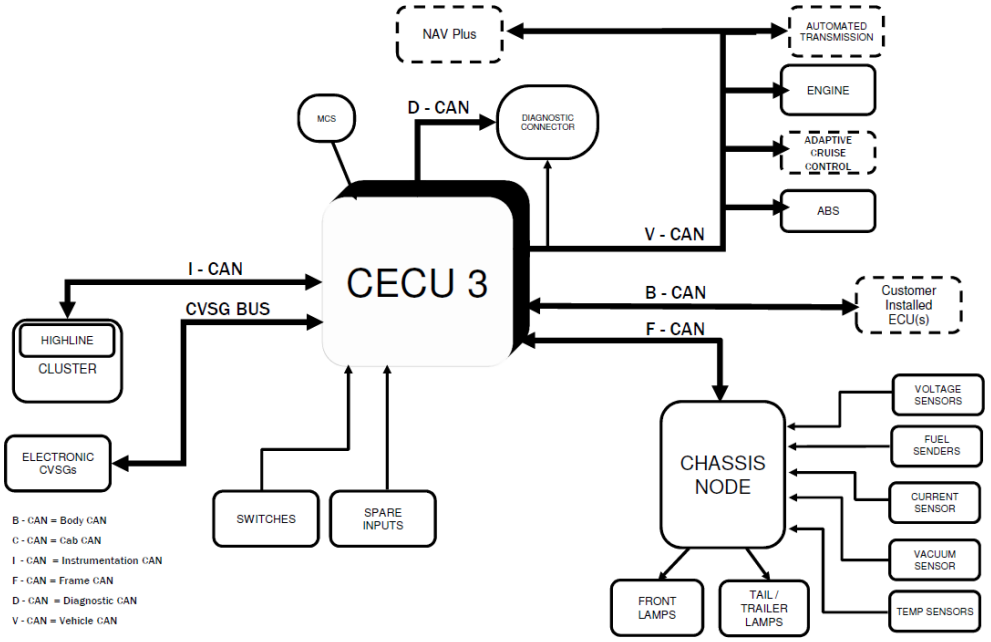
U1164

Code number	U1164
Fault code description	CAN communication - Message (A1SCRAI2) out of range - SCR intermediate NH3 reading stable from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680

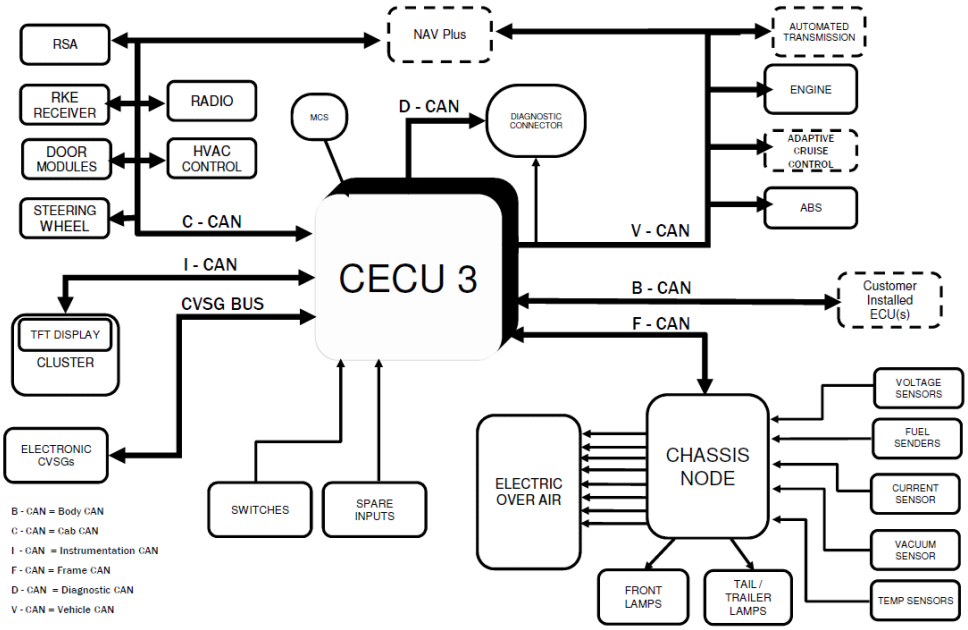


NAMUX 3 Architecture



<table>
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring.

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pin out locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1164a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above?		

</td></tr>
</table>

<table>
<tr><td></td><td>

No: Proceed to step 2.
Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1164b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system
Perform the checking data test of the specific component

Is test pass?

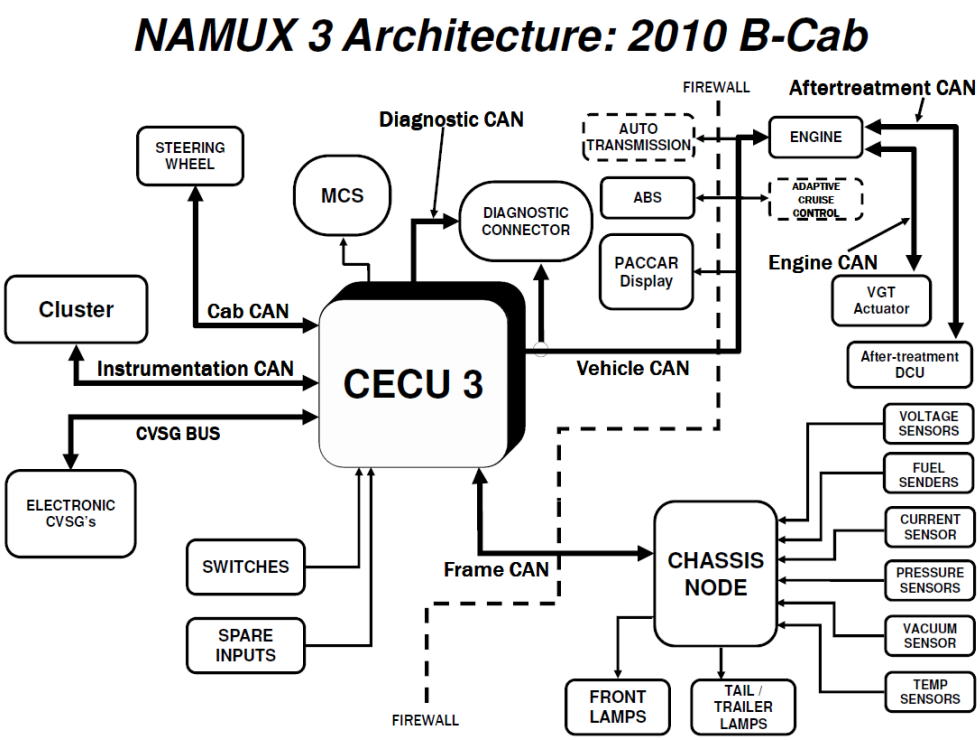
No: Proceed to step 3
Yes : Proceed to step4
</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1164c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key

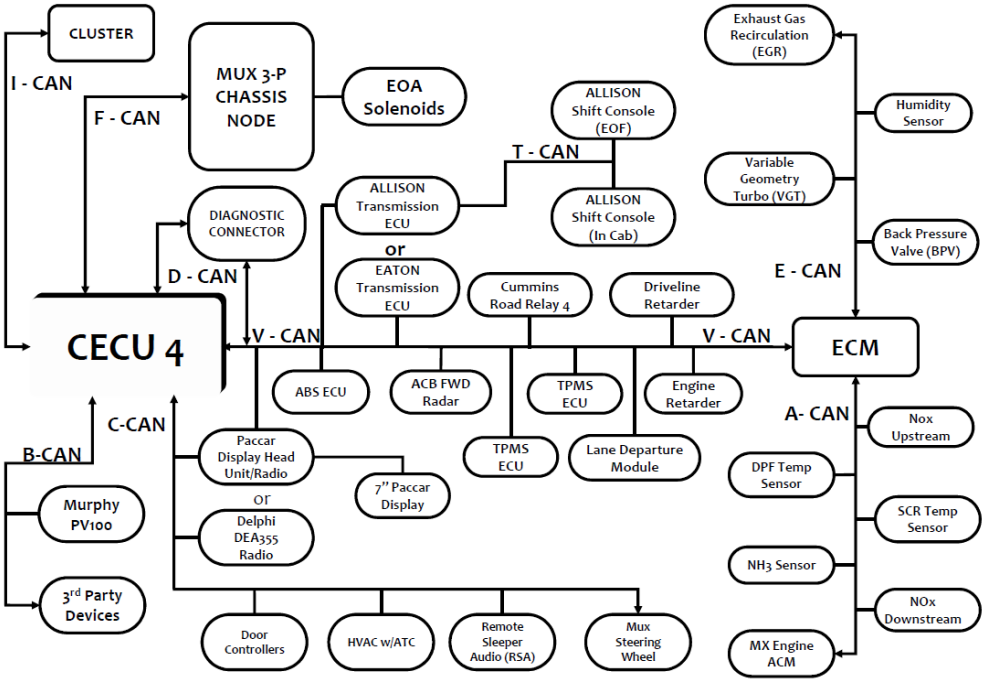
Use DAVIE to re-check for the presence of active faults:

Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault.
</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1164d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To verify the repair:
With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics
With the brakes set, start the engine and allow it to run at idle for 2 minutes</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

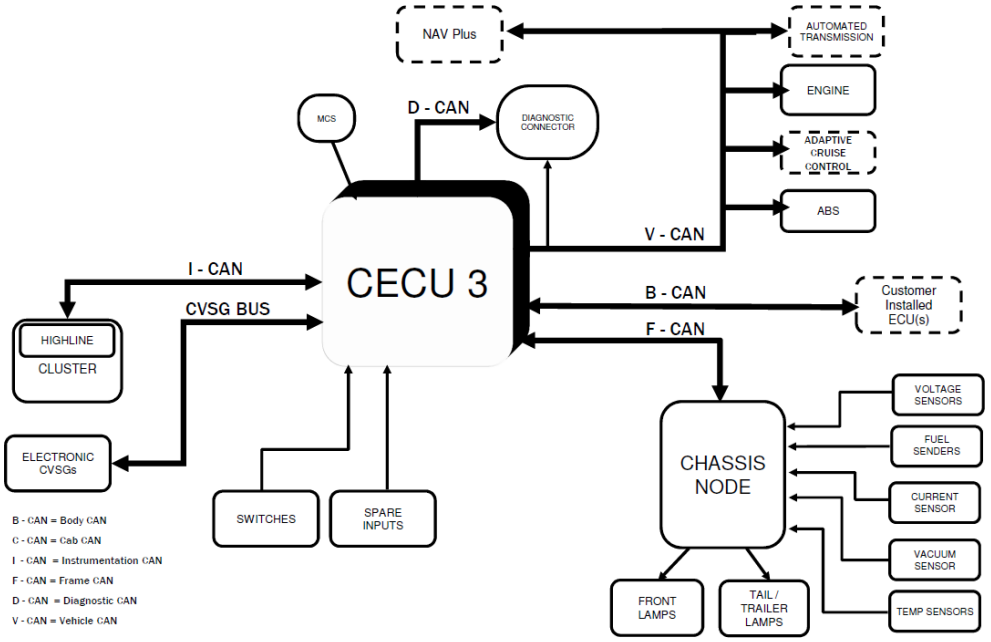
U1165

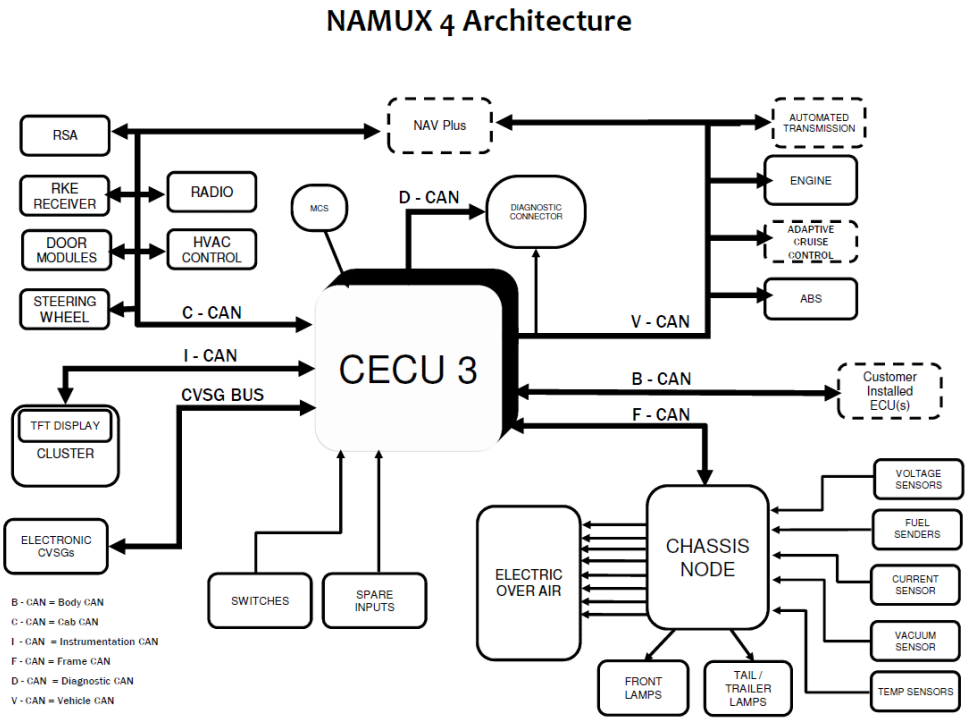
Code number	U1165
Fault code description	CAN communication - Message (AT1S) rate too low from emission system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type - Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This code relates to a communication issue and not to a specific component.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring
Additional information	No additional information available
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1165a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above?		

<table>
<tr><td></td><td>

No: Proceed to step 2.
Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1165b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system
Perform the checking data test of the specific component

Is test pass?

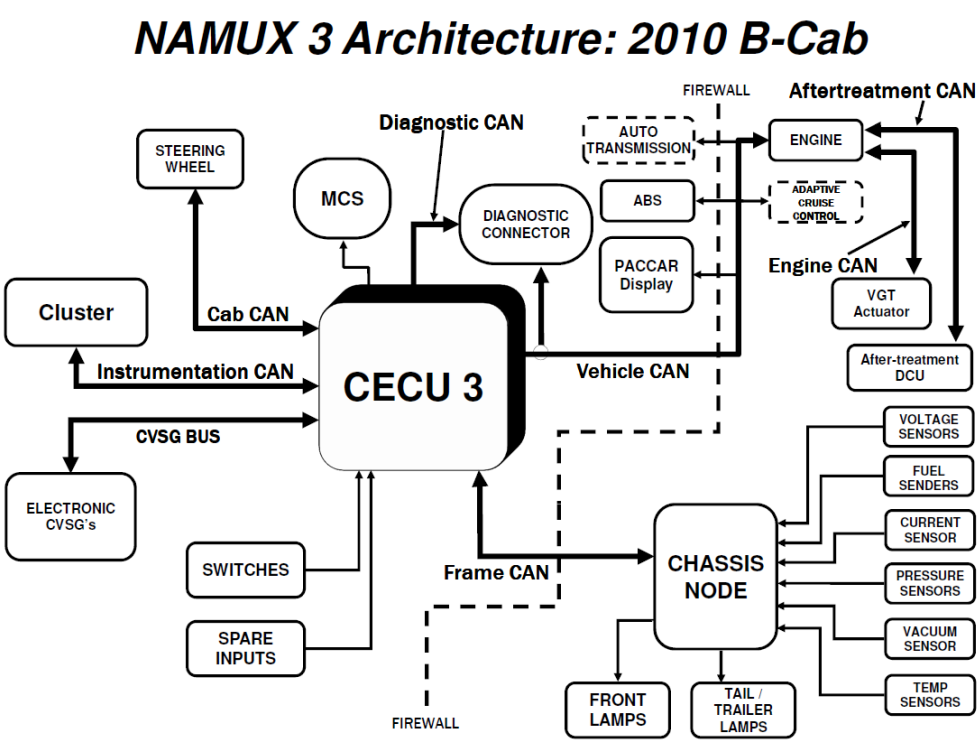
No: Proceed to step 3
Yes : Proceed to step4
</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1165c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key

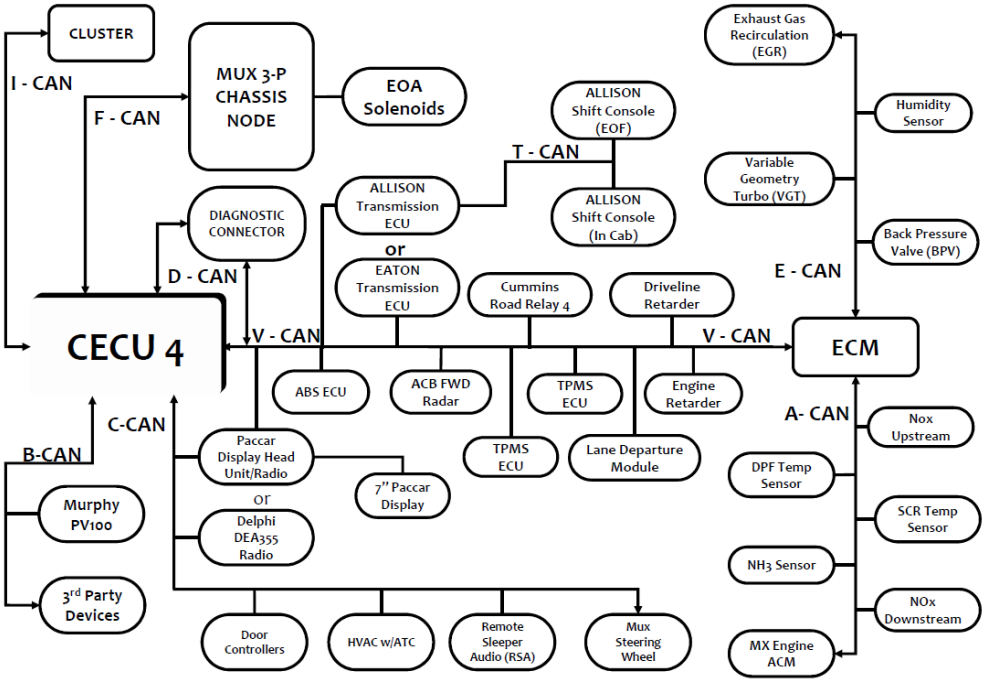
Use DAVIE to re-check for the presence of active faults:

Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault
</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1165d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

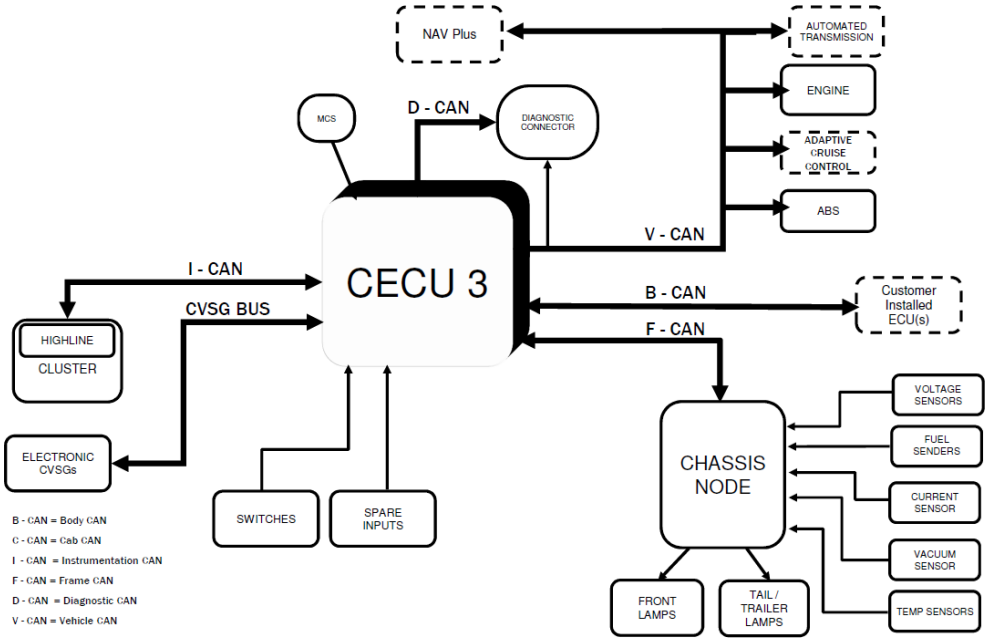
U1167

Code number	U1167
Fault code description	CAN communication - Message (AT1S) out of range - Soot load percent from emission system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type - Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This code relates to a communication issue and not to a specific component.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680

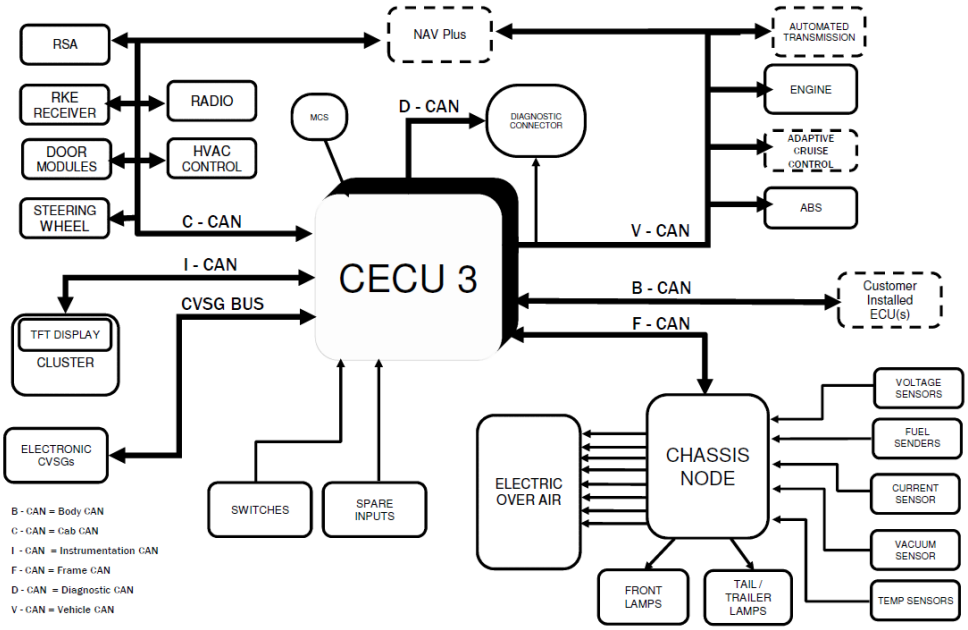


NAMUX 3 Architecture



<table>
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1167a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.
Was there evidence of any of the above?</td></tr>
</table>

</td></tr>
</table>

<table>
<tr><td></td><td>

No: Proceed to step 2.
Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1167b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system
Perform the checking data test of the specific component

Is test pass?

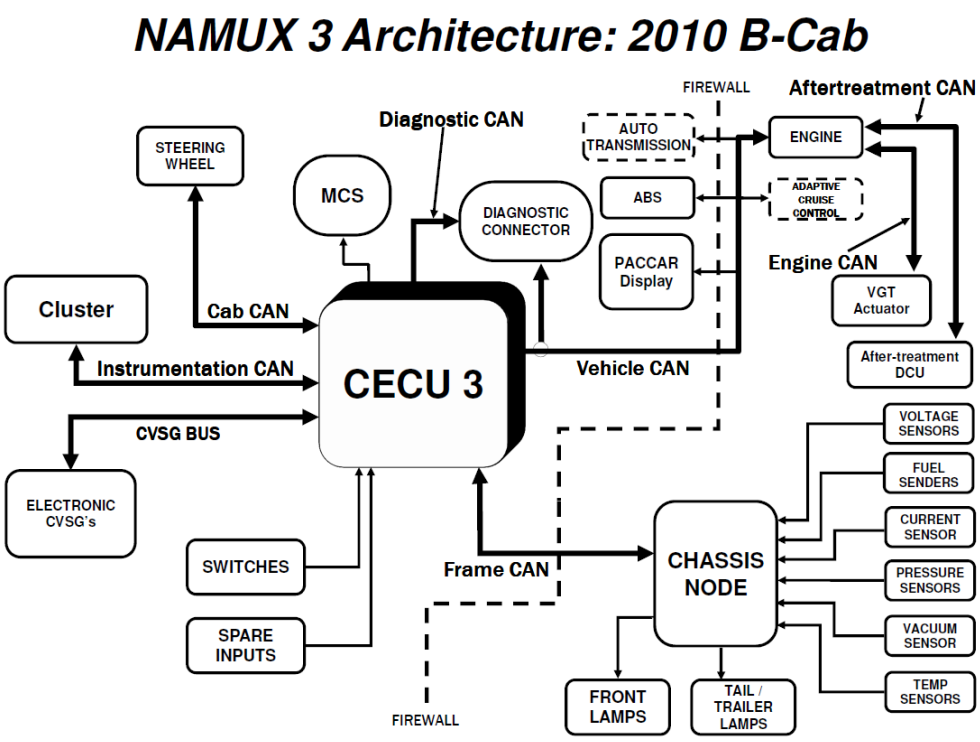
No: Proceed to step 3
Yes : Proceed to step4
</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1167c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key

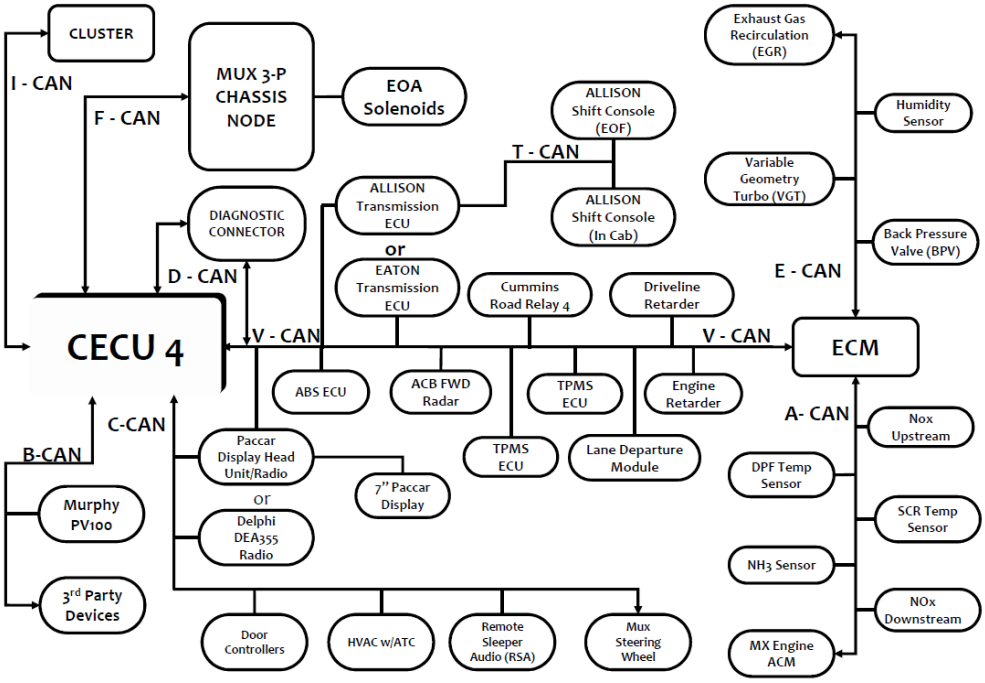
Use DAVIE to re-check for the presence of active faults:

Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault
</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1167d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

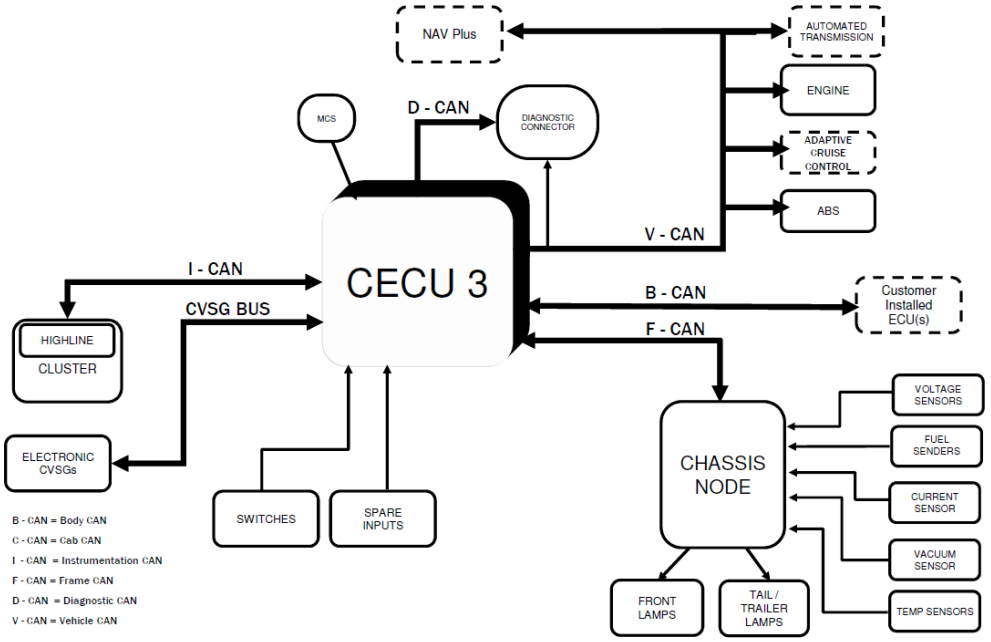
U1168

Code number	U1168
Fault code description	CAN communication - Message (DPFC1) rate too low from emission system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type - Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This code relates to a communication issue and not to a specific component.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



<table>
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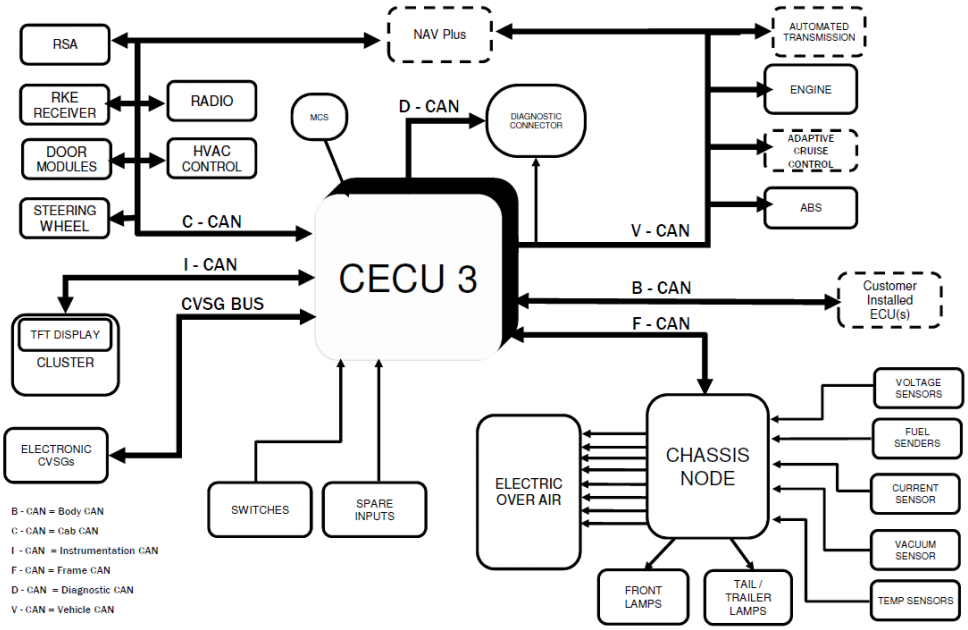
NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

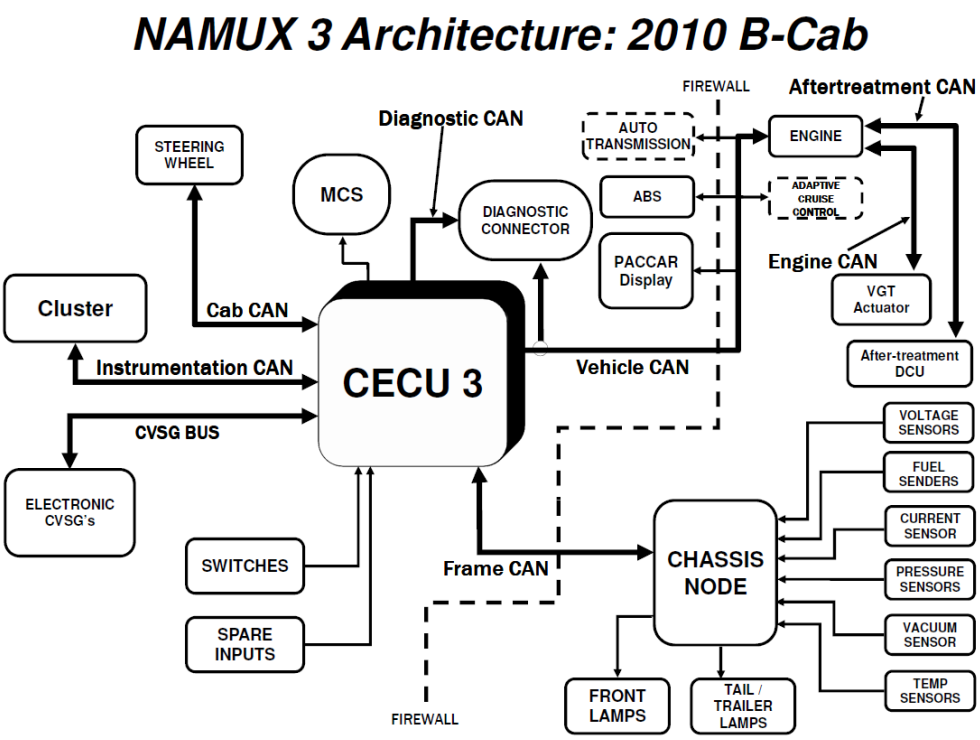
- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1168a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.
Was there evidence of any of the above?</td></tr>
</table>

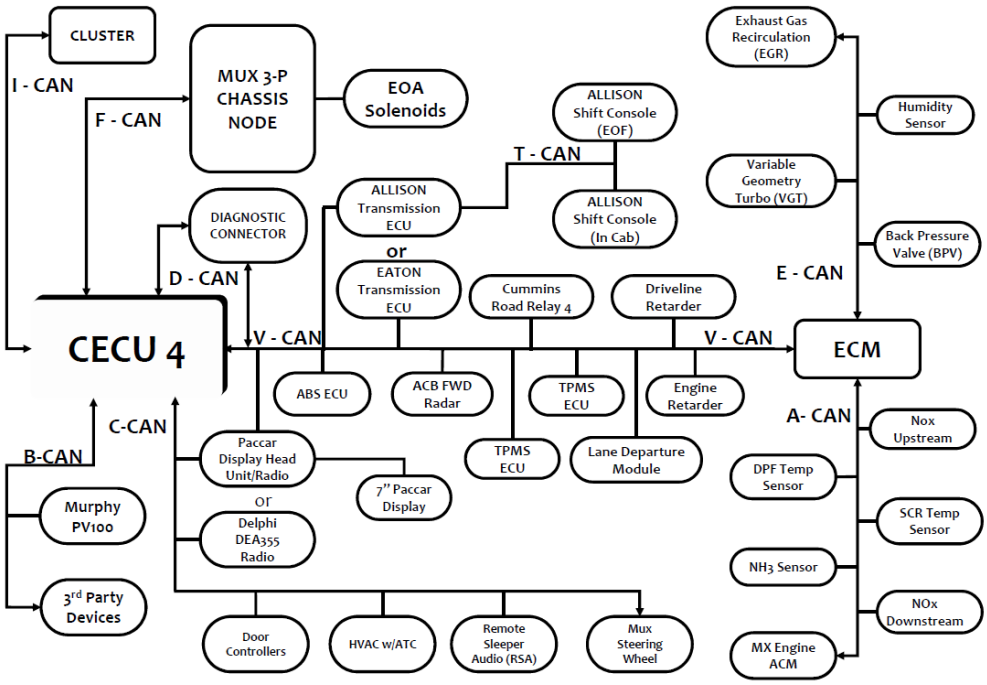
</td></tr>
</table>

<table>
<tr><td></td><td>
No: Proceed to step 2.
Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2
<table>
<tr><td>Step 2</td><td>Step ID 1168b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
Lookup the technical data of the specific system
Perform the checking data test of the specific component
Is test pass?
No: Proceed to step 3
Yes : Proceed to step4</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1168c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key
Use DAVIE to re-check for the presence of active faults:
Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1168d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair:
With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics.
With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

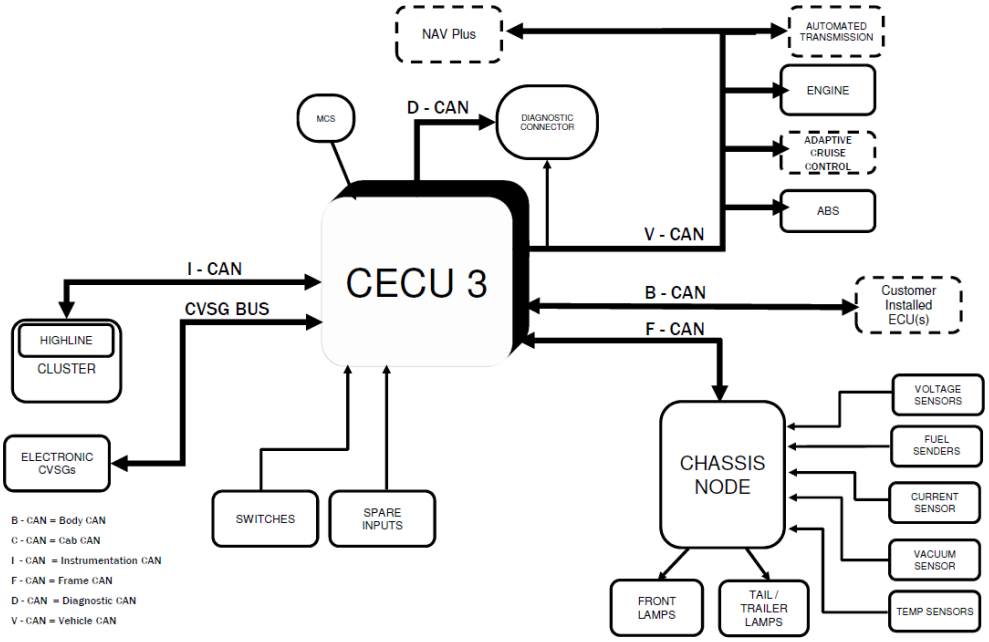
U1179

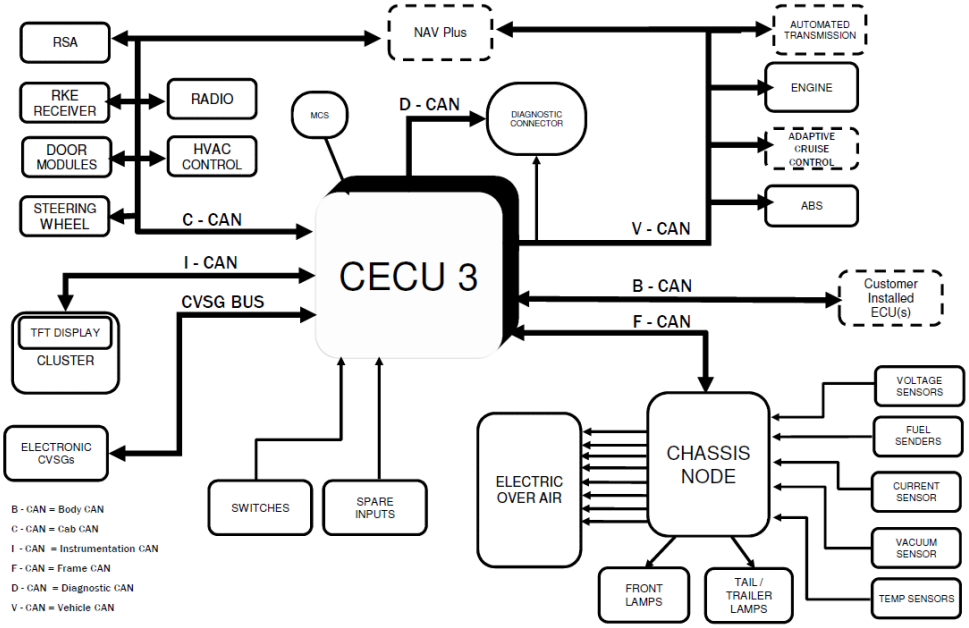
Code number	U1179
Fault code description	CAN communication - Message (PROPB_VIC) out of range
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Fault in adjustable speed limiter switch
Additional information	No additional information available
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1179a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above?		

<table>
<tr><td></td><td>

No: Proceed to step 2.
Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1179b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system
Perform the checking data test of the specific component

Is test pass?

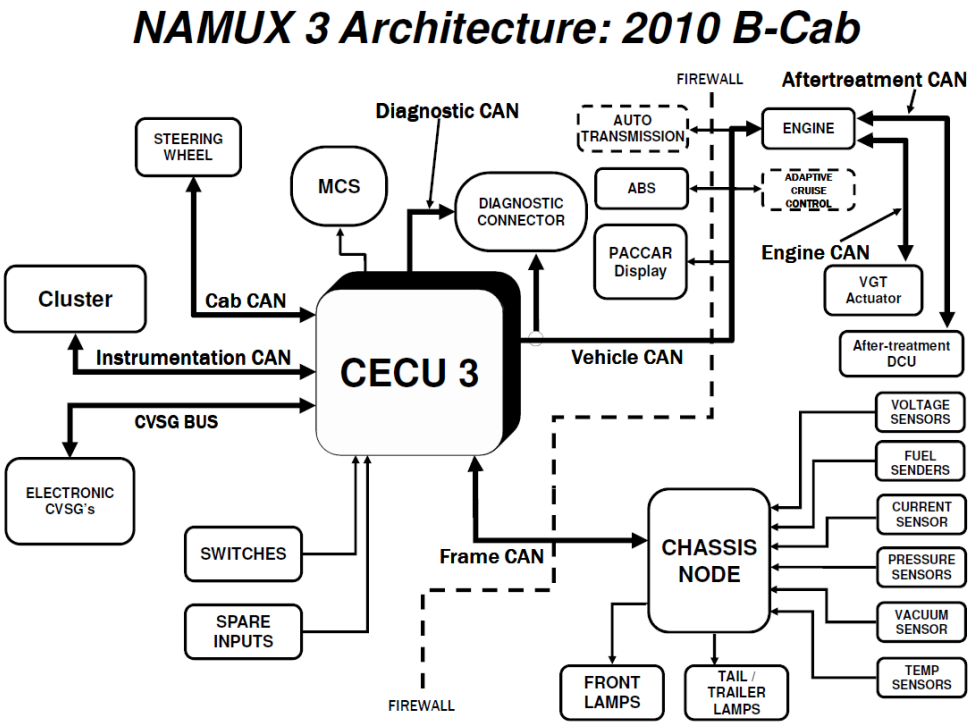
No: Proceed to step 3
Yes : Proceed to step4
</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1179c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key

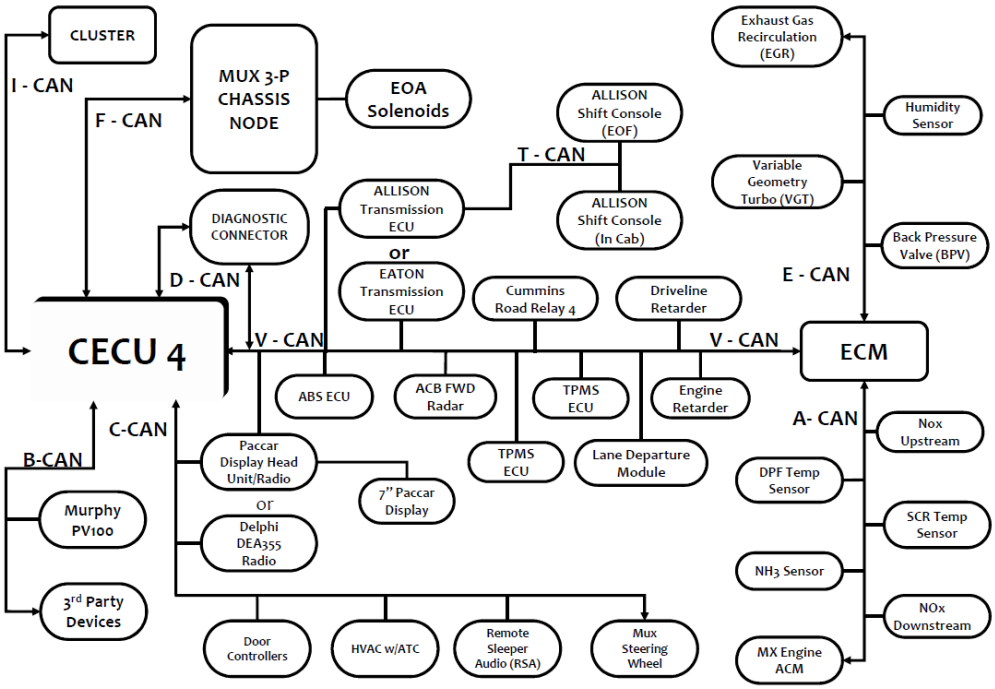
Use DAVIE to re-check for the presence of active faults:

Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault.
</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1179d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

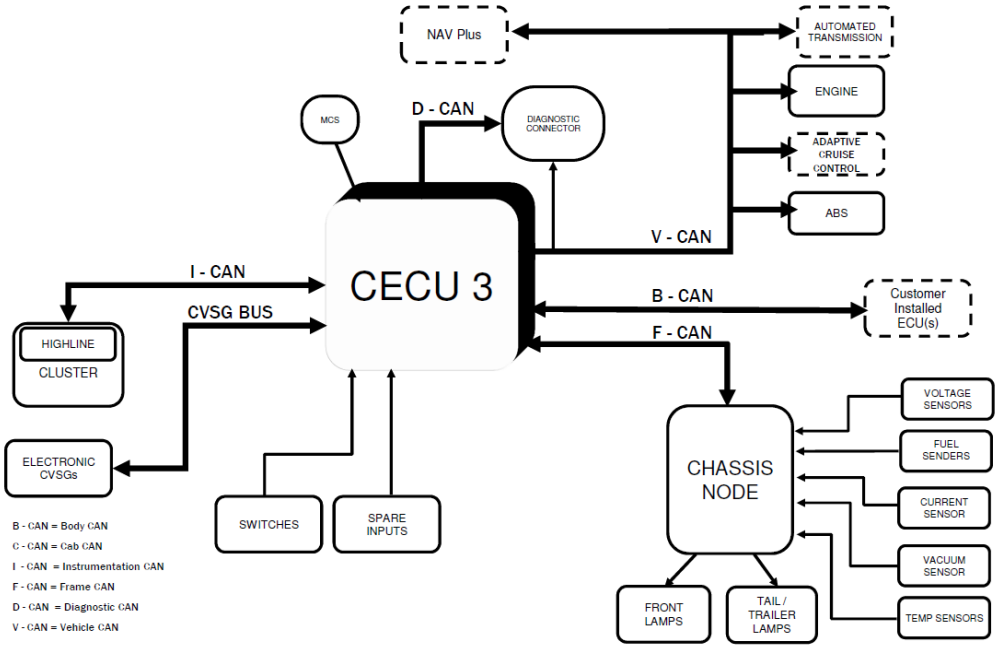
U117A

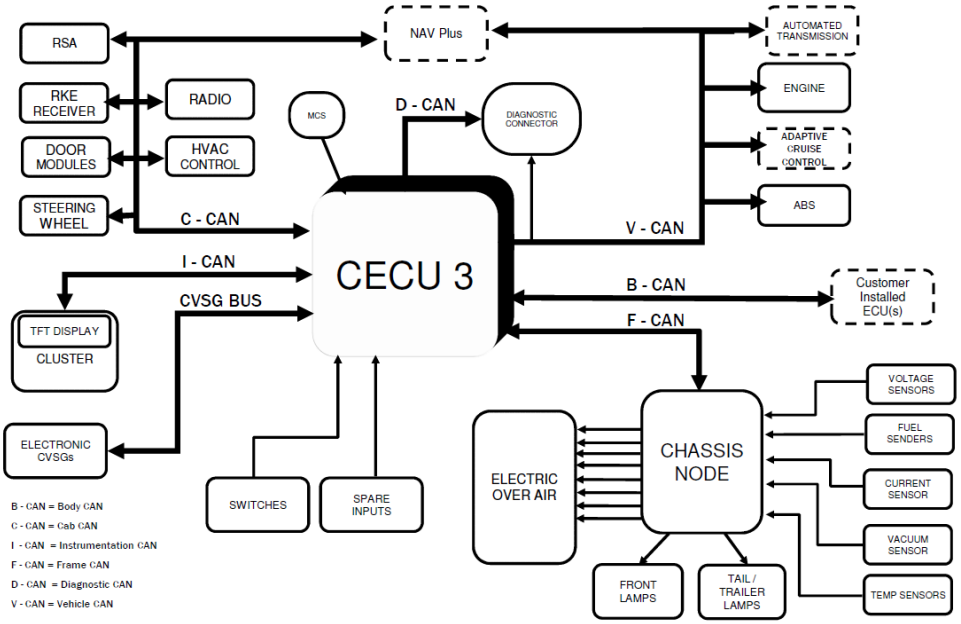
Code number	U117A
Fault code description	CAN communication - Message (A1SCREGT2) rate too low from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



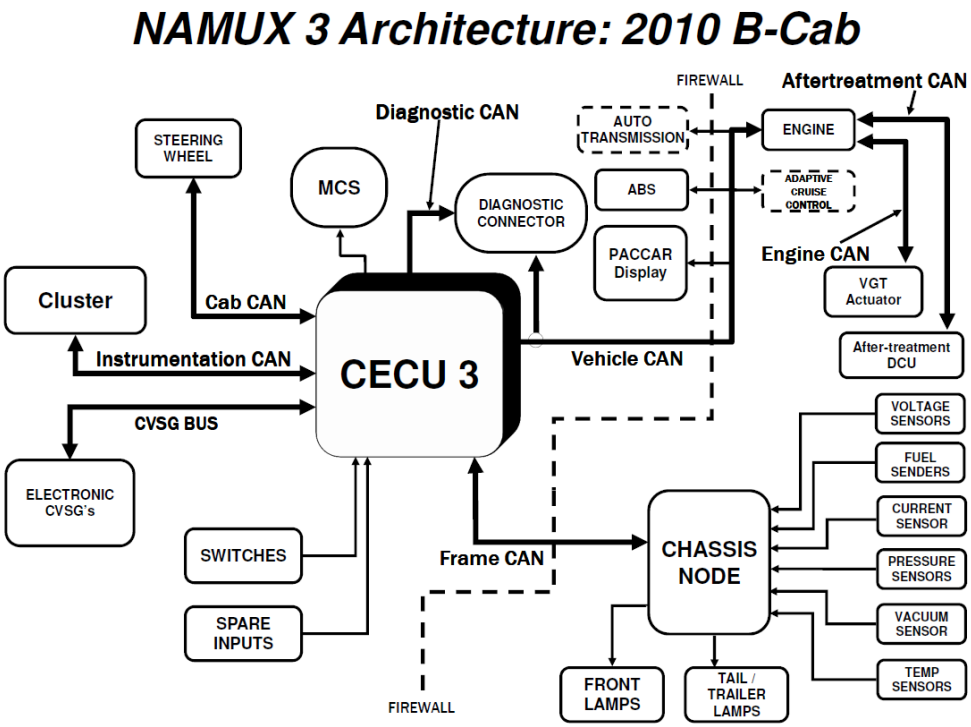


Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring
Additional information	No additional information available
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

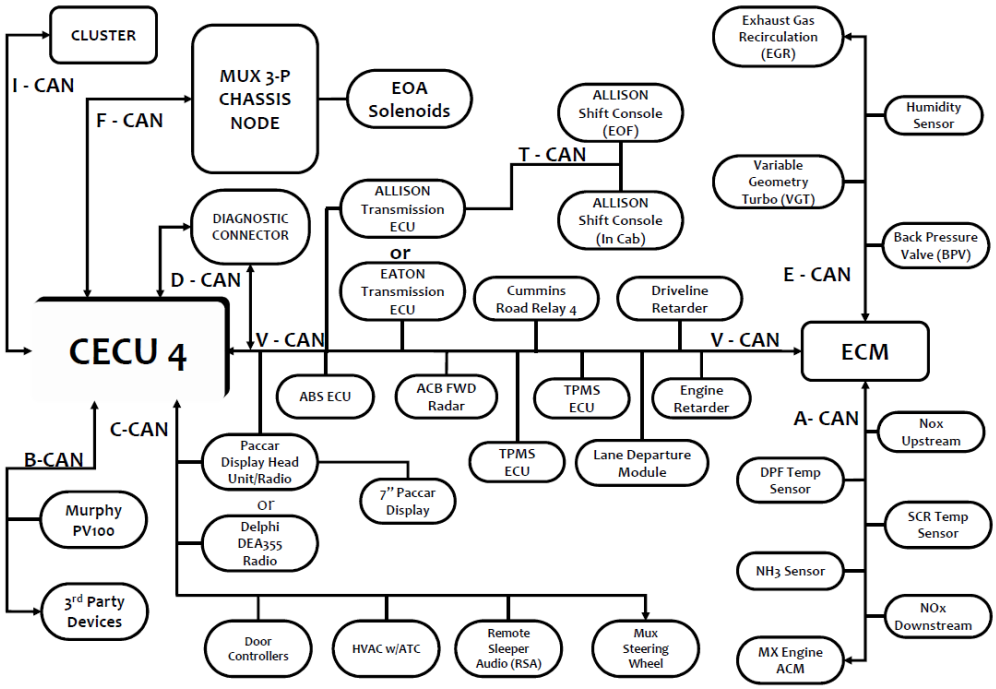
Step 1	Step ID 117A-a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.		

	Was there evidence of any of the above? • No: Proceed to step 2. • Yes: Make the appropriate repairs or component replacements. Use DAVIE to re-check for the presence of active faults. • If this related fault is no longer active, then this issue has been resolved. • If this related fault is still active, Proceed to step 2
	Step 2 | Step ID 117A-b | SRT Data check • Lookup the technical data of the specific system • Perform the checking data test of the specific component Is test pass? • No: Proceed to step 3 • Yes : Proceed to step4
	Step 3 | Step ID 117A-c | SRT Repair or replace component • Repair or replace the component, also check for electrical connection and wiring harness. • Reconnect the connector • ON the ignition key Use DAVIE to re-check for the presence of active faults: • Is DTC fault active: Proceed to step 4 • Is DTC fault inactive: Issue resolved. Clear inactive fault.
	Step 4 | Step ID 117A-d | SRT For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.
Verification Drive Cycle	To verify the repair: With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics With the brakes set, start the engine and allow it to run at idle for 2 minutes
	Back to Index

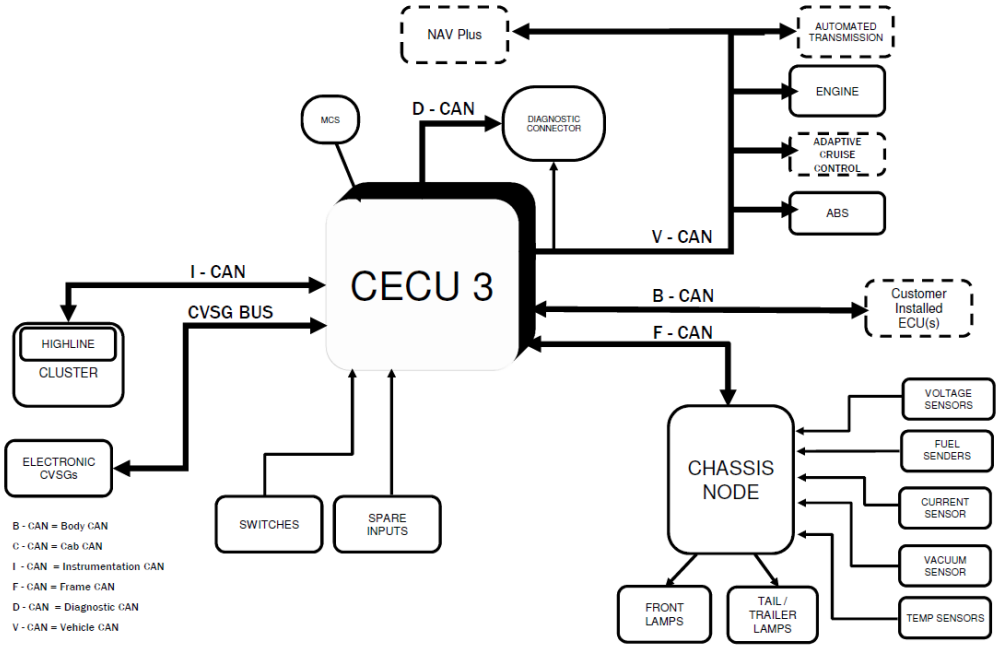
U117C

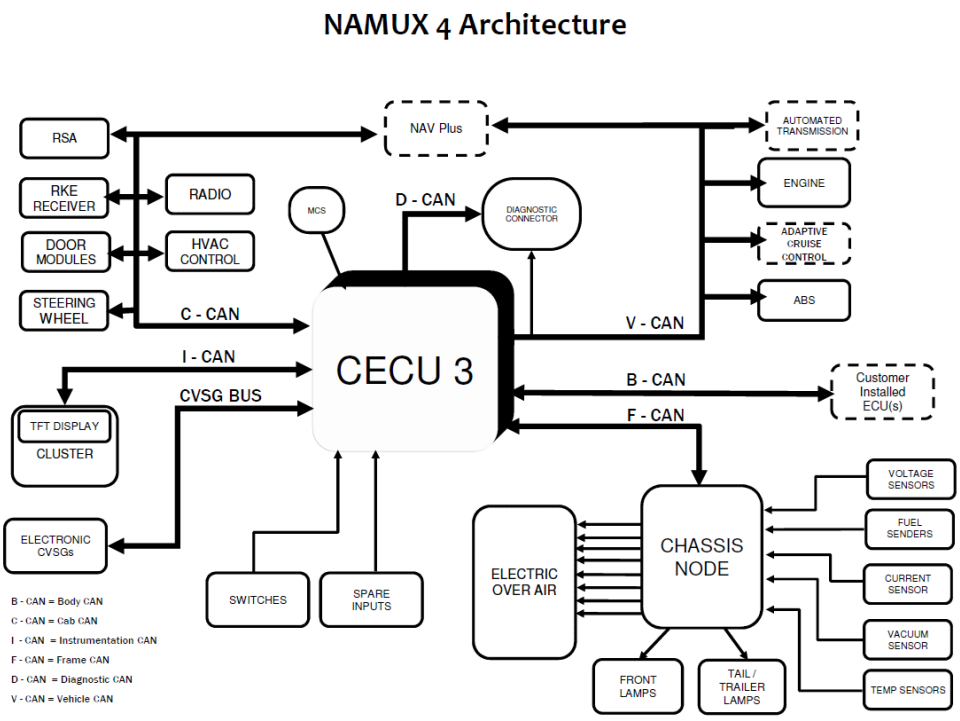
Code number	U117C
Fault code description	CAN communication - Message (A1SCREGT2) out of range - Intermediate gas temperature from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• Breakdown in communication in the CAN network • Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring.
Additional information	No additional information available
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 117C-a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.		

Was there evidence of any of the above?

- No: Proceed to step 2.
- Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

- If this related fault is no longer active, then this issue has been resolved.
- If this related fault is still active, Proceed to step 2

Step 2	Step ID 117C-b	SRT

Data check

- Lookup the technical data of the specific system
- Perform the checking data test of the specific component

Is test pass?

- No: Proceed to step 3
- Yes : Proceed to step4

Step 3	Step ID 117C-c	SRT

Repair or replace component

- Repair or replace the component, also check for electrical connection and wiring harness.
- Reconnect the connector
- ON the ignition key

Use DAVIE to re-check for the presence of active faults:

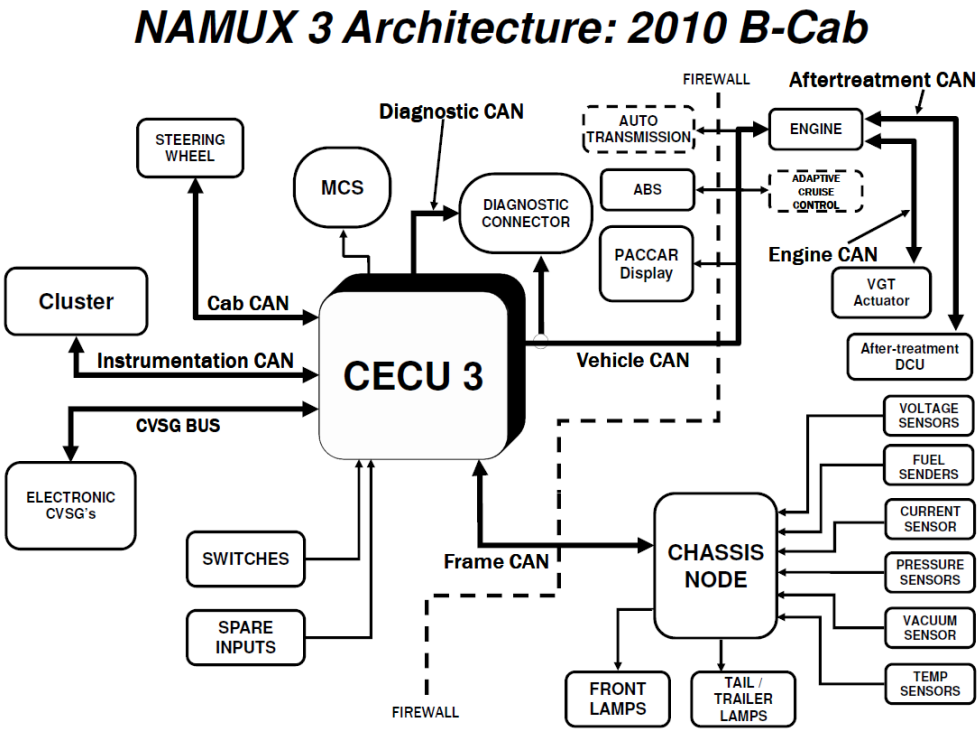
- Is DTC fault active: Proceed to step 4
- Is DTC fault inactive: Issue resolved. Clear inactive fault.

Step 4	Step ID 117C-d	SRT

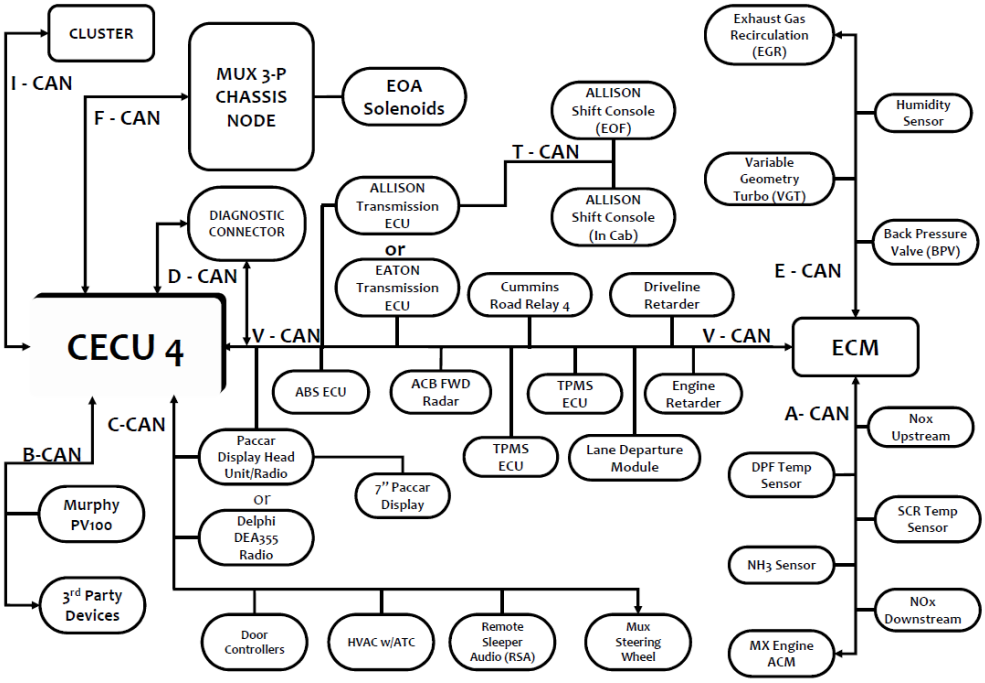
For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.

Verification Drive Cycle	To verify the repair: With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics With the brakes set, start the engine and allow it to run at idle for 2 minutes
	Back to Index

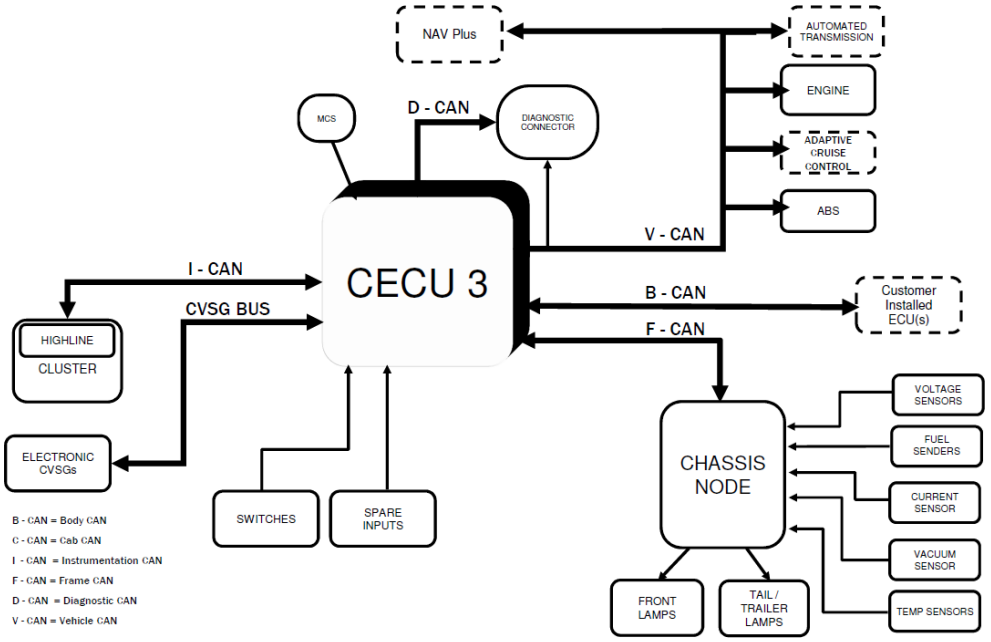
U1184

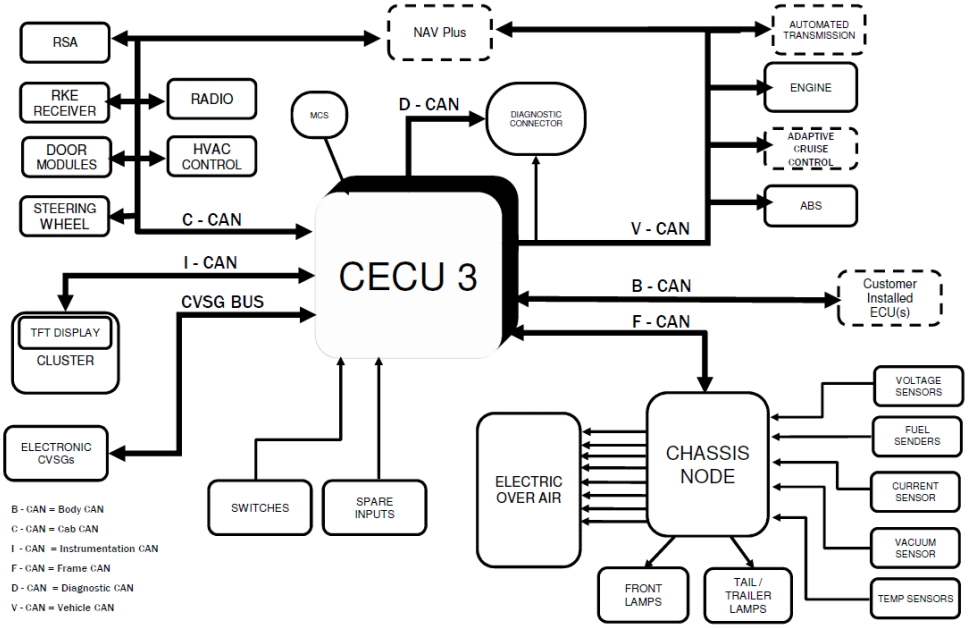
Code number	U1184
Fault code description	CAN communication - Message (CCVS) out of range - Cruise Control enable switch from vehicle controller
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	Check cabin ECU for faults
Additional information	No additional information available
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1184a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above? • No: Proceed to step 2.		

<table>
<tr>
<td></td>
<td>

Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1184b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system
Perform the checking data test of the specific component

Is test pass?

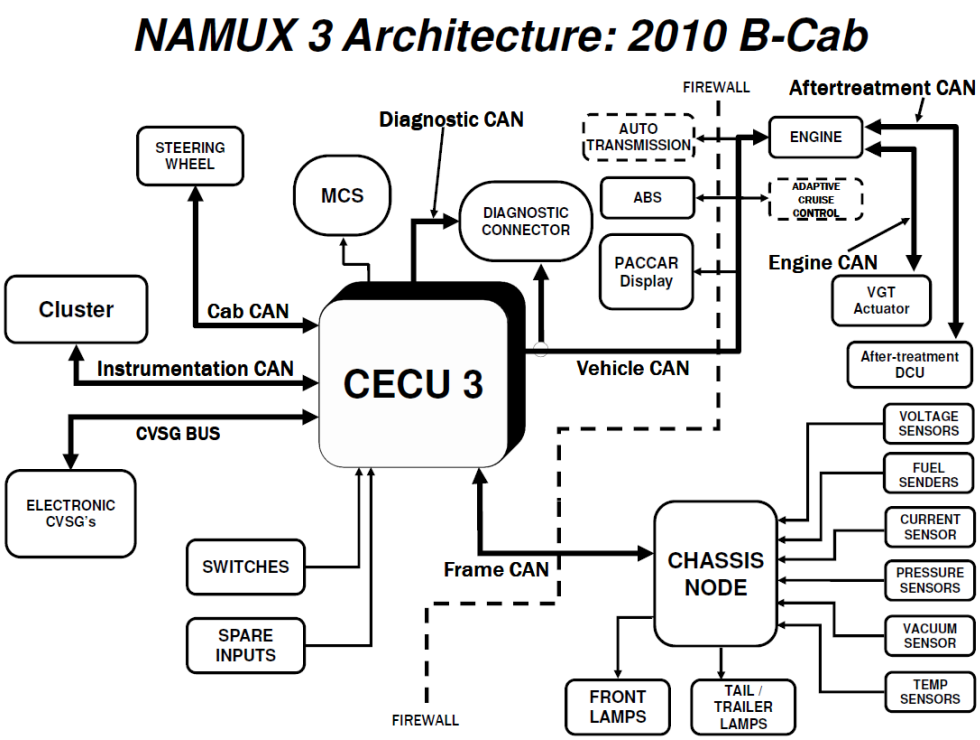
No: Proceed to step 3
Yes : Proceed to step4
</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1184c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key

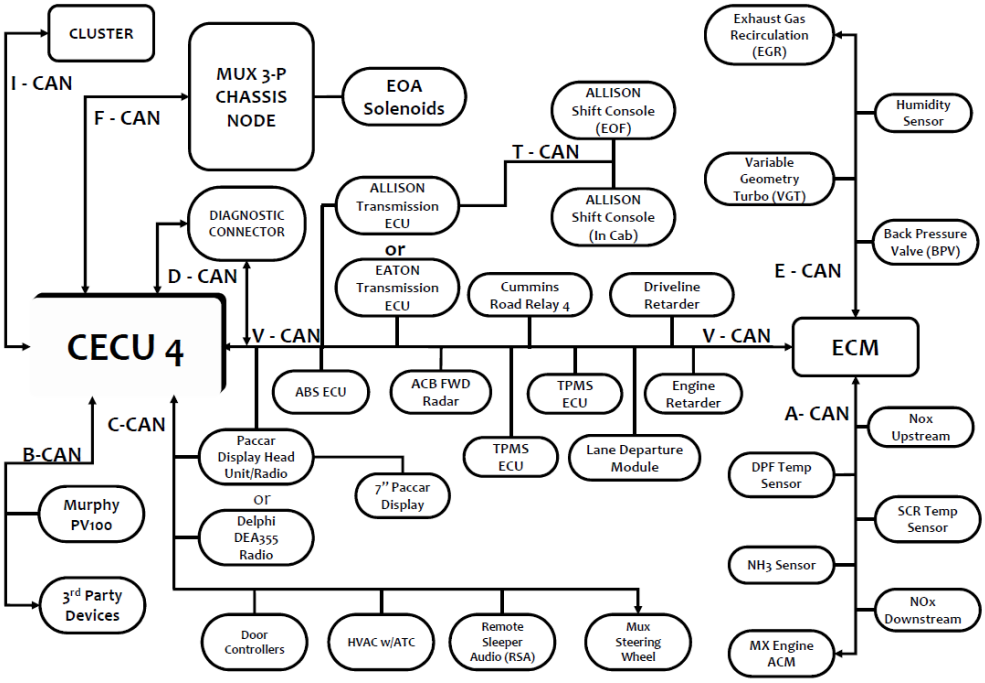
Use DAVIE to re-check for the presence of active faults:

Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault.
</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1184d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Verification Drive Cycle</td>
<td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td>
</tr>
<tr>
<td></td>
<td>Back to Index</td>
</tr>
</table>

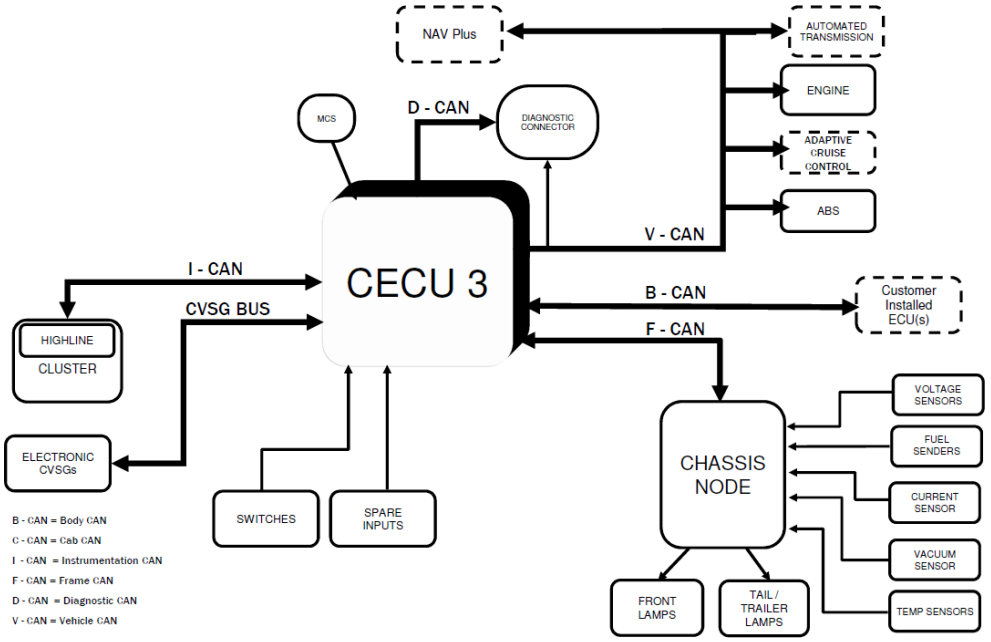
U1188

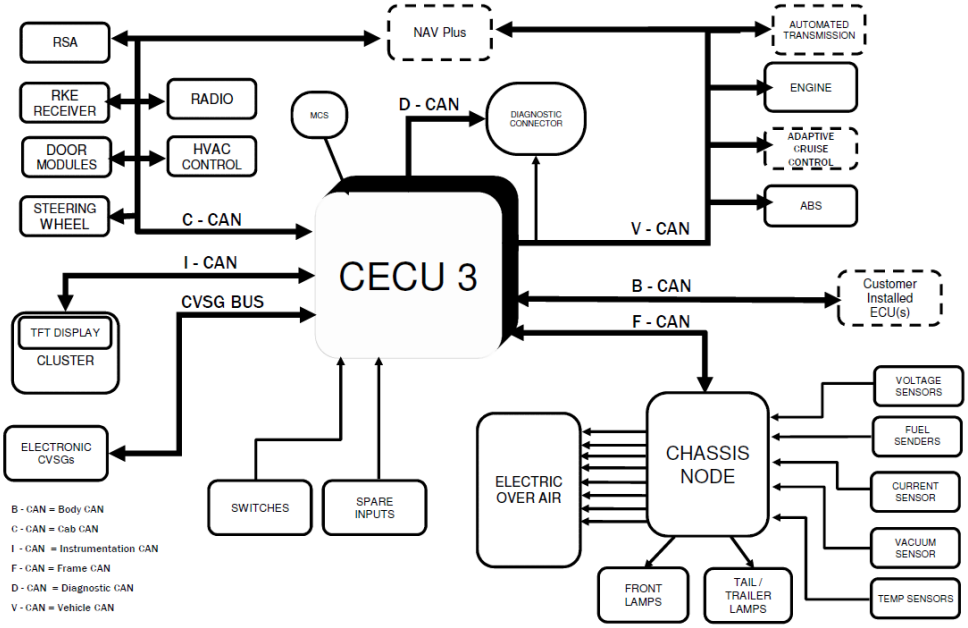
Code number	U1188
Fault code description	CAN communication - Message (EBC2) out of range - Front axle speed from brake system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	Check brake system ECU for faults
Additional information	No additional information available

Diagnostic Step-by-Step

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1188a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above? • No: Proceed to step 2.		

<table>
<tr>
<td></td>
<td>

Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1188b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system
Perform the checking data test of the specific component

Is test pass?

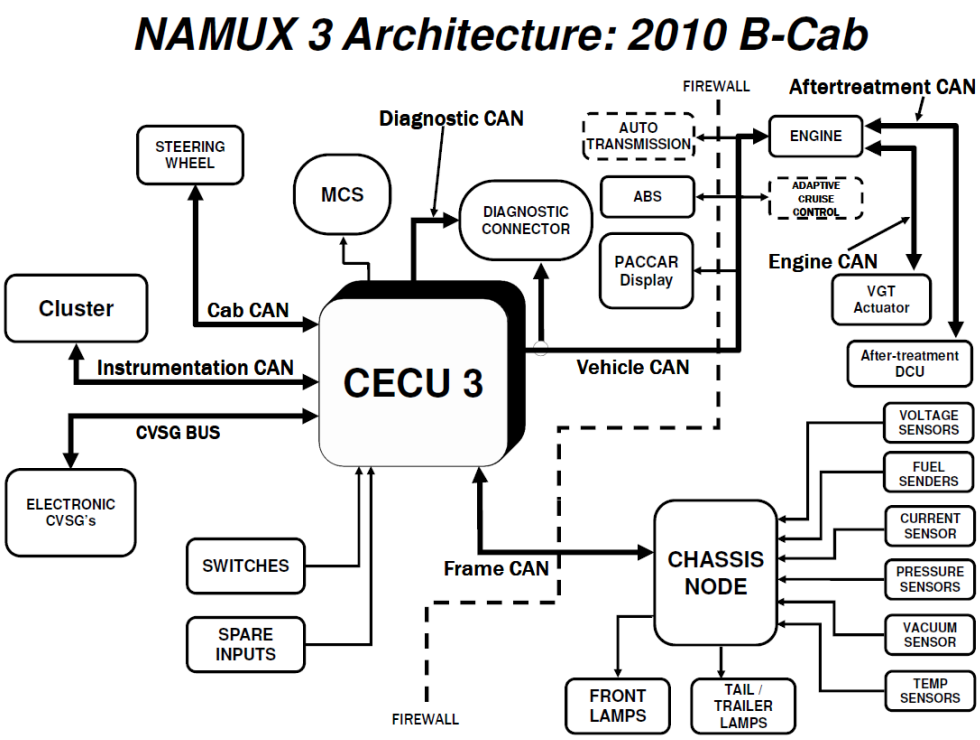
No: Proceed to step 3
Yes : Proceed to step4
</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1188c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key

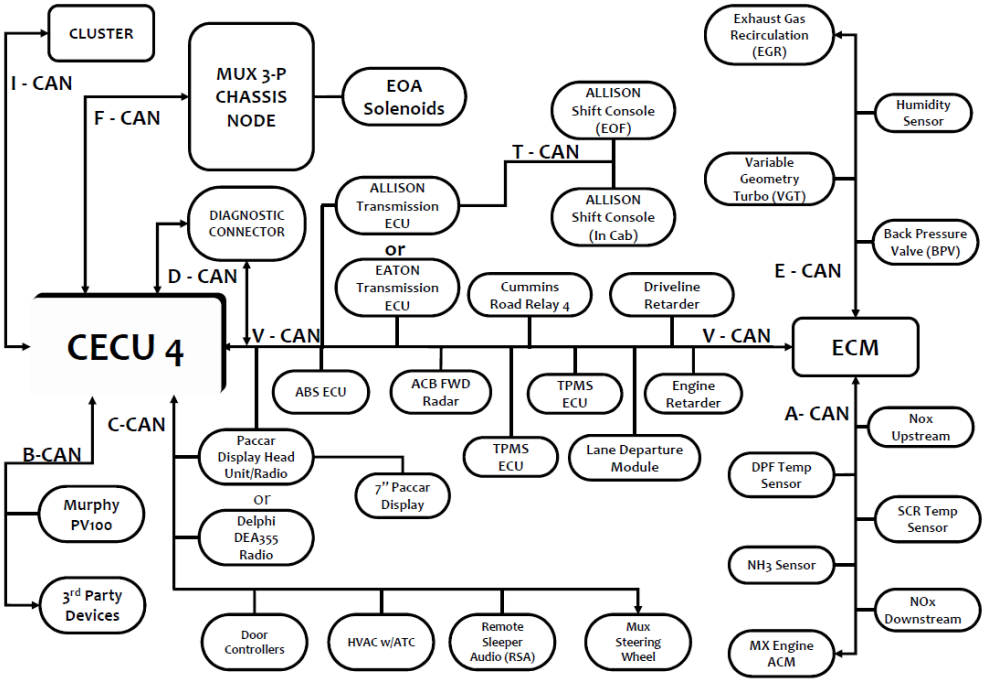
Use DAVIE to re-check for the presence of active faults:

Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault.
</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1188d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Verification Drive Cycle</td>
<td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td>
</tr>
<tr>
<td></td>
<td>Back to Index</td>
</tr>
</table>

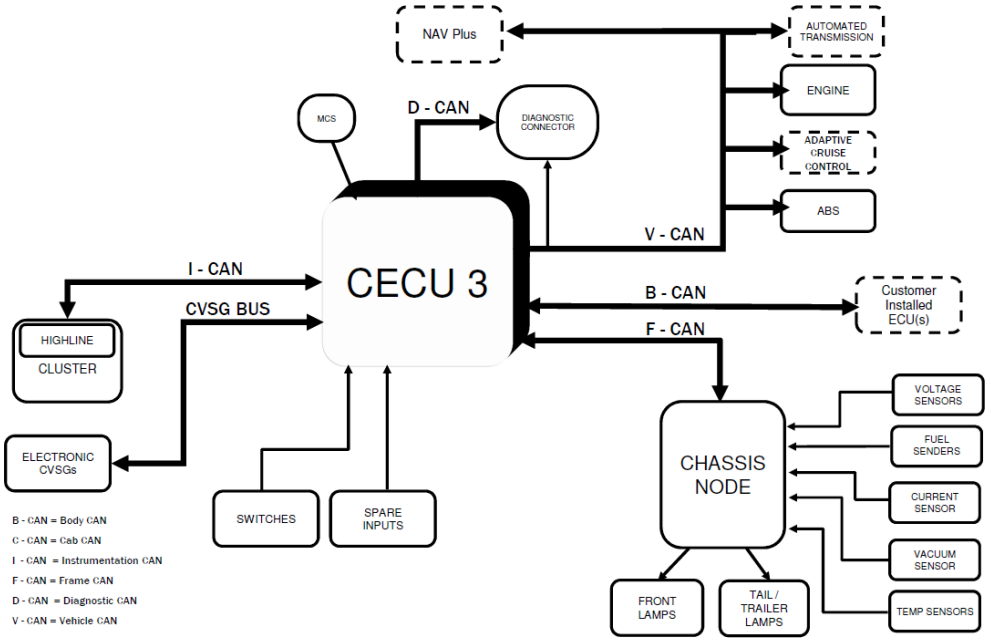
U1190

Code number	U1190
Fault code description	CAN communication - Message (ERC1_DR) rate too low from retarder
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



<table>
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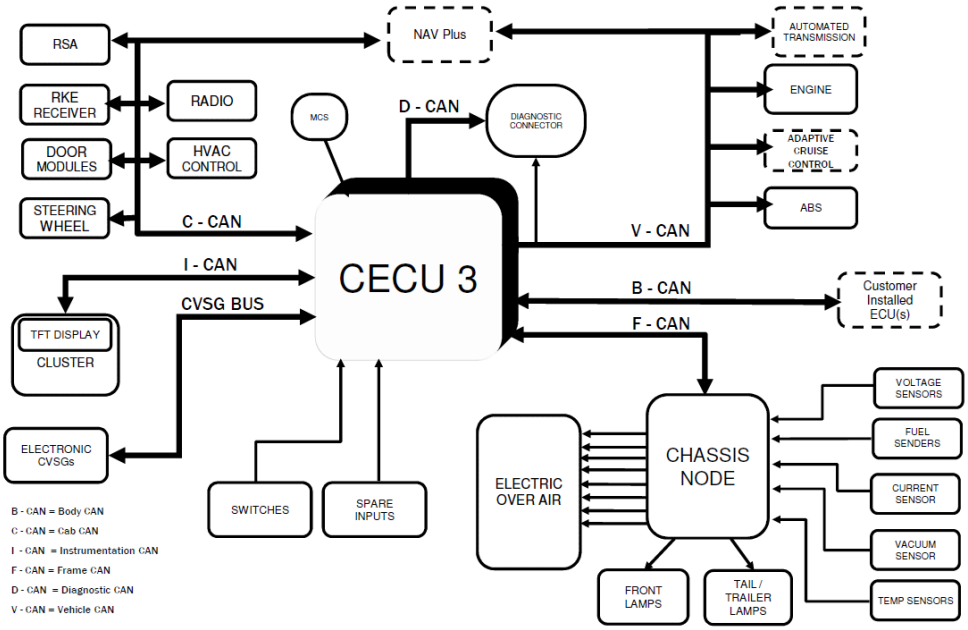
NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Open circuit, short circuit to ground, or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1190a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

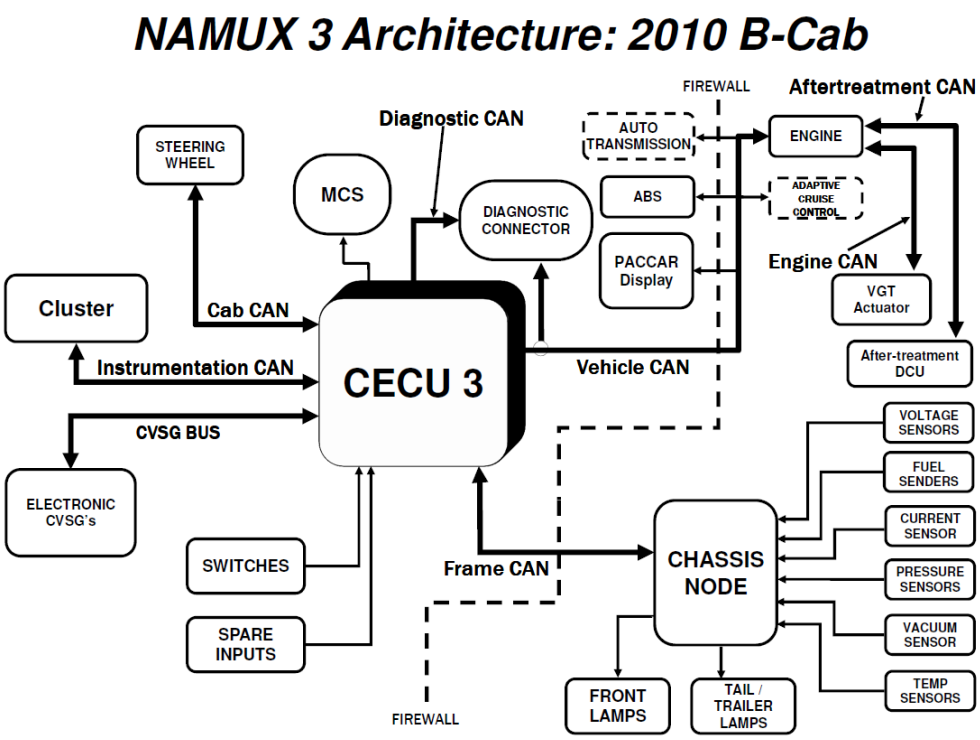
<table>
<tr><td></td><td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1190b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

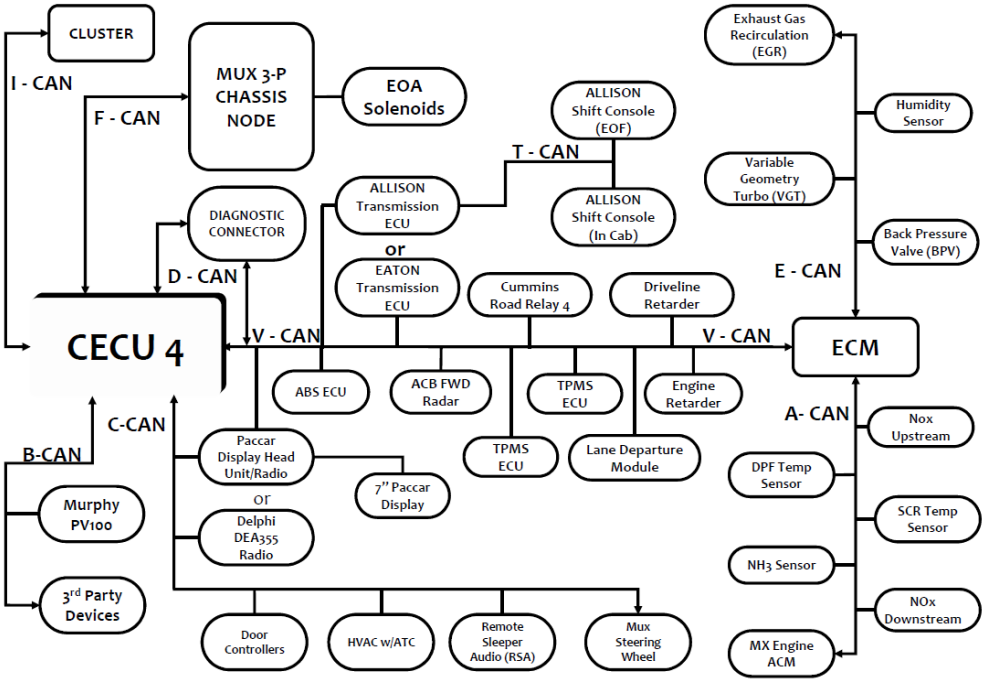
<table>
<tr><td>Step 3</td><td>Step ID 1190c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive: Issue resolved. Clear inactive fault.</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 1190d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

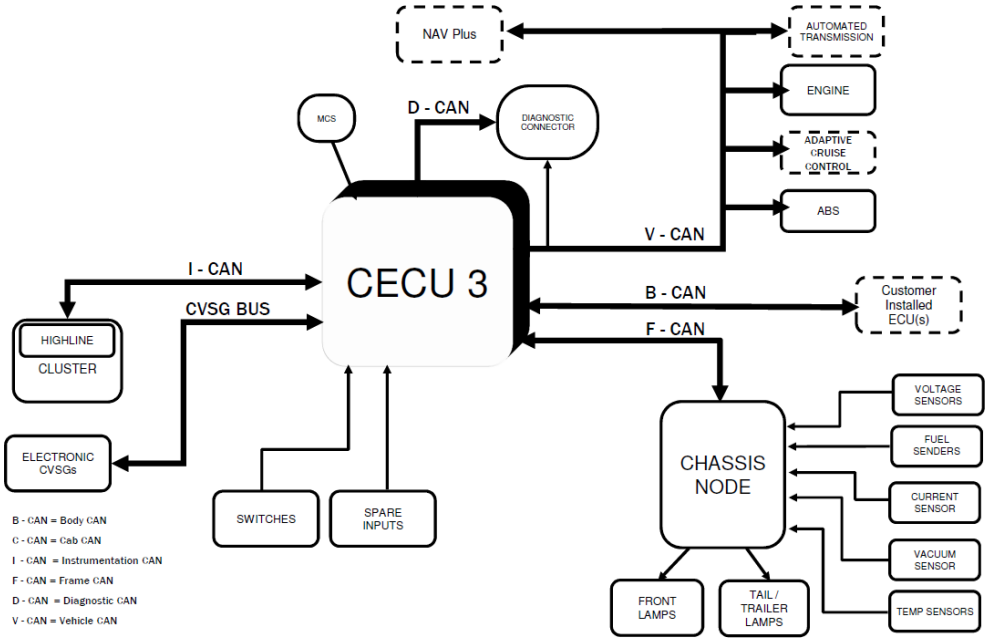
U1194

Code number	U1194
Fault code description	CAN Communication – Message (DD) rate too low from vehicle controller
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680

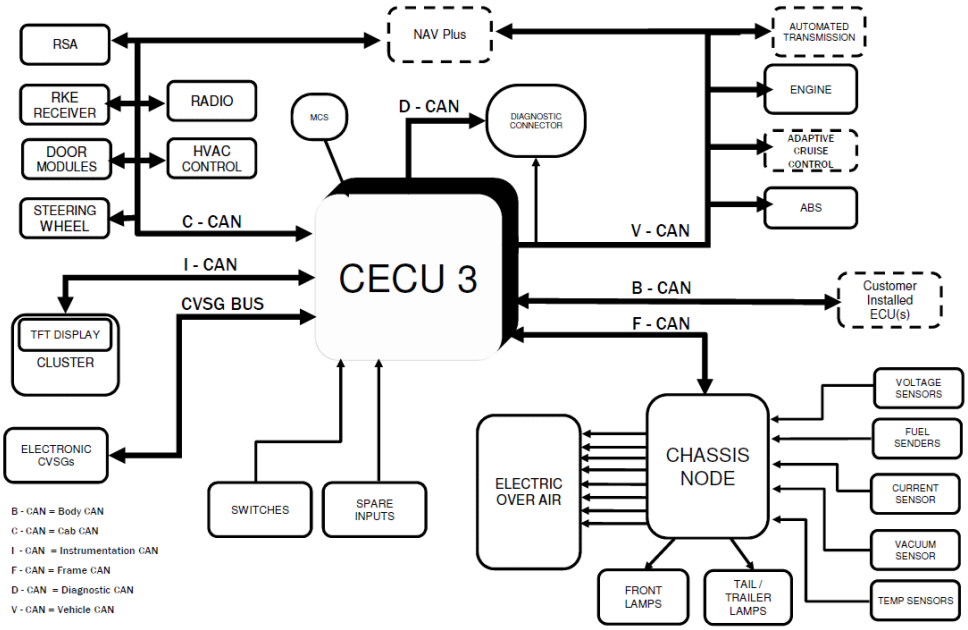


NAMUX 3 Architecture



<table>
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Open circuit, short circuit to ground or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1194a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

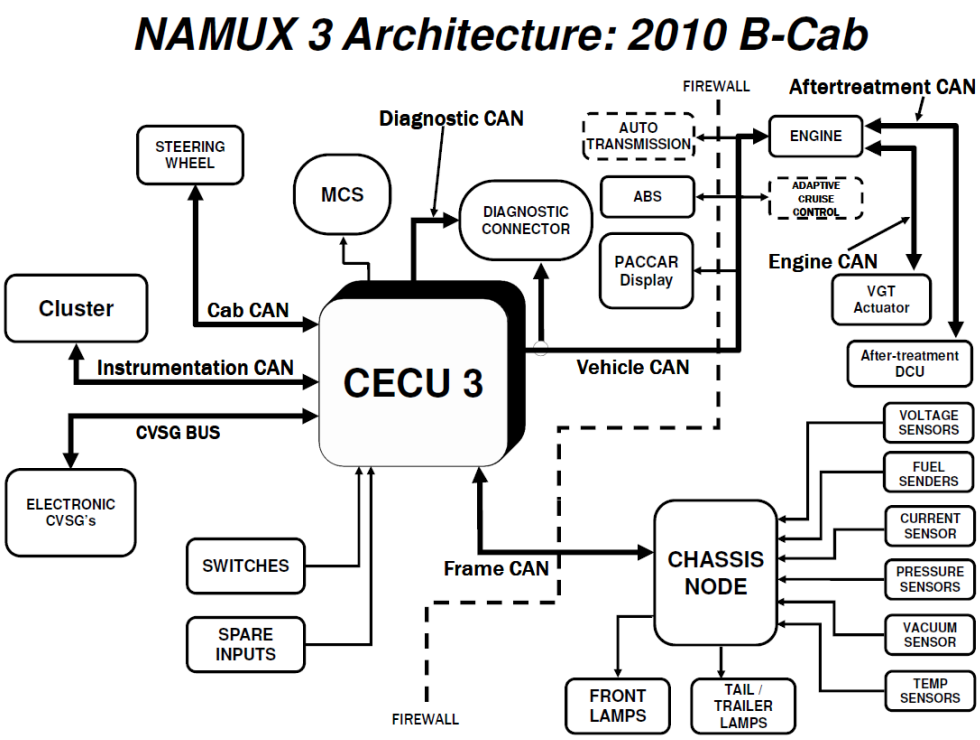
<table>
<tr><td></td><td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1194b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

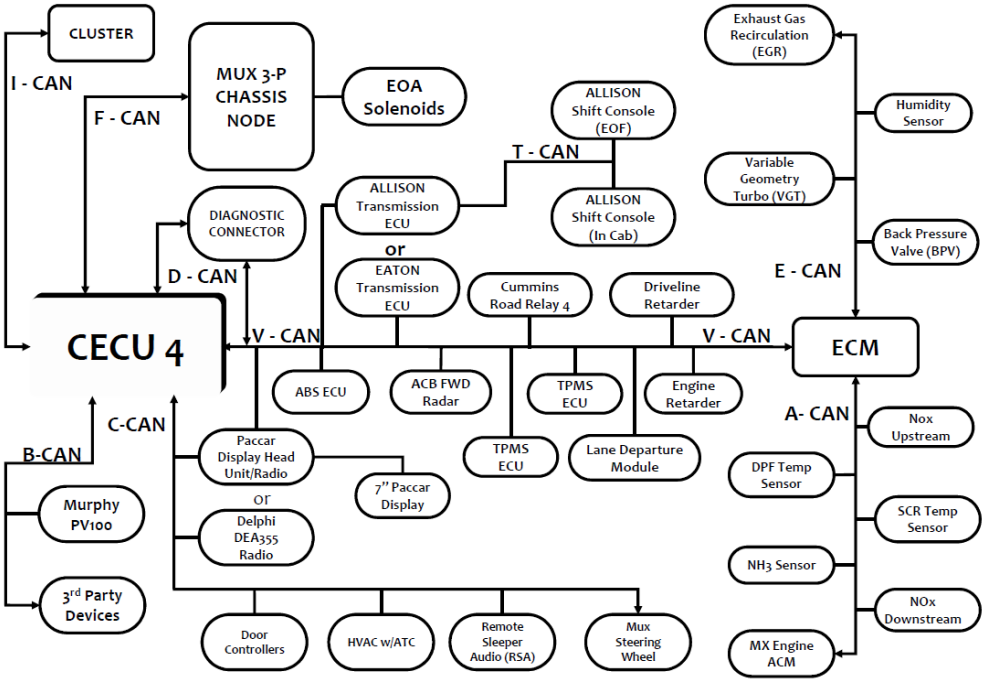
<table>
<tr><td>Step 3</td><td>Step ID 1194c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive: Issue resolved. Clear inactive fault.</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 1194d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

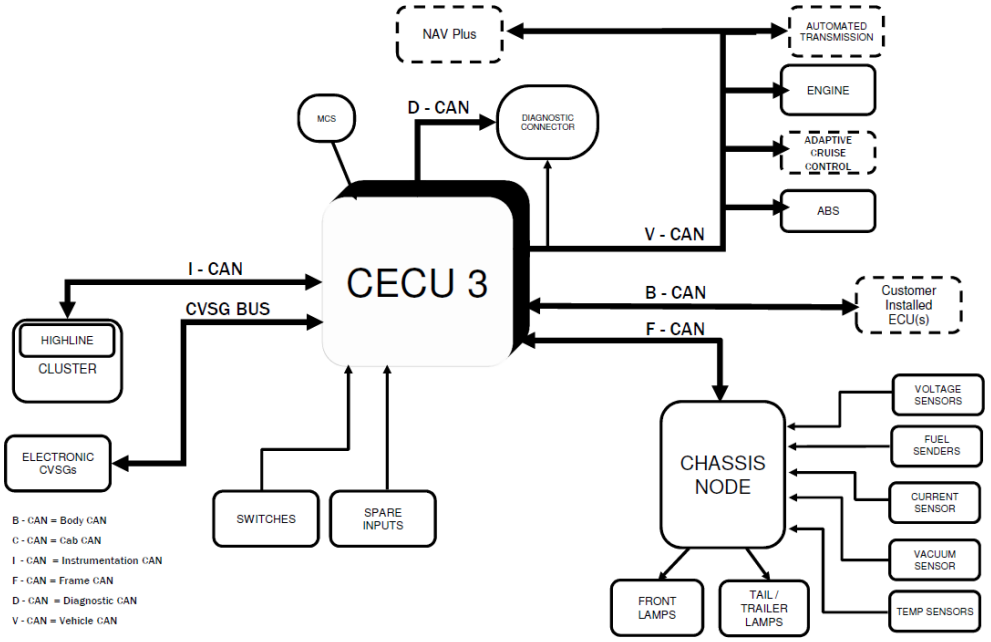
U1198

Code number	U1198
Fault code description	CAN Communication – Message (EBC2) rate too low from brake system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680

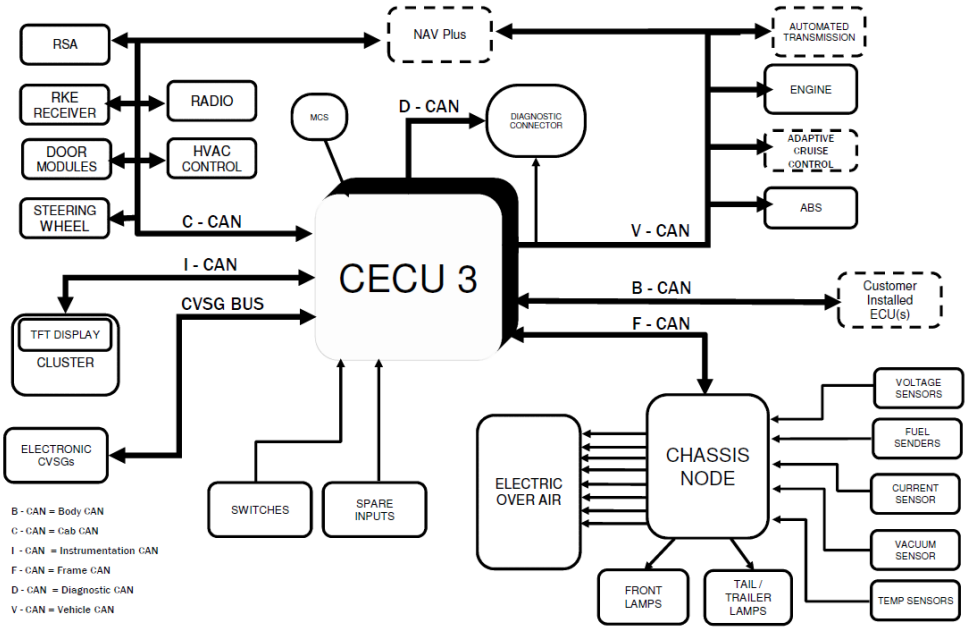


NAMUX 3 Architecture



<table>
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Open circuit, short circuit to ground or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1198a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

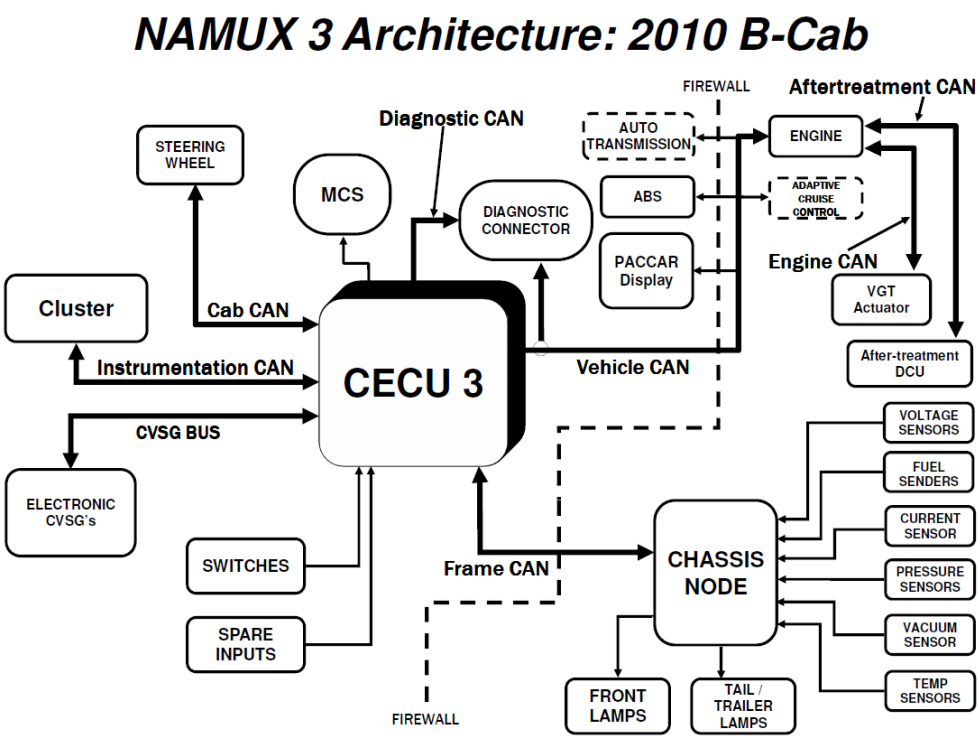
<table>
<tr>
<td></td>
<td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1198b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

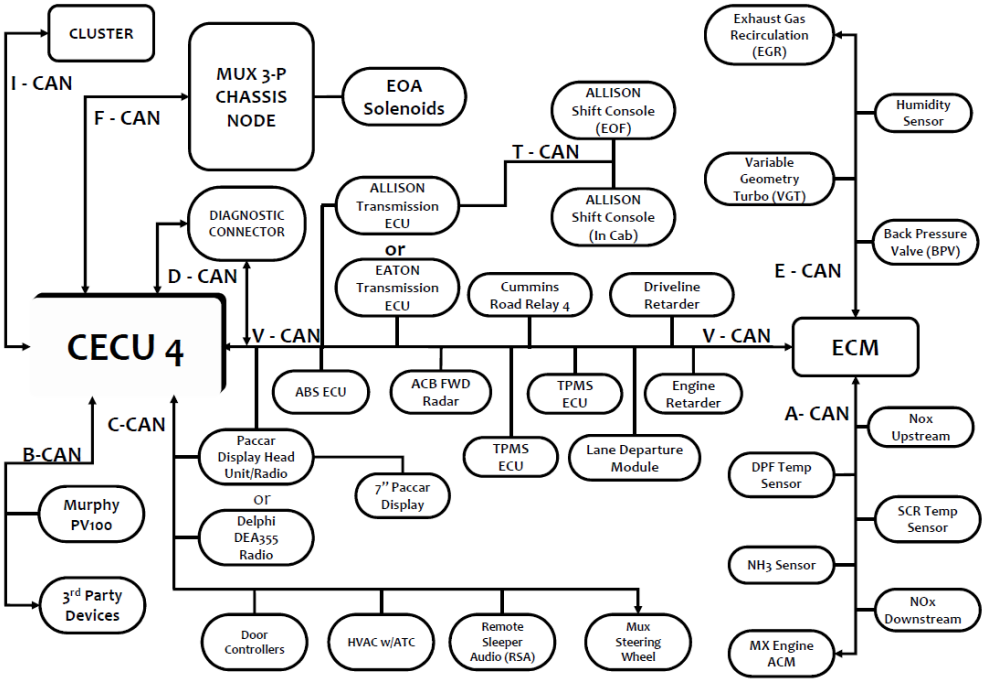
<table>
<tr><td>Step 3</td><td>Step ID 1198c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive: Issue resolved. Clear inactive fault.</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 1198d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Verification Drive Cycle</td>
<td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td>
</tr>
<tr>
<td></td>
<td>Back to Index</td>
</tr>
</table>

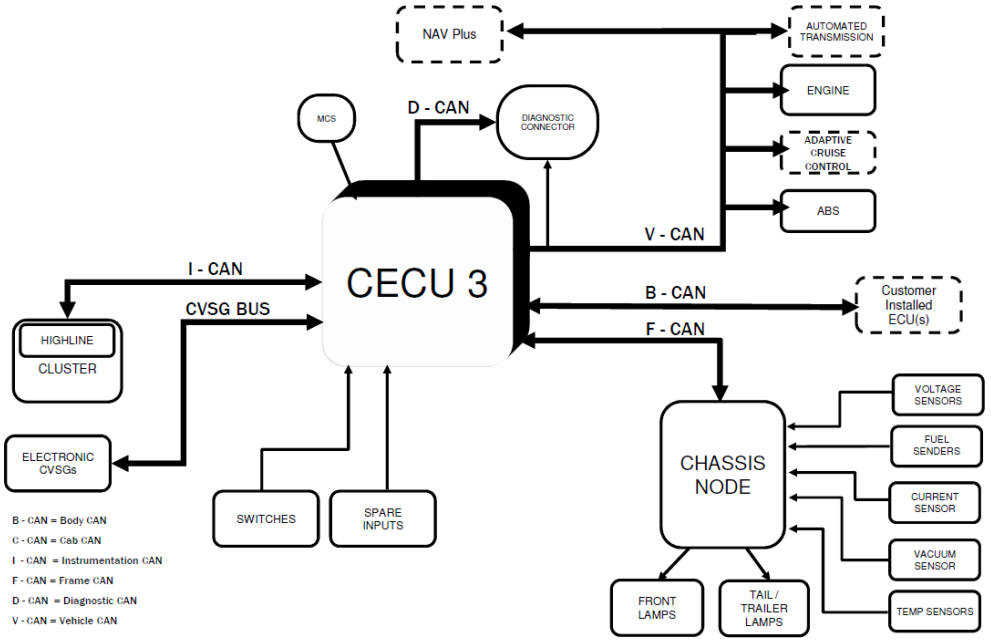
U1208

Code number	U1208
Fault code description	CAN Communication – Message (PTO) rate too low from vehicle controller
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



<table>
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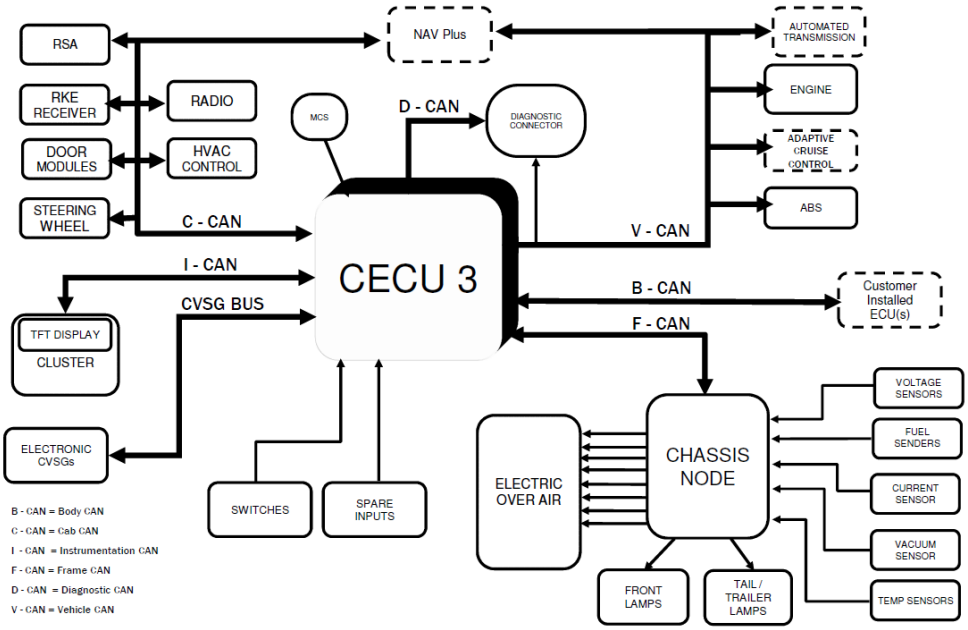
NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Open circuit, short circuit to ground or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1208a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

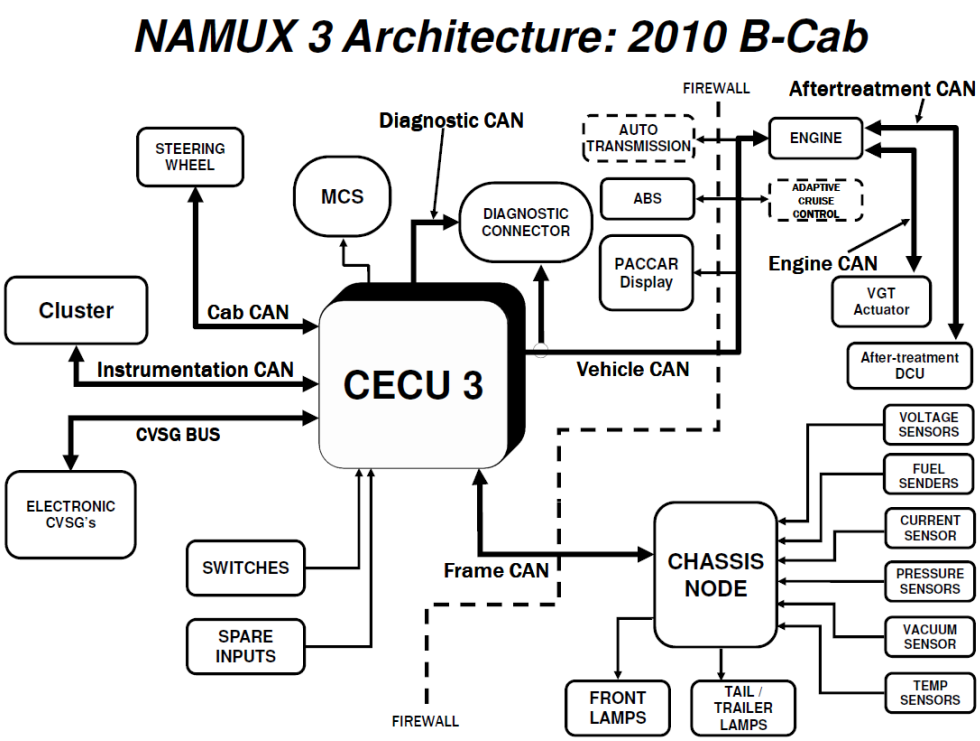
<table>
<tr>
<td></td>
<td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1208b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

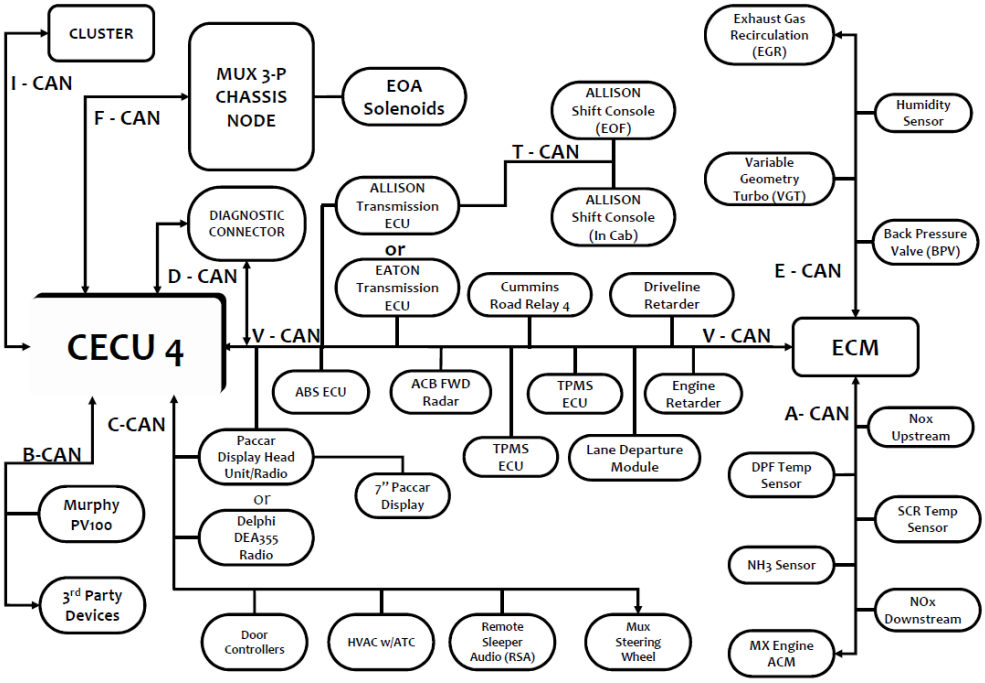
<table>
<tr><td>Step 3</td><td>Step ID 1208c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive: Issue resolved. Clear inactive fault.</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 1208d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Verification Drive Cycle</td>
<td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td>
</tr>
<tr>
<td></td>
<td>Back to Index</td>
</tr>
</table>

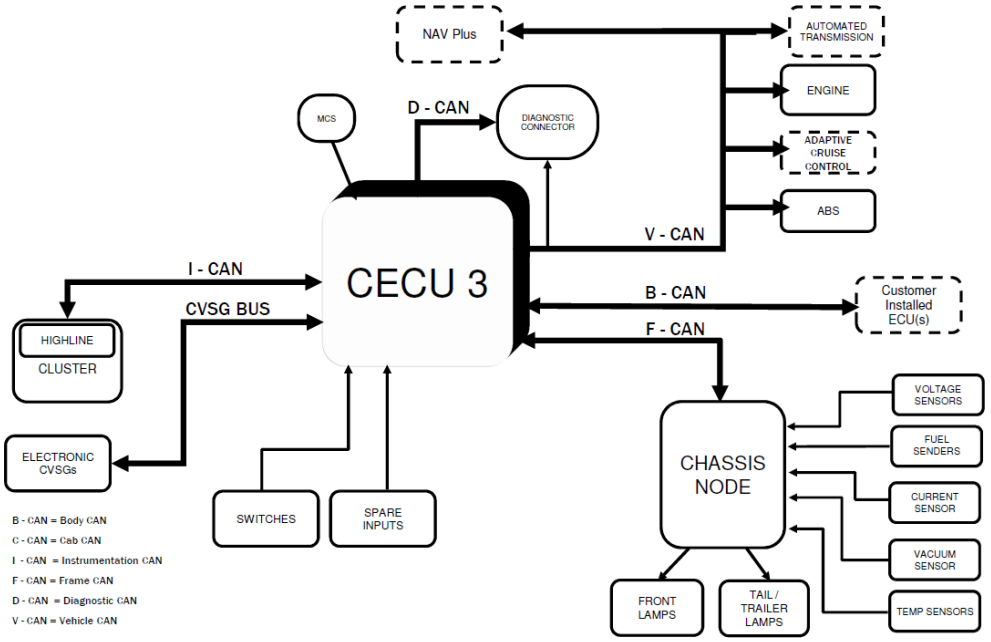
U1404

Code number	U1404
Fault code description	CAN communication - Message (ETC2) out of range - current gear from transmission system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

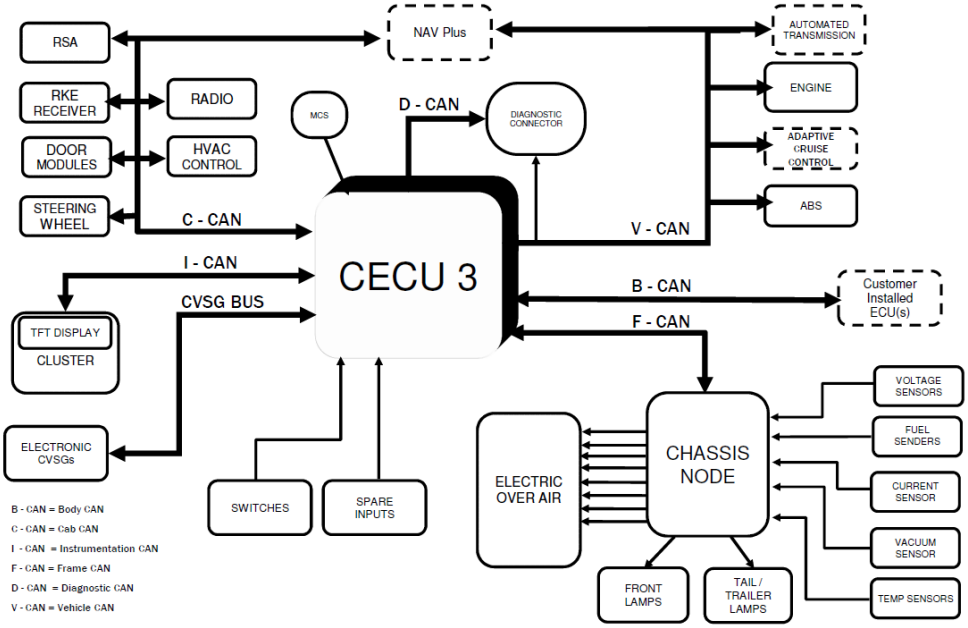
NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



NAMUX 4 Architecture



Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	Check transmission ECU for fault
Additional information	No additional information available

Diagnostic Step-by-Step

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1404a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above? • No: Proceed to step 2. • Yes: Make the appropriate repairs or component replacements.		

<table>
<tr><td></td><td>
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1404b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

<table>
<tr><td>Step 3</td><td>Step ID 1404c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive: Issue resolved. Clear inactive fault.</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 1404d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

U1406

Code number	U1406
Fault code description	CAN communication - Message (ACC1) out of range, Adaptive Cruise Control mode from Advanced Emergency Braking System
Fault code information	1-trip Check Engine lamp 3 drive cycle recovery Readiness group – None Freeze frame type – Crankcase
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	
Technical data	This DTC relates to a communication issue and not to a specific component.
Possible causes	• ACC RADAR Misalignment • Faulty wiring or related connection
Additional information	
Diagnostic Step-by-Step	**The ignition should always be in the OFF position when connecting or disconnecting electrical components to reduce the likelihood of damage to the components.** ▪ This troubleshooting procedure is based on the assumption that supply power and ground to the PMCI are functioning properly. ▪ Disconnecting the PMCI connectors during the troubleshooting process will result in multiple errors. ▪ For specific electrical component information and pin out locations, always refer to the technical data in Rapido. ▪ It is necessary to exit the 'Active errors' screen in DAVIE and run the diagnostic test again to identify a change in errors. ▪ This DTC can be set as a result of multiple failure modes. For proper fault isolation, complete all troubleshooting steps in the sequence provided.

Step 1. Investigate Related Trouble Codes

Before troubleshooting this code, take notice of any other active or inactive trouble codes. One or multiple other codes could have been the cause for this code.

Step 1.A Investigate related trouble codes	
Action 1. Use DAVIE Diagnostics to perform a Quick Check for current trouble codes.	
Are these or any other related codes active? P0567; P0568; P1062; P1122; U1184; U180B; U181F; U1820	
Yes	**No**
Refer to the troubleshooting information for these codes before continuing with this procedure.	
	Go to step 2.A

Step 2. Radar Alignment Checks

Step 2.A Special procedure, Wingman (Bendix) or OnGuard (Meritor-Wabco) RADAR alignment	
Action 1. Check Wingman (Bendix) or OnGuard (Meritor-Wabco) RADAR alignment using the procedure provided by the RADAR system's manufacturer.	
Was the RADAR found to be out of alignment?	
Yes	**No**
Re-align the RADAR using the associated procedure and tools from the system manufacturer. Use the corresponding tool to verify alignment: A-COM tool (Bendix Wingman) or Toolbox (Meritor-Wabco OnGuard). Refer to Step 3.A to perform the corresponding repair verification cycles and rechecks.	

If this code is still present after completing RADAR alignment, contact the PACCAR Engine Support Center for additional assistance.	**Contact the PACCAR Engine Support Center for additional assistance.**

Step 3. Repair Verification

Step 3.A Repair verification cycles	
Perform these repair verification cycles following any corrective actions taken, to enable related OBD monitors to reach a readiness state associated with the trouble code or system being investigated.  Before beginning these repair verification cycles, use the DAVIE Diagnostics, Quick Check function to clear all current DTCs from the PCI and EAS-3 ECUs.	
Action 1. Test Drive – 25 miles Drive the truck under normal conditions for distance of approximately 25 miles while running the autoadaptive cruise control.	
Were the identified repair verification cycles able to be completed?	
Yes	**No**
	Investigate and correct any issues preventing these repair verification cycles from being completed, then re-run. For additional assistance, contact the PACCAR Engine Support Center.
Go to step 3.B	**Go to step 3.B**

Step 3.B DAVIE Diagnostics, Quick Check	
Action 1. Use DAVIE Diagnostics to perform a Quick Check for current trouble codes to determine whether the actions taken have cleared this trouble code.	
Has U1406 been cleared?	
Yes	**No**
Problem resolved. No further actions.	Continue with the next step in this troubleshooting procedure. If all steps

<table>
<tr><td></td><td>
<table>
<tr><td></td><td>have been completed and this trouble code is still present, contact the PACCAR Engine Support Center for further assistance.</td></tr>
</table>

Contacting the PACCAR Engine Support Center
For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the PACCAR Engine Support Call Center.
</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

U1407

Code number	U1407
Fault code description	CAN communication - Message (ACC1) out of range, Adaptive Cruise Control set speed from Advanced Emergency Braking System
Fault code information	1-trip Check Engine lamp 3 drive cycle recovery Readiness group – None Freeze frame type – Crankcase
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	
Technical data	This DTC relates to a communication issue and not to a specific component.
Possible causes	• ACC RADAR Misalignment • Faulty wiring or related connection
Additional information	
Diagnostic Step-by-Step	 **The ignition should always be in the OFF position when connecting or disconnecting electrical components to reduce the likelihood of damage to the components.**  ▪ This troubleshooting procedure is based on the assumption that supply power and ground to the PMCI are functioning properly. ▪ Disconnecting the PMCI connectors during the troubleshooting process will result in multiple errors. ▪ Specific electrical component information and pin out locations are provided in this procedure as a reference only. Always refer to the technical data sections in Rapido for the most up-to-date changes. ▪ It is necessary to use DAVIE to clear all current trouble codes from the PCI and EAS-3 ECUs, and then run the Quick Check to identify a change in fault status. ▪ This DTC can be set as a result of multiple failure modes. For proper fault isolation, complete all troubleshooting steps in the sequence

provided.

Step 1. Investigate Related Trouble Codes

Before troubleshooting this code, take notice of any other active or inactive trouble codes. One or multiple other codes could have been the cause for this code.

Step 1.A Investigate related trouble codes	
Action 1. Use DAVIE Diagnostics to perform a Quick Check for current trouble codes.	
Are these or any other related codes active? P0567; P0568; P1062; P1122; U1184; U180B; U181F; U1820	
Yes	**No**
Refer to the troubleshooting information for these codes before continuing with this procedure.	
	Go to step 2.A

Step 2. Radar Alignment Checks

Step 2.A Special procedure, Wingman (Bendix) or OnGuard (Meritor-Wabco) RADAR alignment	
Action 1. Check Wingman (Bendix) or OnGuard (Meritor-Wabco) RADAR alignment using the procedure provided by the RADAR system's manufacturer.	
Was the RADAR found to be out of alignment?	
Yes	**No**
Re-align the RADAR using the associated procedure and tools from the system manufacturer. Use the corresponding tool to verify alignment: A-COM tool (Bendix Wingman) or Toolbox (Meritor-Wabco OnGuard). Refer to Step 3.A to perform the corresponding repair verification cycles	

and rechecks.	
If this code is still present after completing RADAR alignment, contact the PACCAR Engine Support Center for additional assistance.	**Contact the PACCAR Engine Support Center for additional assistance.**

Step 3. Repair Verification

Step 3.A Repair verification cycles	
Perform these repair verification cycles following any corrective actions taken, to enable related OBD monitors to reach a readiness state associated with the trouble code or system being investigated.  Before beginning these repair verification cycles, use the DAVIE Diagnostics, Quick Check function to clear all current DTCs from the PCI and EAS-3 ECUs.	
Action 1. Test Drive – 25 miles Drive the truck under normal conditions for distance of approximately 25 miles while running the autoadaptive cruise control.	
Were the identified repair verification cycles able to be completed?	
Yes	**No**
	Investigate and correct any issues preventing these repair verification cycles from being completed, then re-run. For additional assistance, contact the PACCAR Engine Support Center.
Go to step 3.B	**Go to step 3.B**

Step 3.B DAVIE Diagnostics, Quick Check	
Action 1. Use DAVIE Diagnostics to perform a Quick Check for current trouble codes to determine whether the actions taken have cleared this trouble code.	
Has U1407 been cleared?	
Yes	**No**

	Problem resolved. No further actions.	Continue with the next step in this troubleshooting procedure. If all steps have been completed and this trouble code is still present, contact the PACCAR Engine Support Center for further assistance.

Contacting the PACCAR Engine Support Center

For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the PACCAR Engine Support Call Center.

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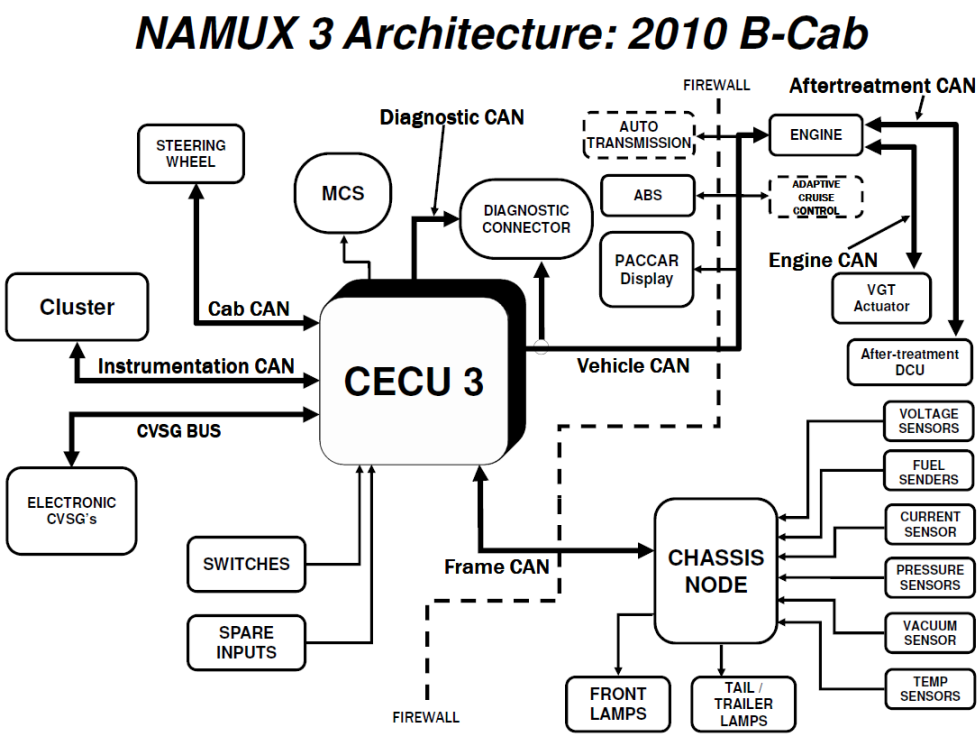
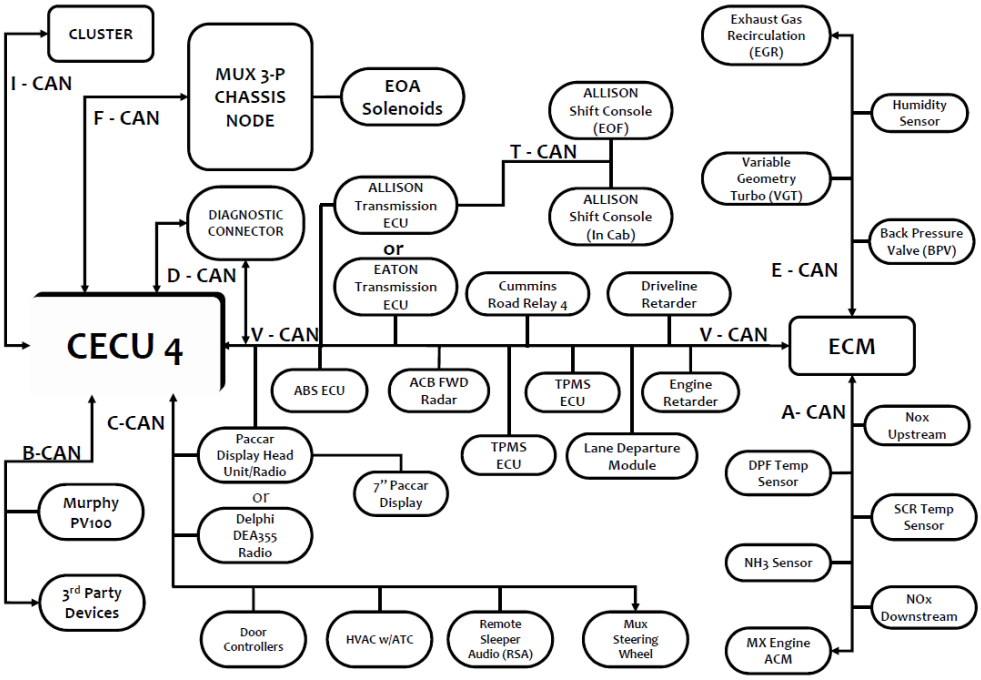
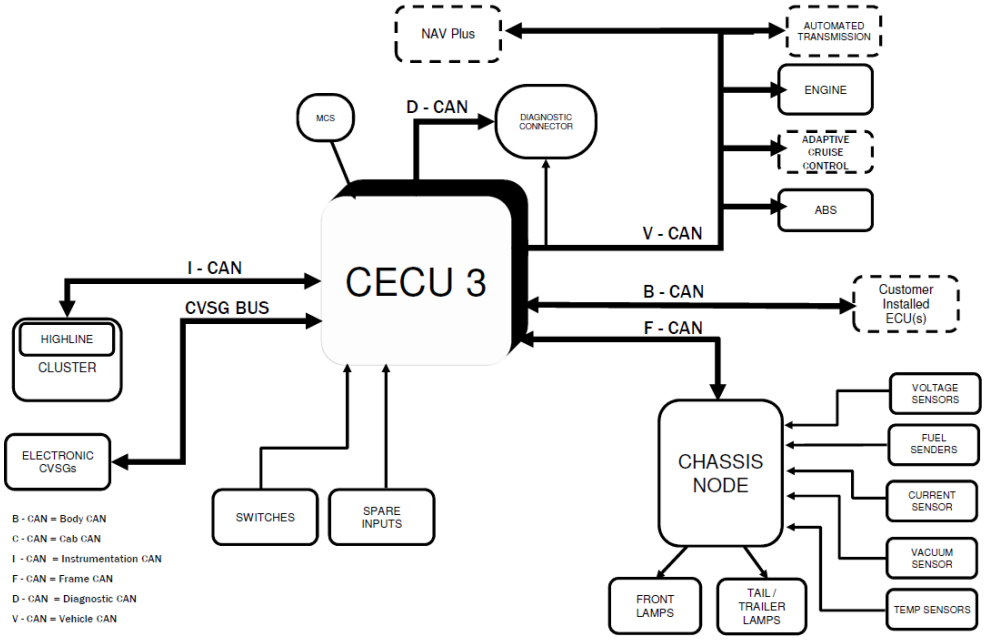
U1408

Code number	U1408
Fault code description	VTG turbocharger actuator status - Data erratic, intermittent or incorrect
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	The PCI ECU (D420) receives a CAN message from the VTG turbocharger actuator (L037) that contains an out-of-range value for the actuator status.
Reset condition of fault code	This DTC changes to inactive after the ignition is keyed off for at least 15 seconds, keyed on again, and the fault is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



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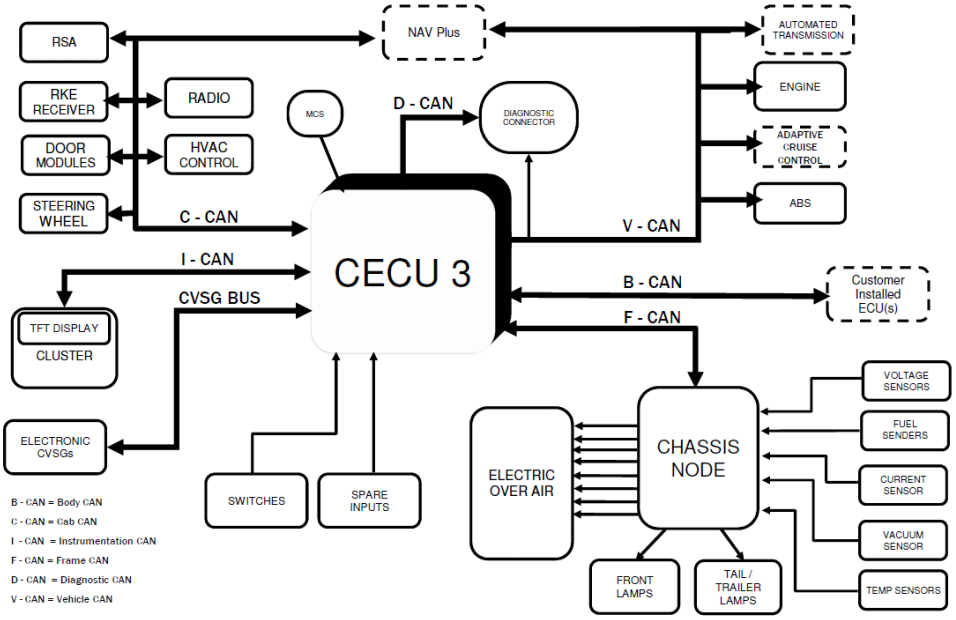
NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- E-CAN communication
- Faulty VTG turbocharger actuator

</td></tr>
<tr><td>Additional information</td><td>The VTG turbocharger is controlled by the VTG turbocharger actuator, a smart actuator that communicates with the PCI ECU via E-CAN. The actuator ECU is controlled by the PCI ECU but has its own diagnostics.</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1408a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

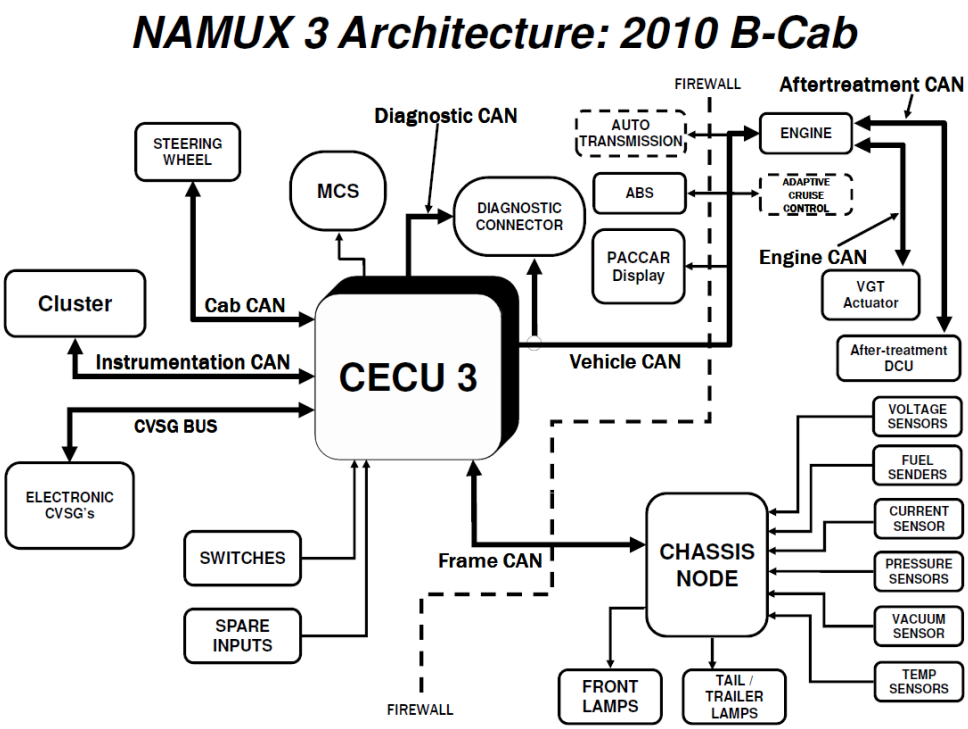
<table>
<tr><td></td><td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1408b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step 4</td></tr>
</table>

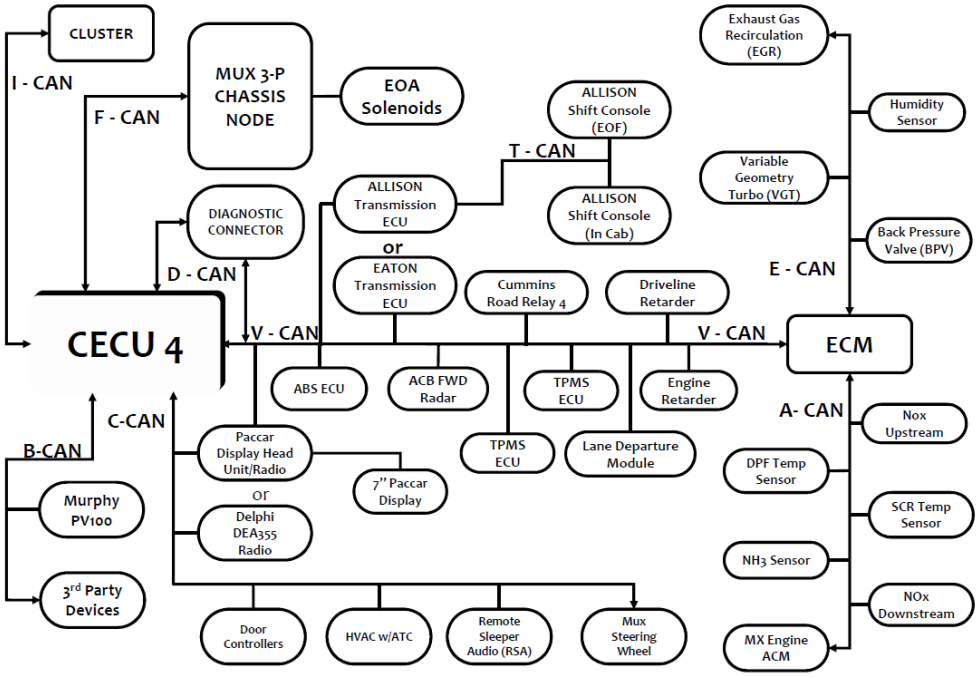
<table>
<tr><td>Step 3</td><td>Step ID 1408c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive: Issue resolved. Clear inactive fault</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 1408d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

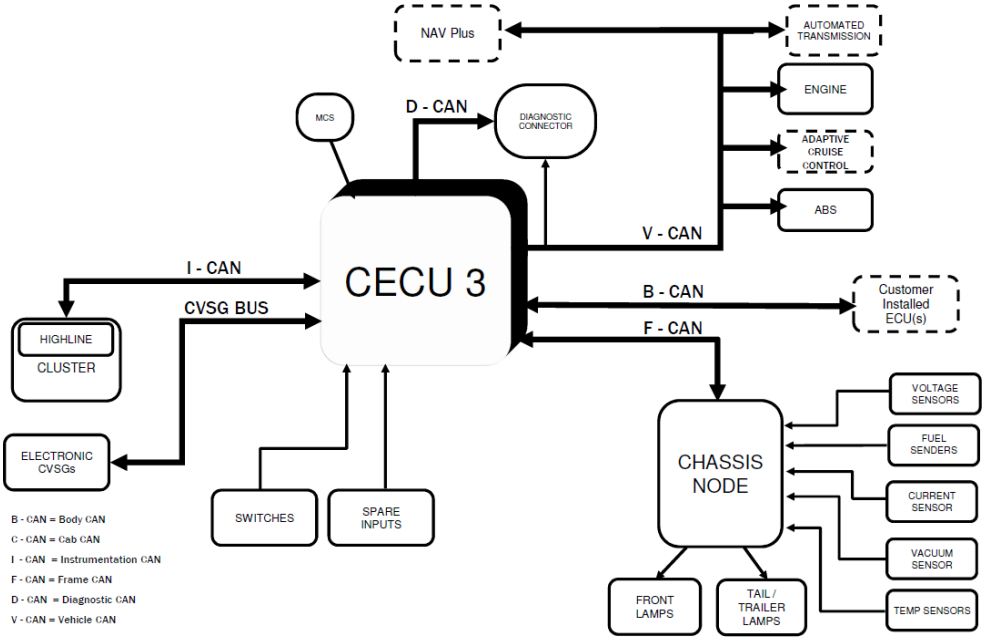
U1409

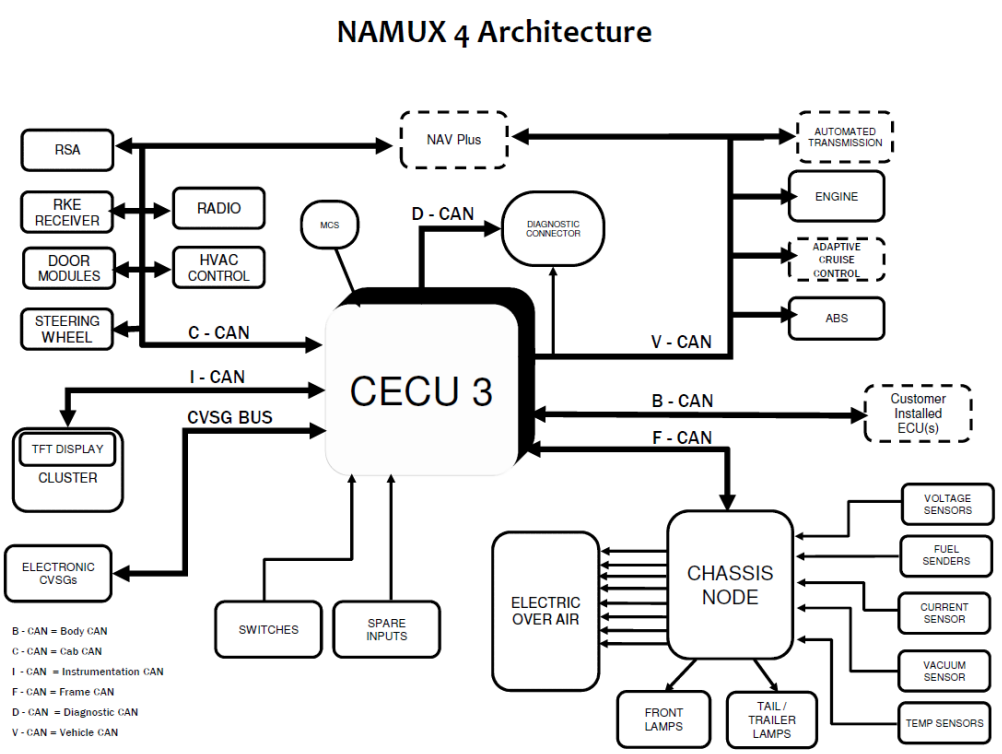
Code number	U1409
Fault code description	VTG turbo charger actuator state - Data erratic intermittent or incorrect
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	The PCI ECU (D420) receives a CAN message from the VTG turbocharger actuator (L037) that contains an out-of-range value for the actuator operating state.
Reset condition of fault code	This DTC changes to inactive after the ignition is keyed off for at least 15 seconds, keyed on again, and the fault is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• E-CAN communication • Faulty VTG turbocharger actuator
Additional information	The VTG turbocharger is controlled by the VTG turbocharger actuator, a smart actuator that communicates with the PCI ECU via E-CAN. The actuator ECU is controlled by the PCI ECU but has its own diagnostics.
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1409a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic		

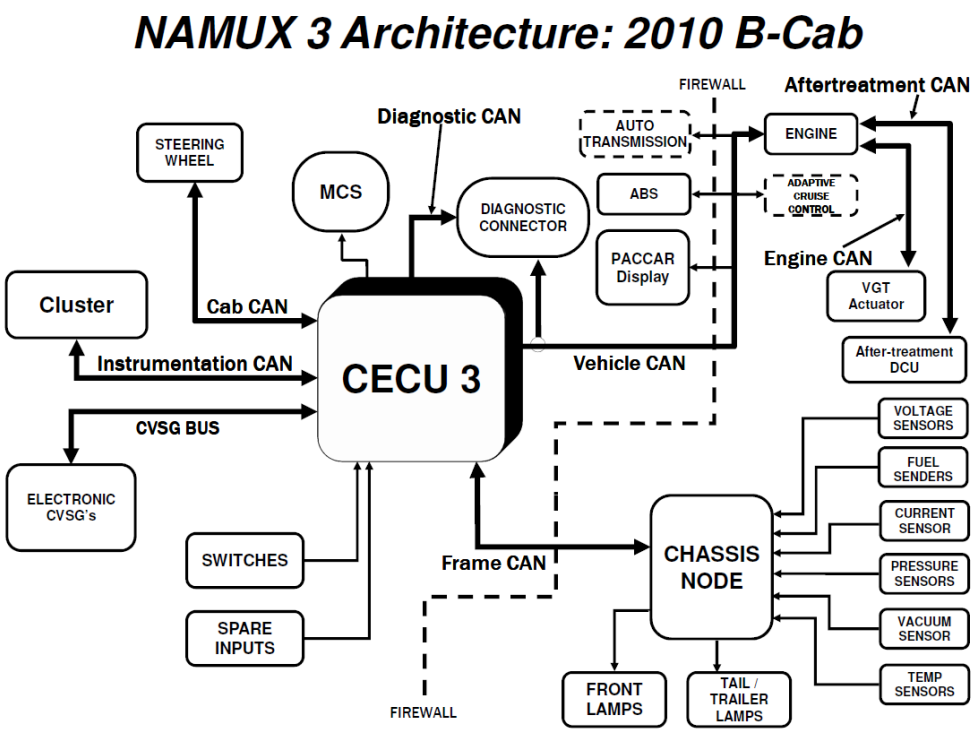
<table>
<tr><td></td><td>
procedure.
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1409b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step 4</td></tr>
</table>

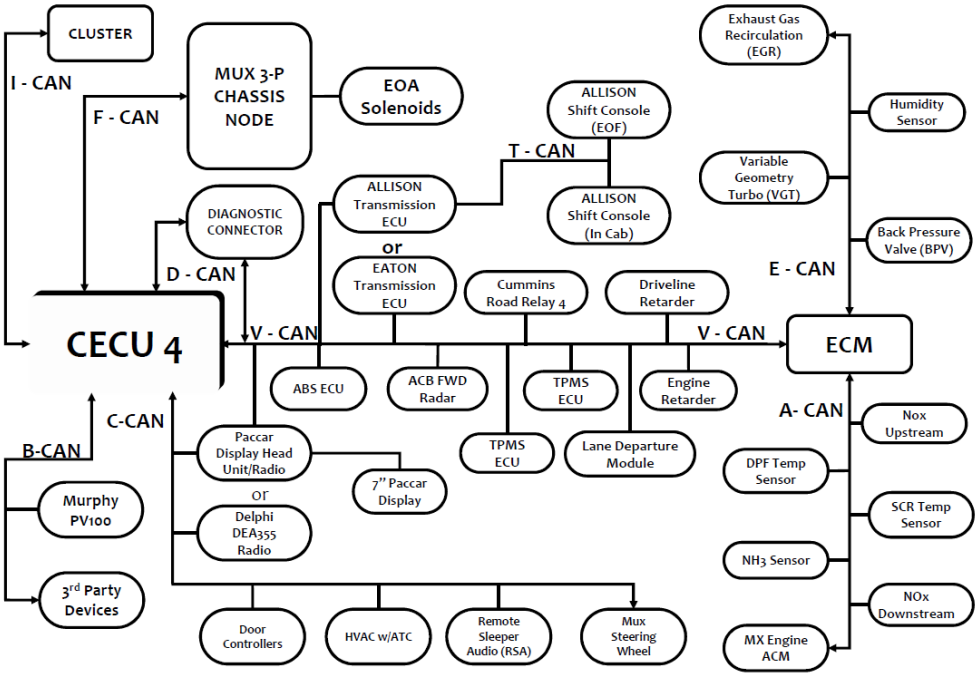
<table>
<tr><td>Step 3</td><td>Step ID 1409c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive: Issue resolved. Clear inactive fault</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 1409d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

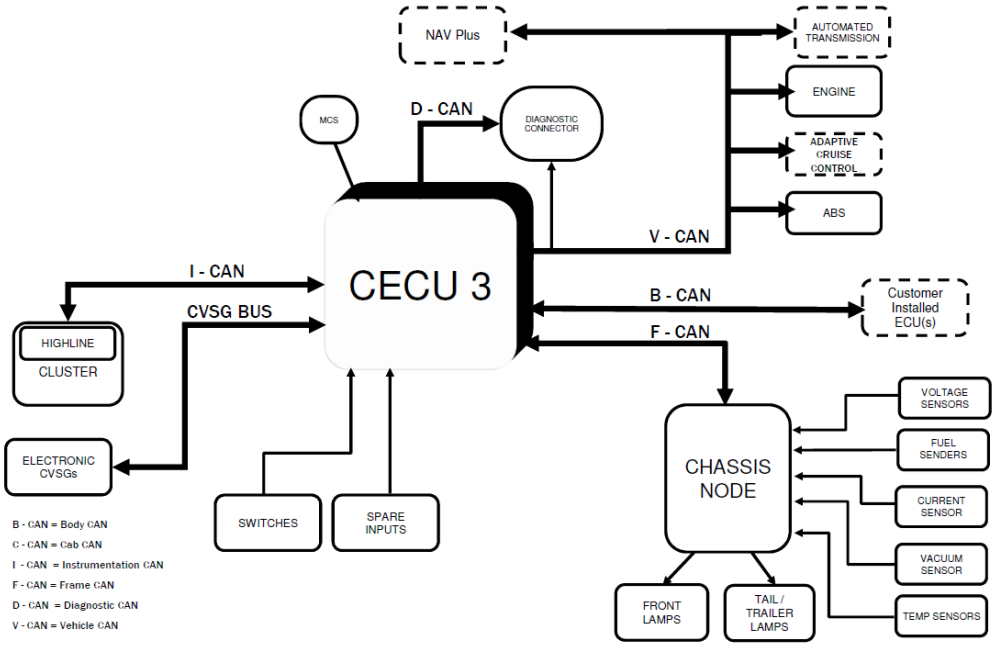
U140A

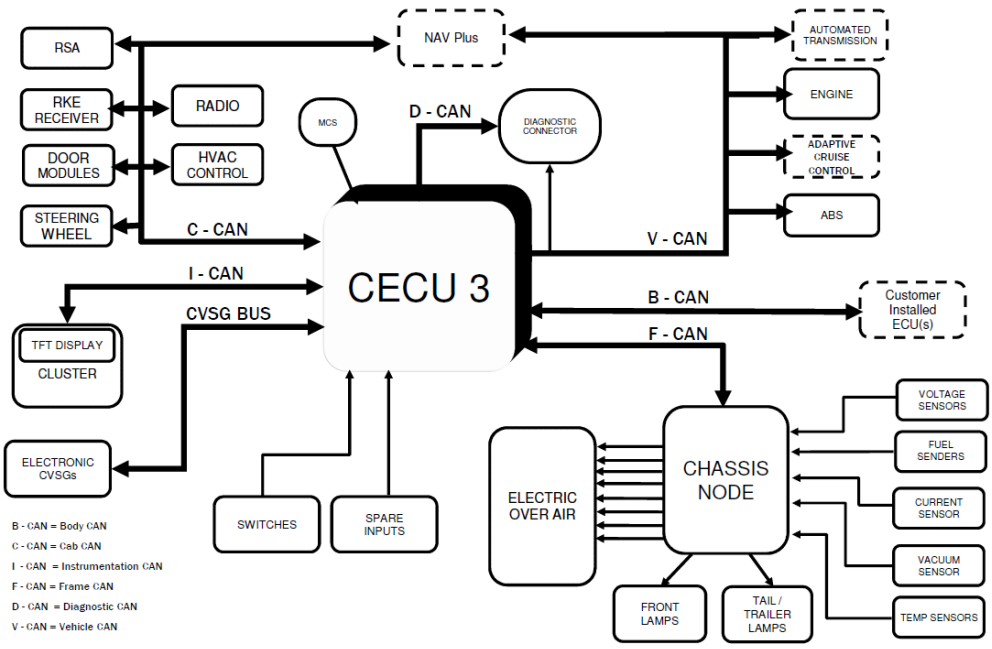
Code number	U140A
Fault code description	VTG turbocharger actuator effort - Data erratic intermittent or incorrect
Fault code information	2 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	The PCI ECU (D420) receives a CAN message from the VTG turbocharger actuator (L037) that contains an out-of-range value for the actuator effort.
Reset condition of fault code	This DTC changes to inactive after the ignition is keyed off for at least 15 seconds, keyed on again, and the fault is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• E-CAN communication • Faulty VTG turbocharger actuator
Additional information	• The VTG turbocharger is controlled by the VTG turbocharger actuator, a smart actuator that communicates with the PCI ECU via E-CAN. The actuator ECU is controlled by the PCI ECU but has its own diagnostics. • The actuator provides feedback to the PCI ECU about the effort to move the nozzle ring.
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 140A-a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU.		

<table>
<tr><td></td><td>
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.

Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 140A-b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component

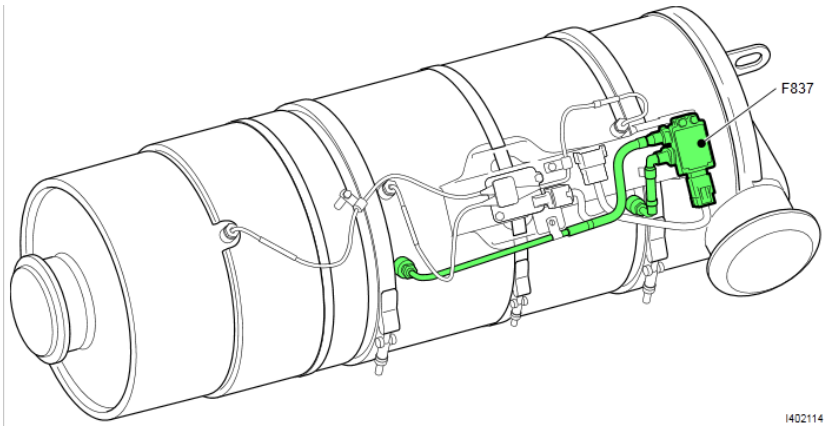
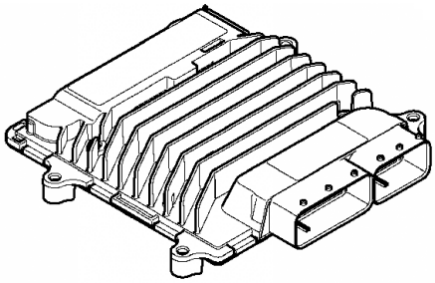
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

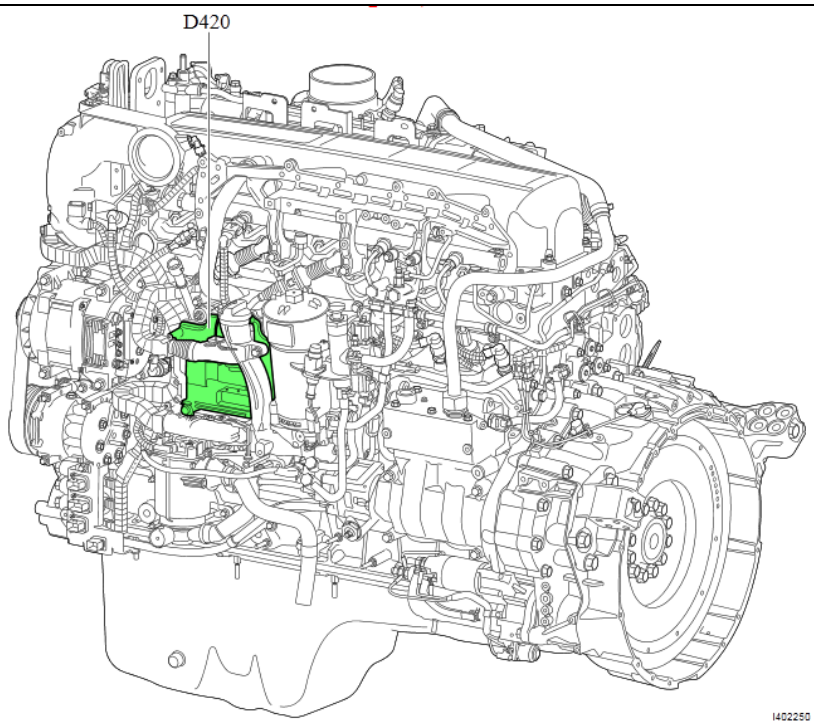
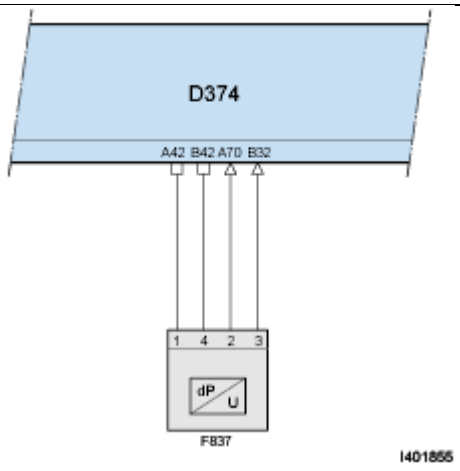
<table>
<tr><td>Step 3</td><td>Step ID 140A-c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key

Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive: Issue resolved. Clear inactive fault.</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 140A-d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

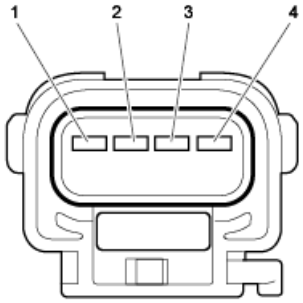
U142F

Code number	U142F
Fault code description	CAN communication - Message (ACM_to_Eng) out of range - Estimated pre DOC pressure from emission system.
Fault code information	# trip MIL – N/A Freeze frame type – Crankcase 3 drive cycle recovery Readiness group - None
Description of component(s)	This code relates to a communication issue dealing with the signal from the DPF pressure sensor (F837) to the EAS-3 ECU to the engine PCI (D420).
Location of component(s)	 **F837**  **EAS-3 ECU**

	 **Engine PCI D420 Connector**
Diagnostic condition	This diagnostic consists of two parts: • This diagnostic runs continuously when the ignition is initially keyed on. • This diagnostic runs when the engine is running.
Set condition of fault code	The EAS-3 ECU to eng Prop B message is received every 200ms. If more than 25 messages are received with the pre DOC pressure above 251.99 kPa (35.55psi), then the fault sets.
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	 D374 EAS-3 ECU

F837 DPF pressure sensor

D374	F837	Function
A42	1	Ground
A70	2	Signal, delta pressure over DPF
B32	3	Signal pressure after DPF
B42	4	Supply



Wiring harness connector F837 front view

Handle connectors and pins with care and use matching measuring probes.

Technical data

Component check, DPF pressure sensor (F837)

Preparation

- Disconnect connector F837
- Set the ignition key to ON
- Measure on component connector F837

Pin (+ probe)	Pin (- probe)	Value	Additional information
1	Battery negative pole	< 0.5V	Switch all consumers on
4	1	4.75 – 5.25V	

Possible causes

- Breakdown in communication of the CAN network

<table>
<tr><td></td><td>

Open circuit, short circuit to ground, or short circuit to supply in the CAN network wiring.
Open circuit, short circuit to ground for the DPF pressure sensor (F837)

</td></tr>
<tr><td>Additional information</td><td>This is a low level CAN fault that is checking whether the message from the ACM is within a specified range.</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

The ignition should always be in the OFF position when connecting or disconnecting electrical components to reduce the likelihood of damage to the components.


This troubleshooting procedure is based on the assumption that supply power and ground to the PMCI are functioning properly.
Disconnecting the PMCI connectors during the troubleshooting process will result in multiple errors.
For specific electrical component information and pin out locations, always refer to the technical data in Rapido.
It is necessary to exit the 'Active errors' screen in DAVIE and run the diagnostic test again to identify a change in errors.
This DTC can be set as a result of multiple failure modes. For proper fault isolation, complete all troubleshooting steps in the sequence provided.

Step 1. Investigate Related Trouble Codes
Before troubleshooting this code, take notice of any other current codes. One or multiple other codes could have been the cause for this code.
<table>
<tr><td>Step U142F_1.A</td><td>Investigate related trouble codes</td><td>SRT:</td></tr>
<tr><td colspan="3">Are these or any other related trouble codes present?
P3770, P3766, P3767, P3768, P3769

Yes Refer to the troubleshooting information for these codes before continuing with this procedure.
No Step 2.A</td></tr>
</table>
Step 2. Step 2. DOC Pressure Sensor (F837) Checks
<table>
<tr><td>Step U142F_2.A</td><td>Visual Inspection: DOC pressure sensor (F837)</td><td>SRT:</td></tr>
<tr><td colspan="3">Visually inspect the associated component connections and wiring for any of the following:
▪ Damaged or loose connectors</td></tr>
</table>
</td></tr>
</table>

- ECU connections are damaged or disconnected
- Bent, broken, corroded or loose connector pins
- Moisture or dirt in the connections
- Missing or damaged connector seals
- Damaged connector locking tabs
- Damage to the wire harness or insulation
- DOC pressure sensor damaged or not installed properly
- Low battery supply voltage or loose contacts

Was there evidence of any of the above?

Yes Correct any issues found. If the DOC pressure sensor (F837) is found to be damaged or broken, replace it.
Refer to Step 3.A to perform the corresponding repair verification cycles.
Use DAVIE Diagnostics to perform a Quick Check for current trouble codes.
If this code is still active, proceed to Step 2.B

No Step 2.B

Step U142F_2.B	Electrical Checks: DOC pressure sensor (F837)	SRT:

Refer to the corresponding Checking Data in Engine Service – Rapido for associated supply and signal voltages, resistance values, and related connector pin test points.

2.B.1 Supply and signal voltages

- Set the ignition key to OFF.
- Disconnect the harness connector from the DOC pressure sensor (F837).
- Set the ignition key to ON.

Measure the DOC pressure sensor supply and signal voltages across the appropriate connector pins.

Are measured values within expected range?

Yes Step 4.A

No Correct any issues found, or replace the sensor if measured values indicate a sensor error.
Refer to Step 3.A to perform the corresponding repair verification cycles.
Use DAVIE Diagnostics to perform a Quick Check for current trouble codes.
If this code is still active, proceed to Step 4.A

Step 3. Repair Verification Cycles

Perform these repair verification cycles following any corrective actions

taken, to confirm that this trouble code is no longer present.

Step U142F_3.A	Repair Verification Cycle: Start-up	SRT:
With the brakes set, start the engine and allow it to run at idle for 2 minutes.		

Step 4. Contact PACCAR Engine Support Center

Step U142F_4.A	Contact PACCAR Engine Support Center	SRT:
For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the PACCAR Engine Support Call Center at 1-800-477-0251.		

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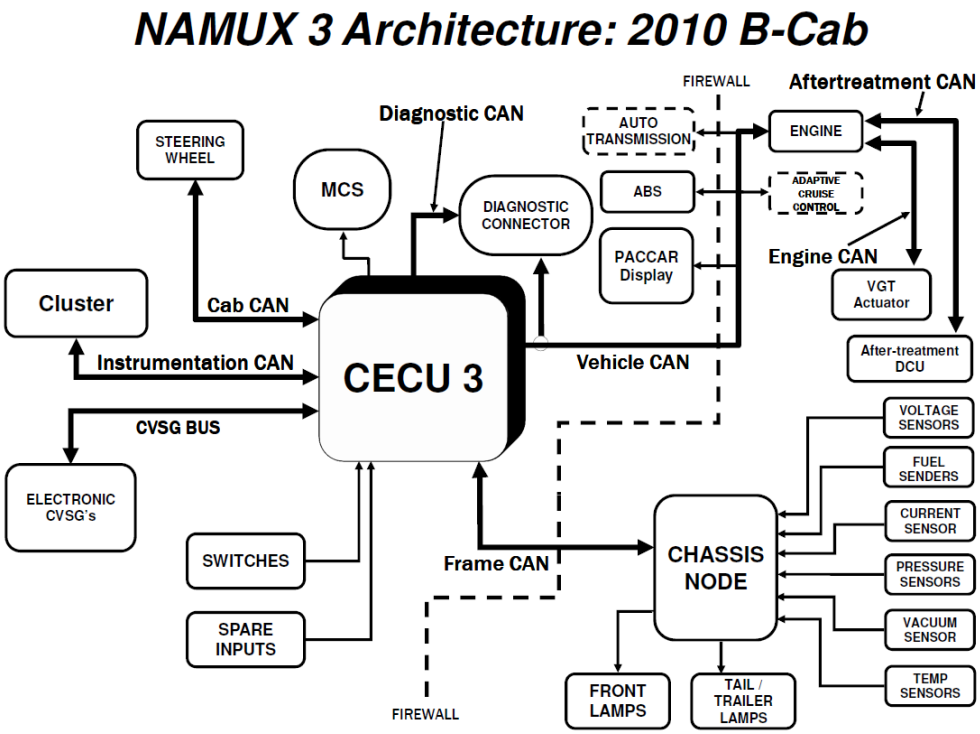
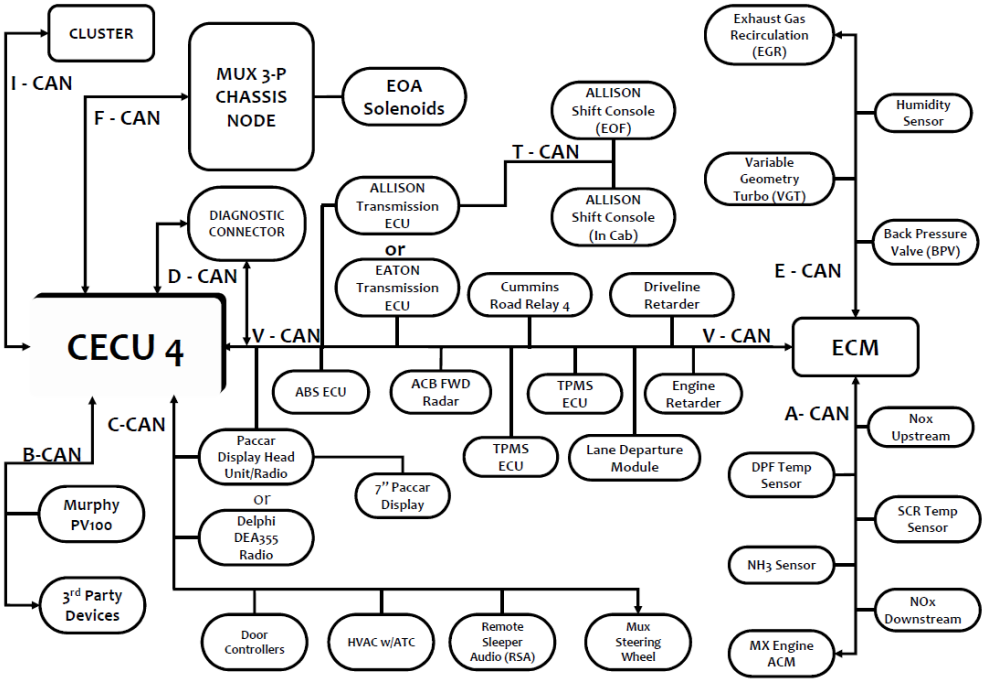
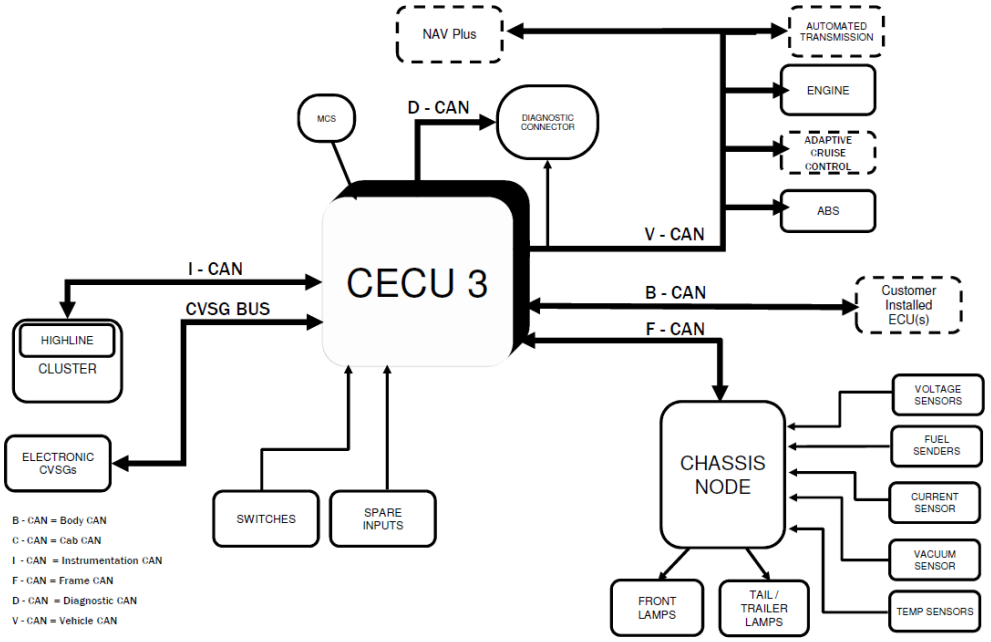
U1501

Code number	U1501
Fault code description	CAN communication - Message (TCO1) out of range - output shaft speed from tachograph
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Empty
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



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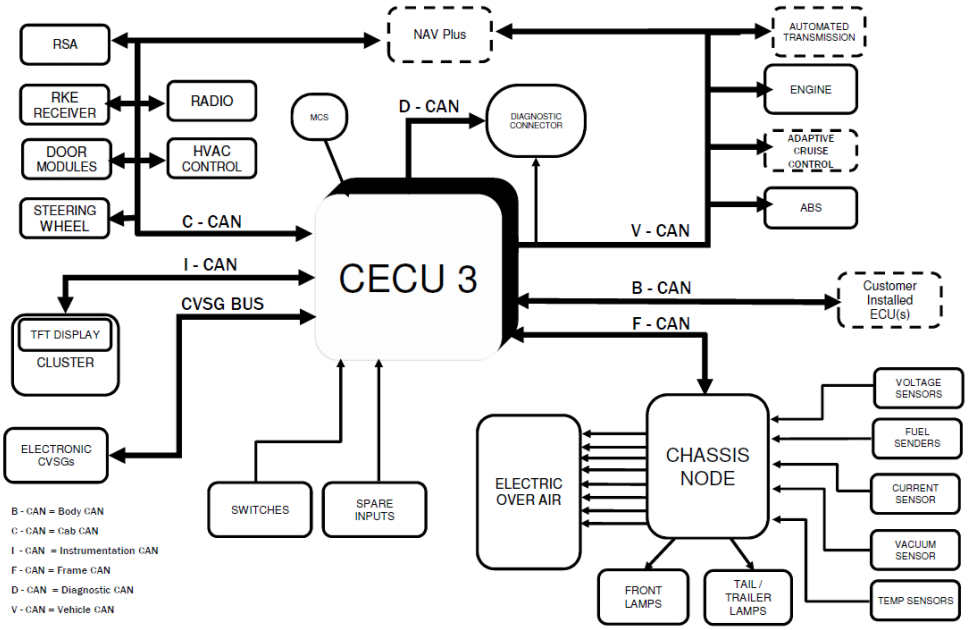
NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1501a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

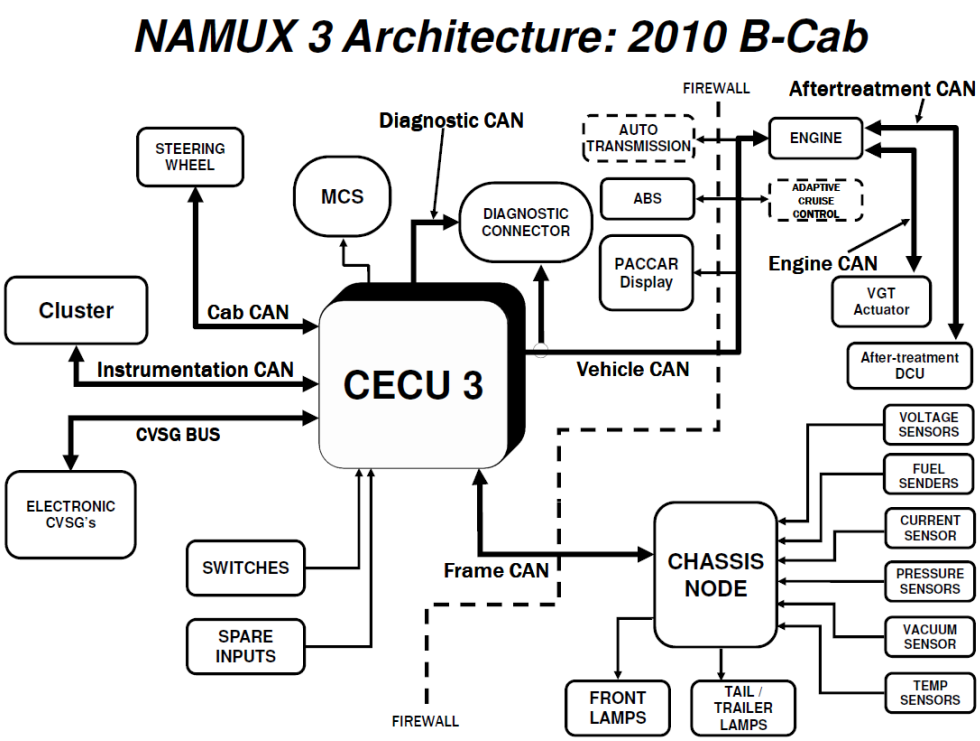
<table>
<tr><td></td><td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1501b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

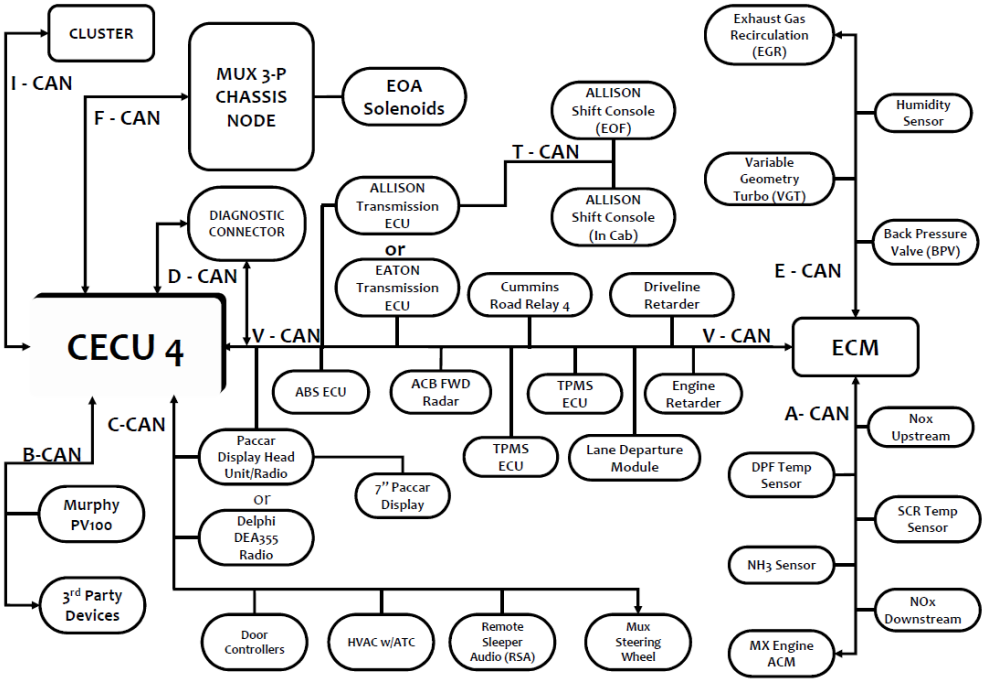
<table>
<tr><td>Step 3</td><td>Step ID 1501c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive: Issue resolved. Clear inactive fault.</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 1501d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To verify the repair:
With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics
With the brakes set, start the engine and allow it to run at idle for 2 minutes</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

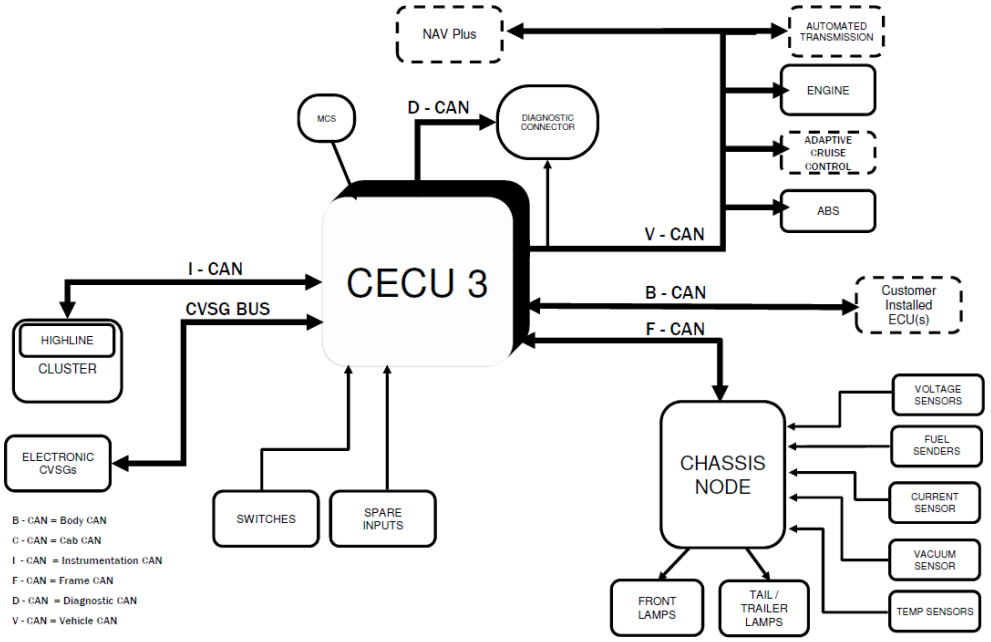
U1502

Code number	U1502
Fault code description	CAN communication - Message (TCO1) out of range - vehicle speed from tachograph
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Empty
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680

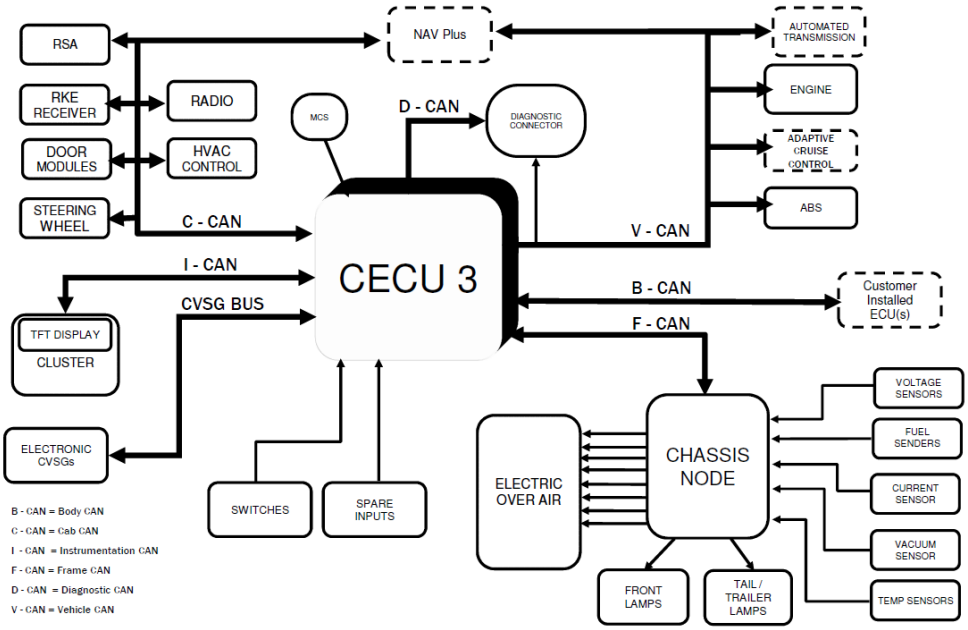


NAMUX 3 Architecture



<table>
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Interruption, short circuit to ground, or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1502a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

Was there evidence of any of the above?
- No: Proceed to step 2.
- Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.
- If this related fault is no longer active, then this issue has been resolved.
- If this related fault is still active, Proceed to step 2

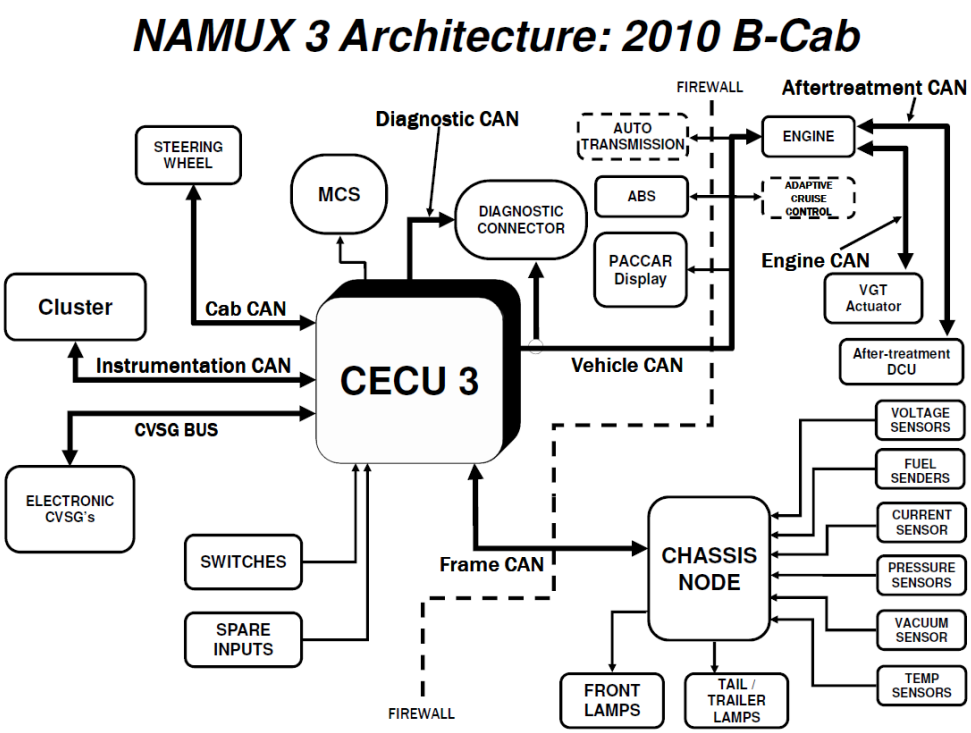
Step 2	Step ID 1502b	SRT
Data check • Lookup the technical data of the specific system • Perform the checking data test of the specific component Is test pass? • No: Proceed to step 3 • Yes : Proceed to step4		

Step 3	Step ID 1502c	SRT
Repair or replace component • Repair or replace the component, also check for electrical connection and wiring harness. • Reconnect the connector • ON the ignition key Use DAVIE to re-check for the presence of active faults: • Is DTC fault active: Proceed to step 4 • Is DTC fault inactive: Issue resolved. Clear inactive fault.		

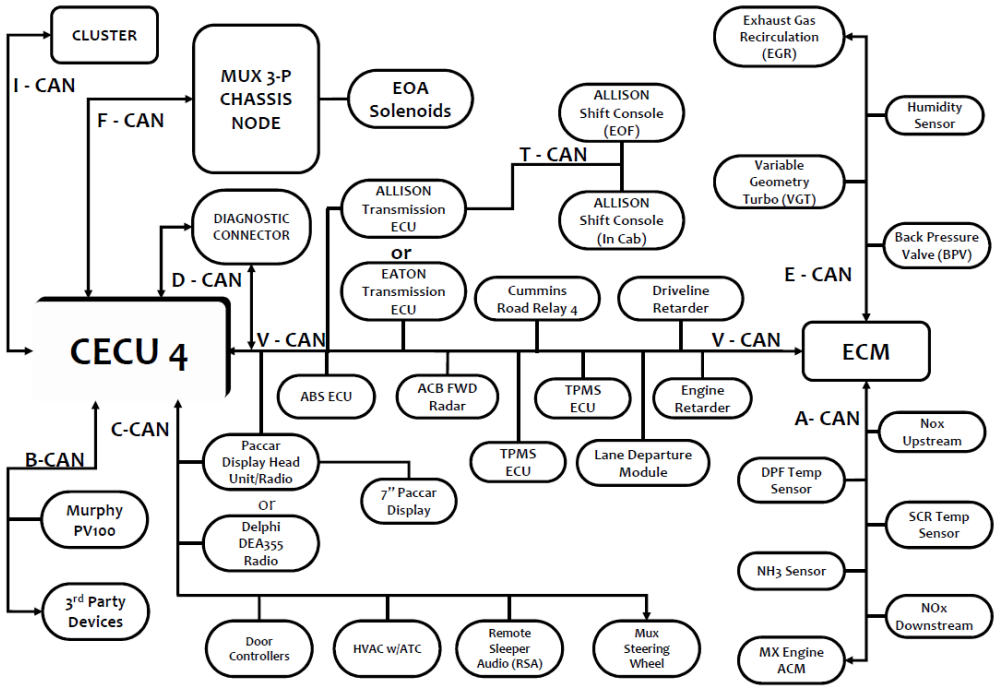
Step 4	Step ID 1502d	SRT
For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.		

Verification Drive Cycle	To verify the repair: With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics With the brakes set, start the engine and allow it to run at idle for 2 minutes
	Back to Index

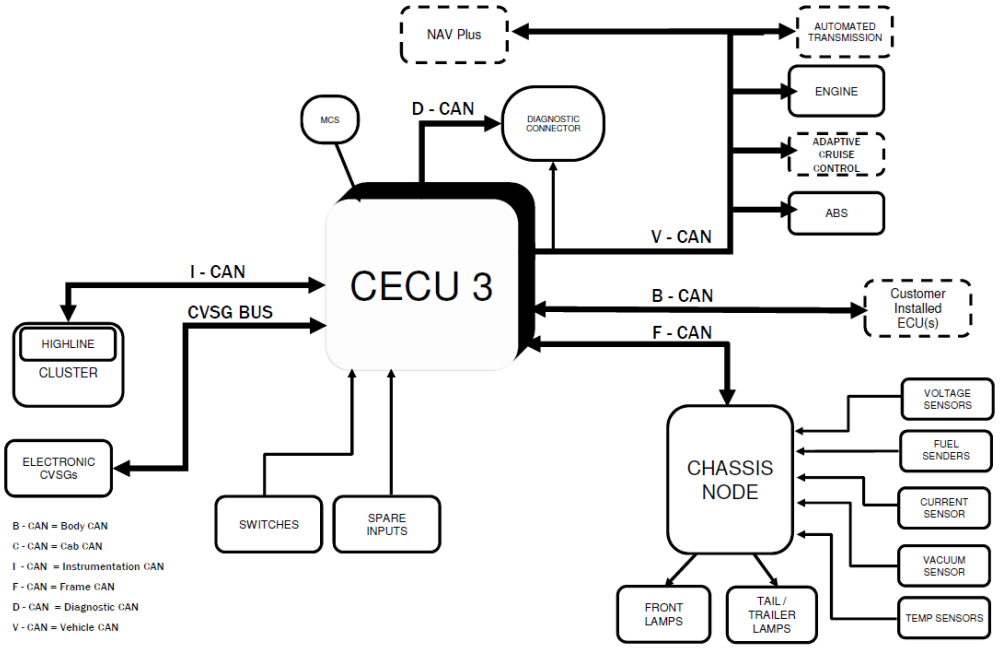
U153B

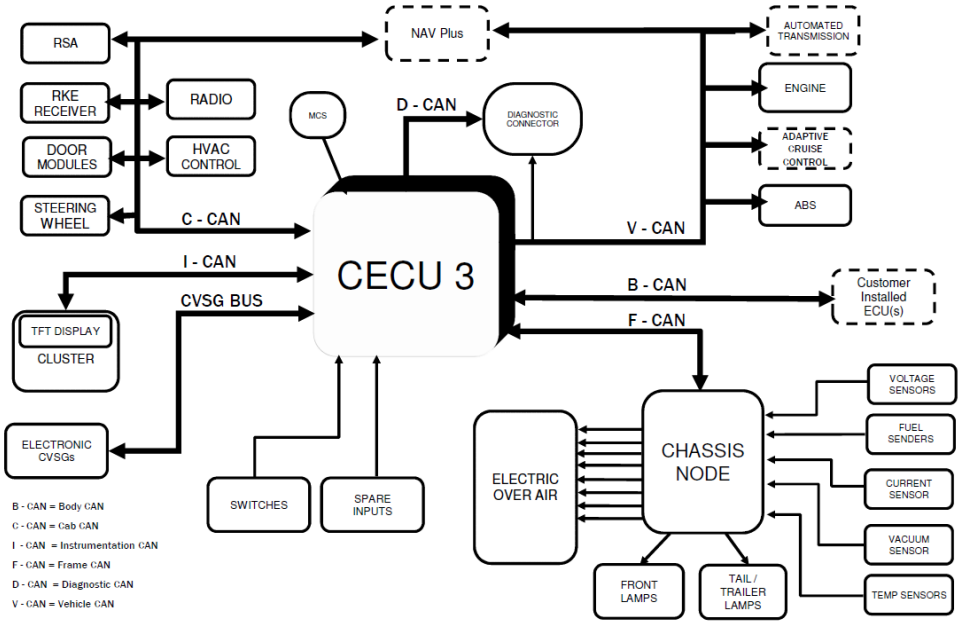
Code number	U153B
Fault code description	CAN communication - Message (PTO) out of range - Engine PTO resume switch
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	Check cabin ECU for faults
Additional information	No additional information available

Diagnostic Step-by-Step

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 153Ba	SRT

Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.
Was there evidence of any of the above?

- No: Proceed to step 2.
- Yes: Make the appropriate repairs or component replacements.

<table>
<tr><td></td><td>
Use DAVIE to re-check for the presence of active faults.

If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 153Bb</td><td>SRT</td></tr>
<tr><td colspan="3">Data check

Lookup the technical data of the specific system
Perform the checking data test of the specific component

Is test pass?

No: Proceed to step 3
Yes : Proceed to step4

</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 153Bc</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component

Repair or replace the component, also check for electrical connection and wiring harness .
Reconnect the connector
ON the ignition key

Use DAVIE to re-check for the presence of active faults:

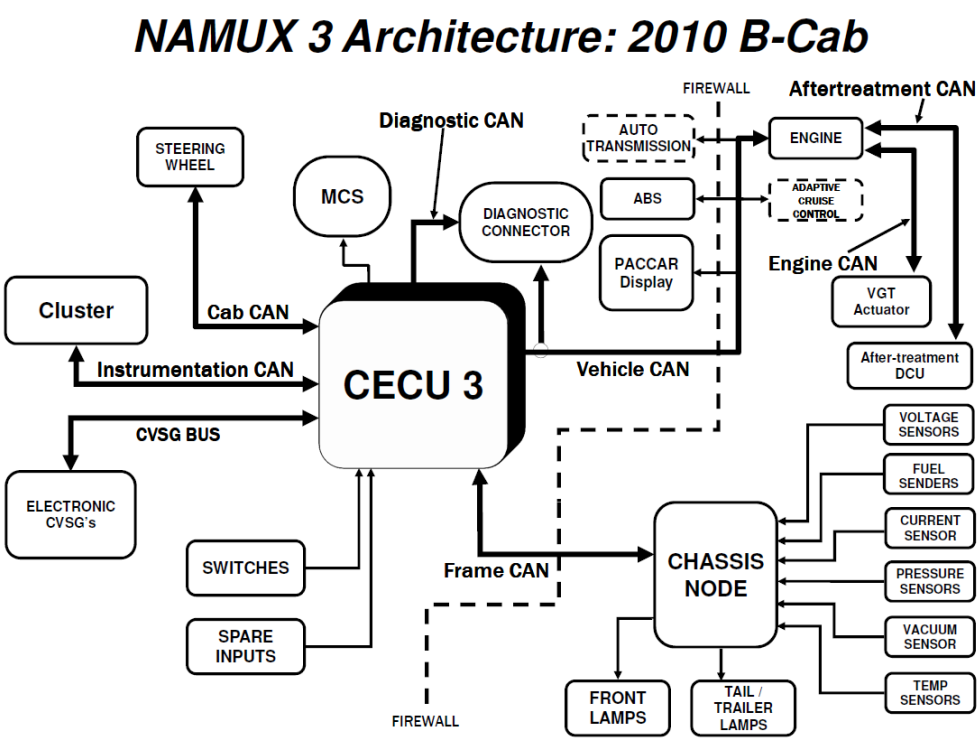
Is DTC fault active: Proceed to step 4
Is DTC fault inactive : Issue resolved. Clear inactive fault.

</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 153Bd</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair:

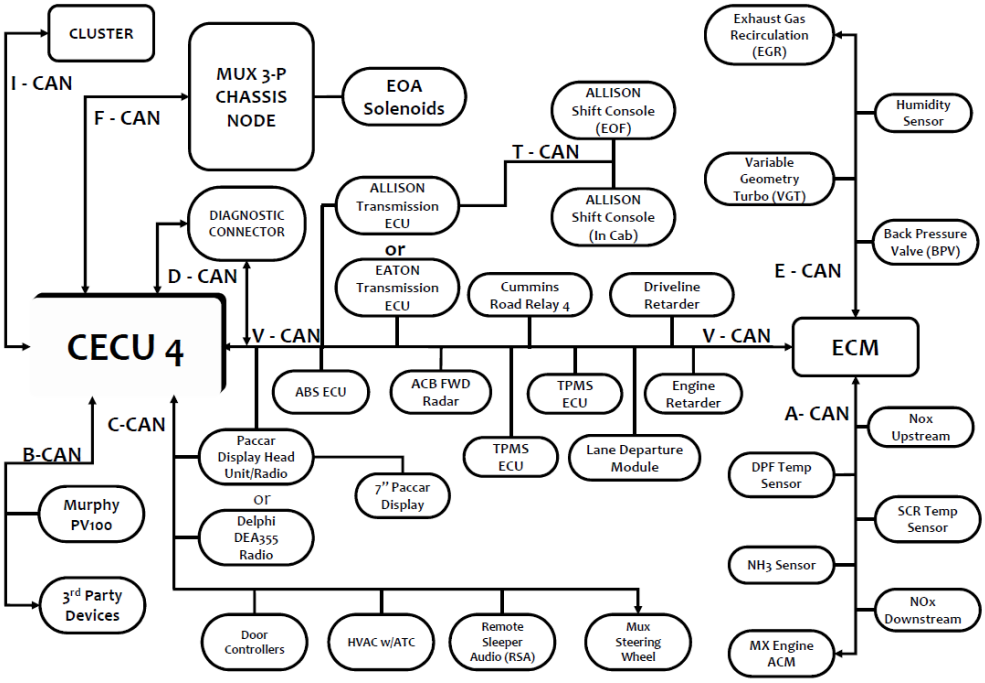
With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics.
With the brakes set, start the engine and allow it to run at idle for 2 minutes.

</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

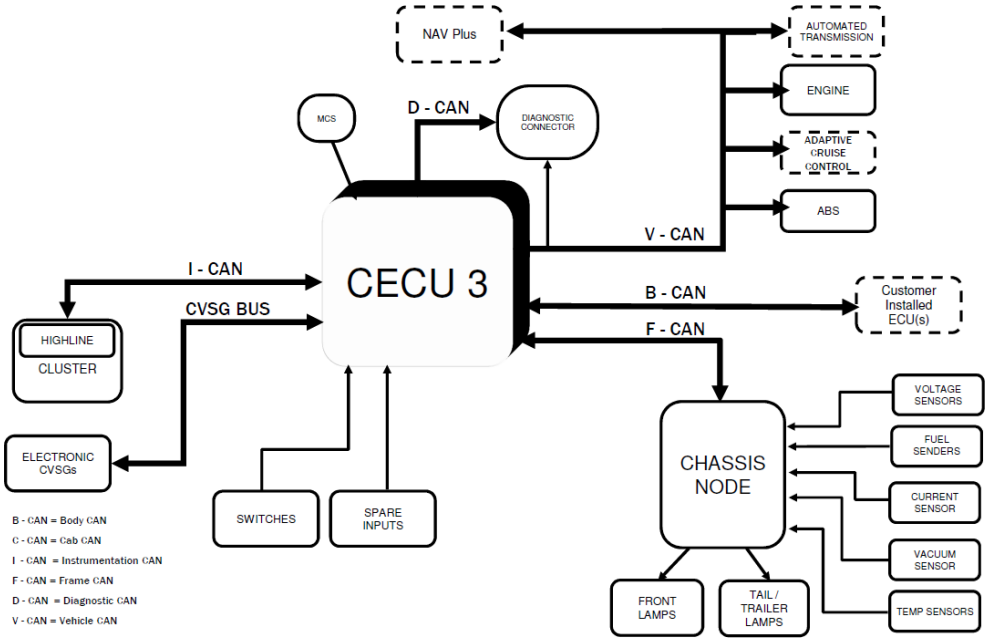
U1544

Code number	U1544
Fault code description	CAN communication - Message (ERC1_DR) out of range - Retarder torque actual percentage from transmission
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680

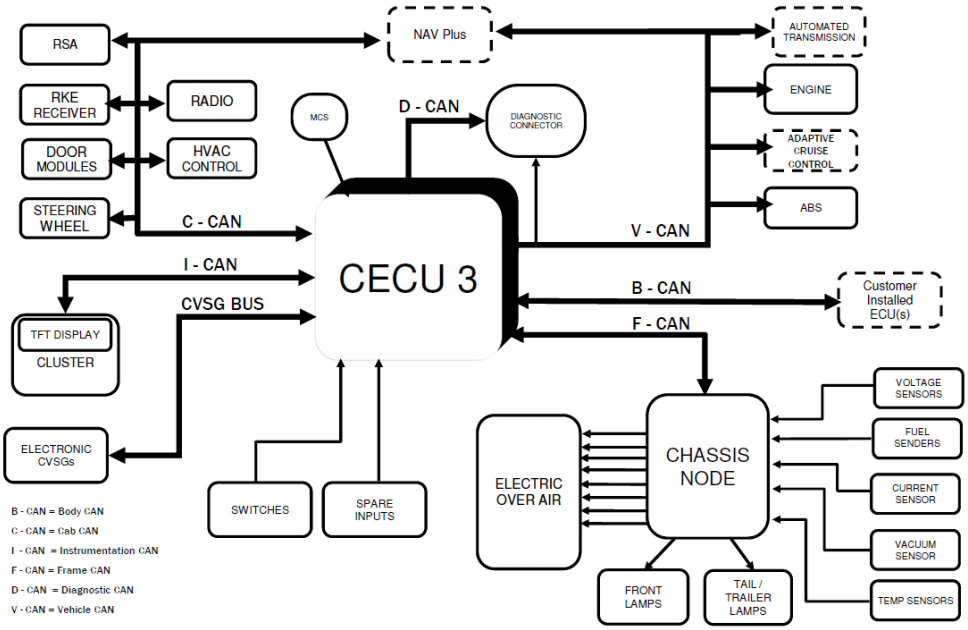


NAMUX 3 Architecture



<table>
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>Check driveline retarder ECU for faults</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

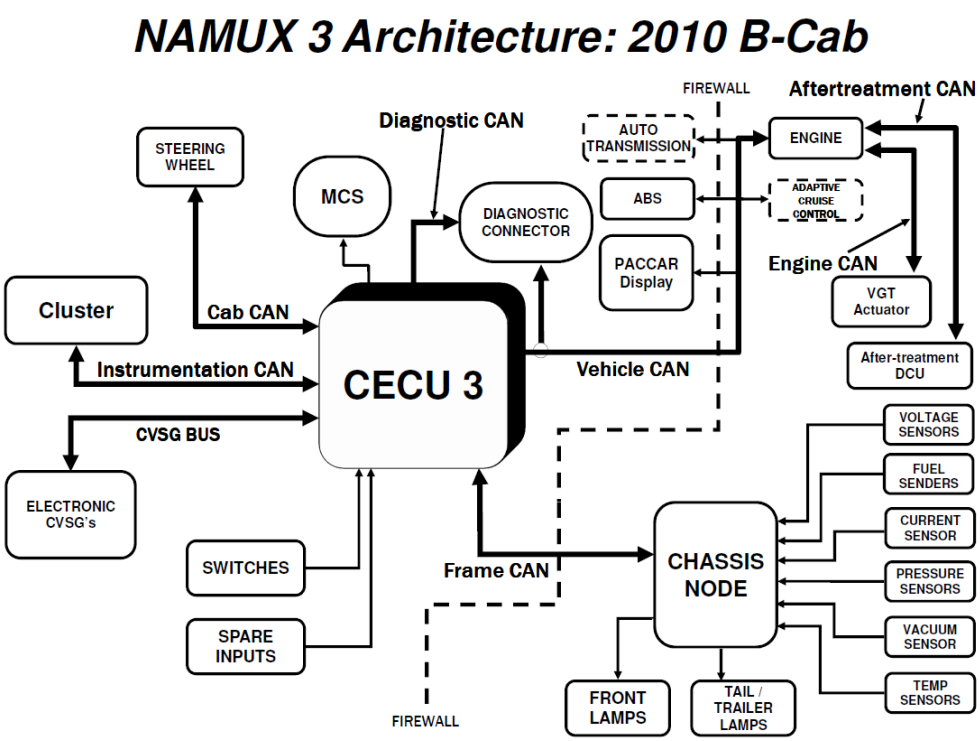
- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1544a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.
Was there evidence of any of the above?
• No: Proceed to step 2.</td></tr>
</table>

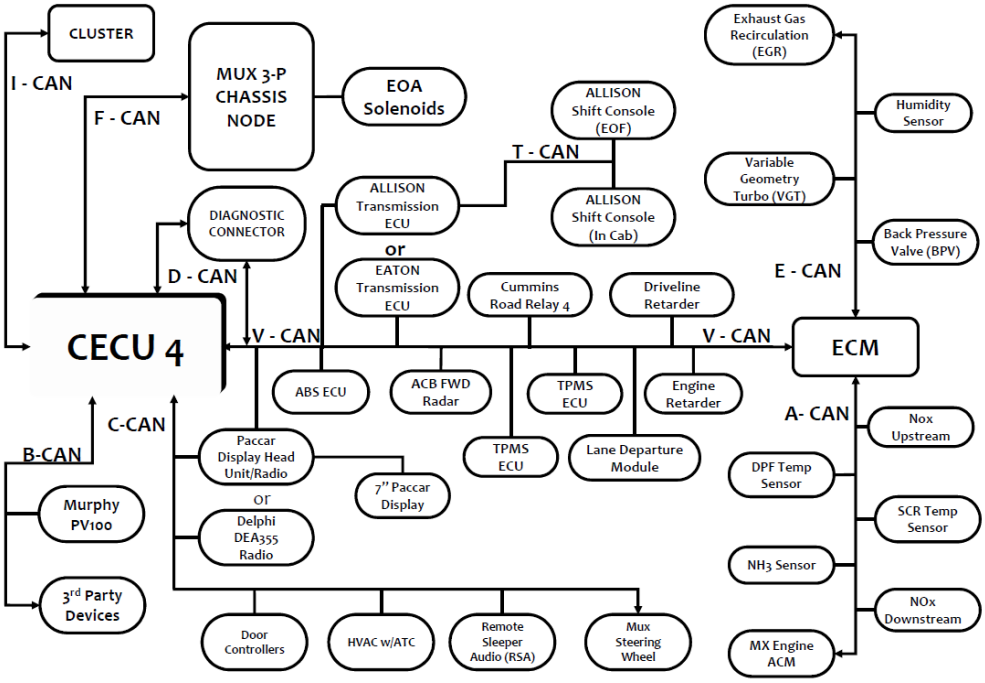
</td></tr>
</table>

<table>
<tr><td></td><td>
Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2
<table>
<tr><td>Step 2</td><td>Step ID 1544b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
Lookup the technical data of the specific system
Perform the checking data test of the specific component
Is test pass?
No: Proceed to step 3
Yes : Proceed to step4</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1544c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
Repair or replace the component, also check for electrical connection and wiring harness .
Reconnect the connector
ON the ignition key
Use DAVIE to re-check for the presence of active faults:
Is DTC fault active: Proceed to step 4
Is DTC fault inactive : Issue resolved. Clear inactive fault.</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1544d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

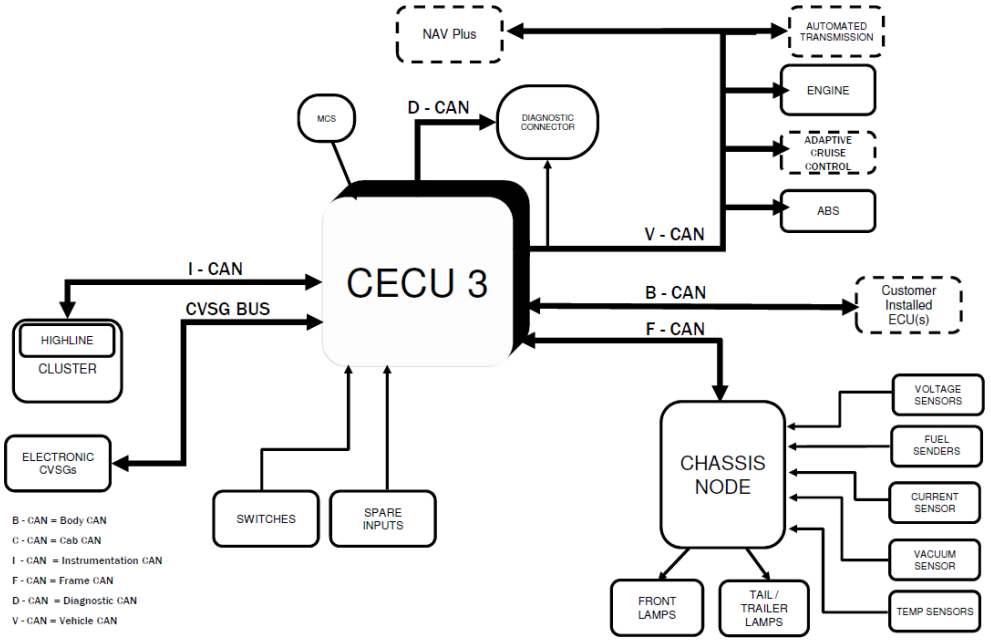
U1545

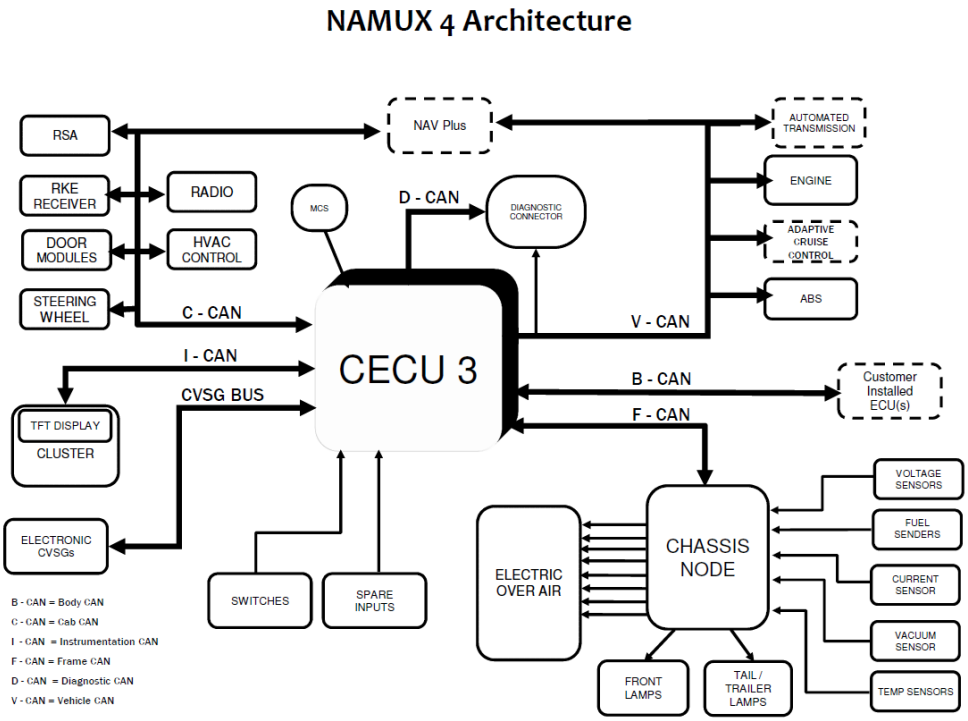
Code number	U1545
Fault code description	CAN communication - Message (ERC1_DR) out of range - Driver's demand retarder percentage torque from retarder
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	Check driveline retarder ECU for faults
Additional information	No additional information available

Diagnostic Step-by-Step

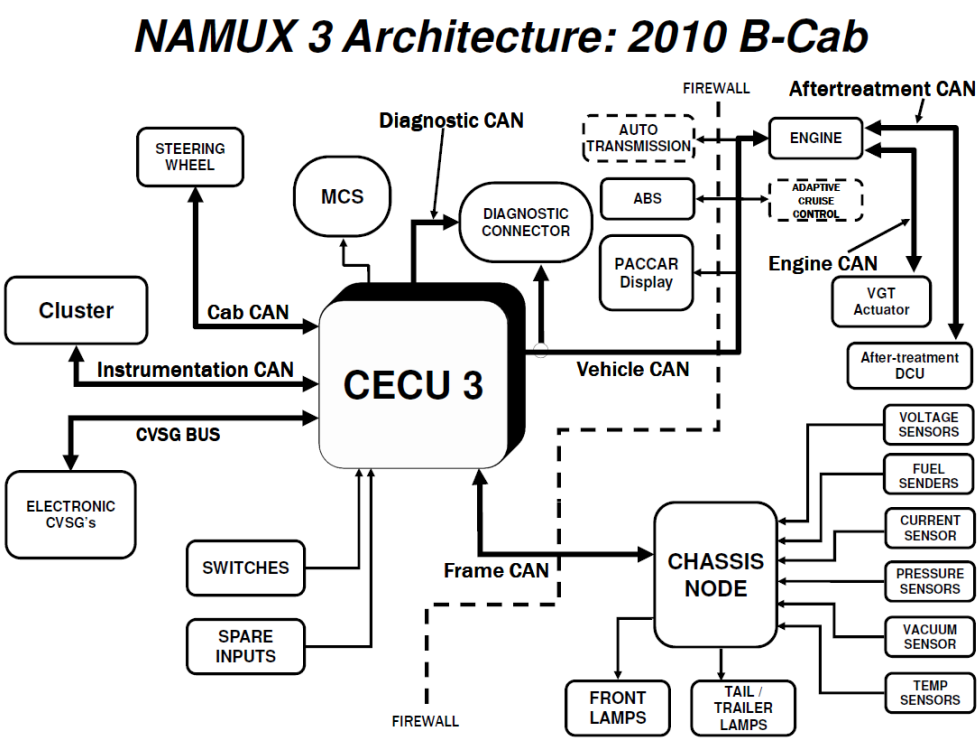
Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

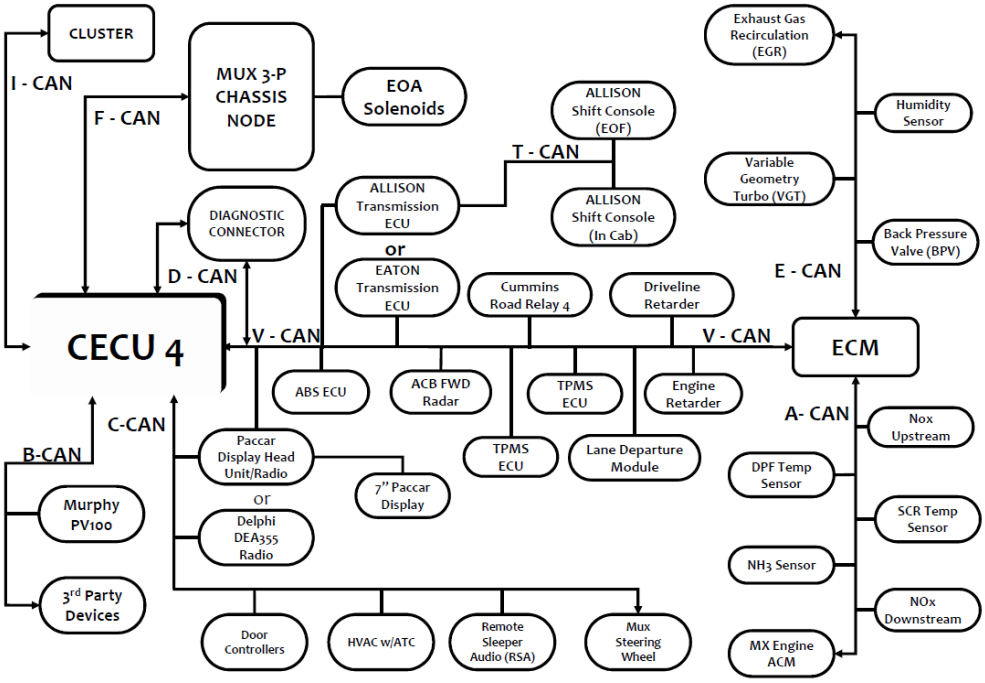
Step 1	Step ID 1545a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above? • No: Proceed to step 2.		

<table>
<tr><td></td><td>
Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2
<table>
<tr><td>Step 2</td><td>Step ID 1545b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
Lookup the technical data of the specific system
Perform the checking data test of the specific component
Is test pass?
No: Proceed to step 3
Yes : Proceed to step4</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1545c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
Repair or replace the component, also check for electrical connection and wiring harness .
Reconnect the connector
ON the ignition key
Use DAVIE to re-check for the presence of active faults:
Is DTC fault active: Proceed to step 4
Is DTC fault inactive : Issue resolved. Clear inactive fault.</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1545d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

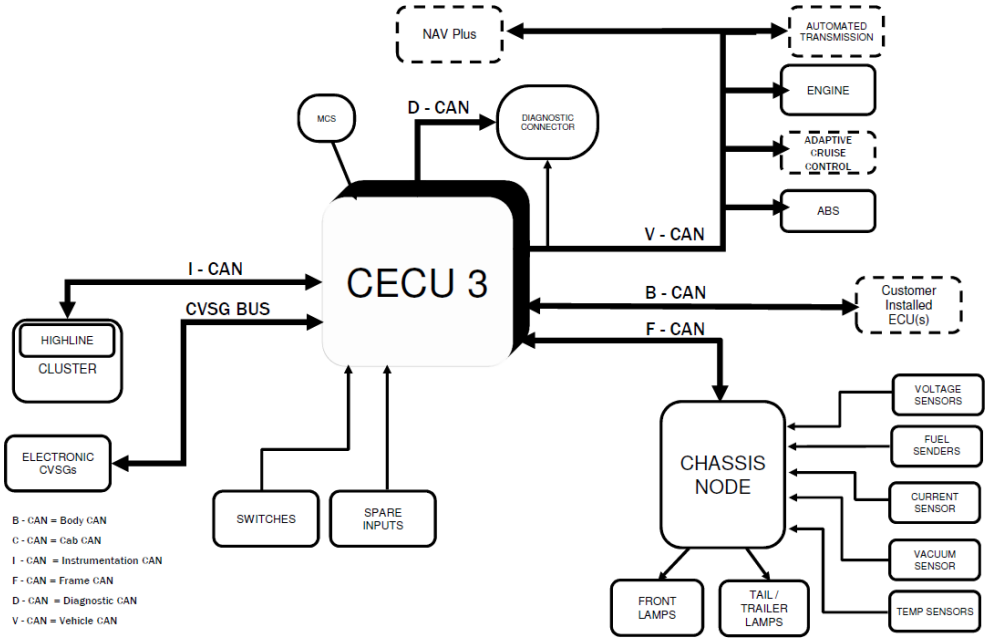
U1546

Code number	U1546
Fault code description	CAN communication - Message (ERC1_DR) out of range - Intended retarder percentage torque from retarder
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680

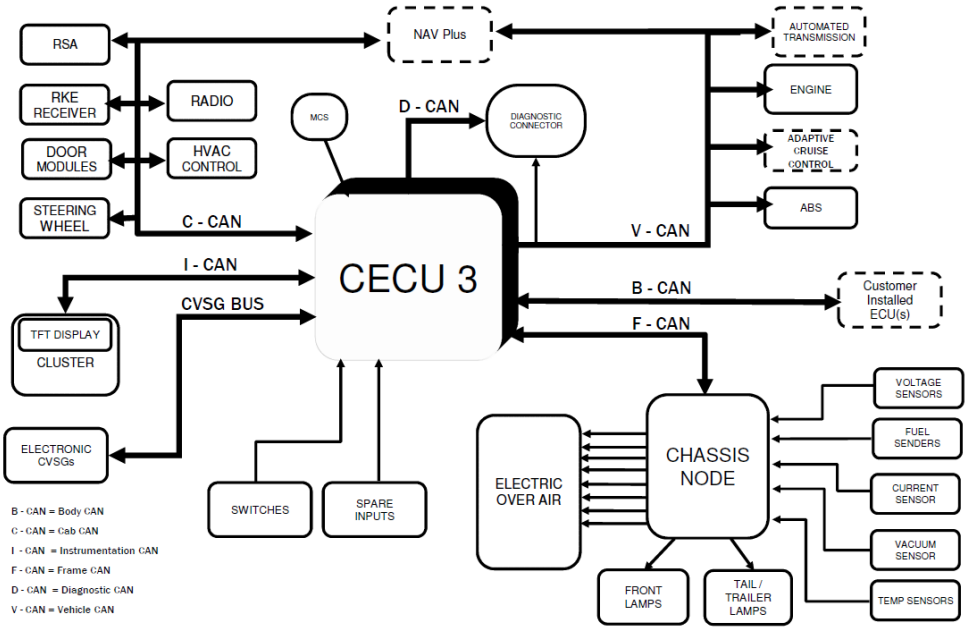


NAMUX 3 Architecture



<table>
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>Check driveline retarder ECU for faults</td></tr>
<tr><td>Additional information</td><td>No additional information available.</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

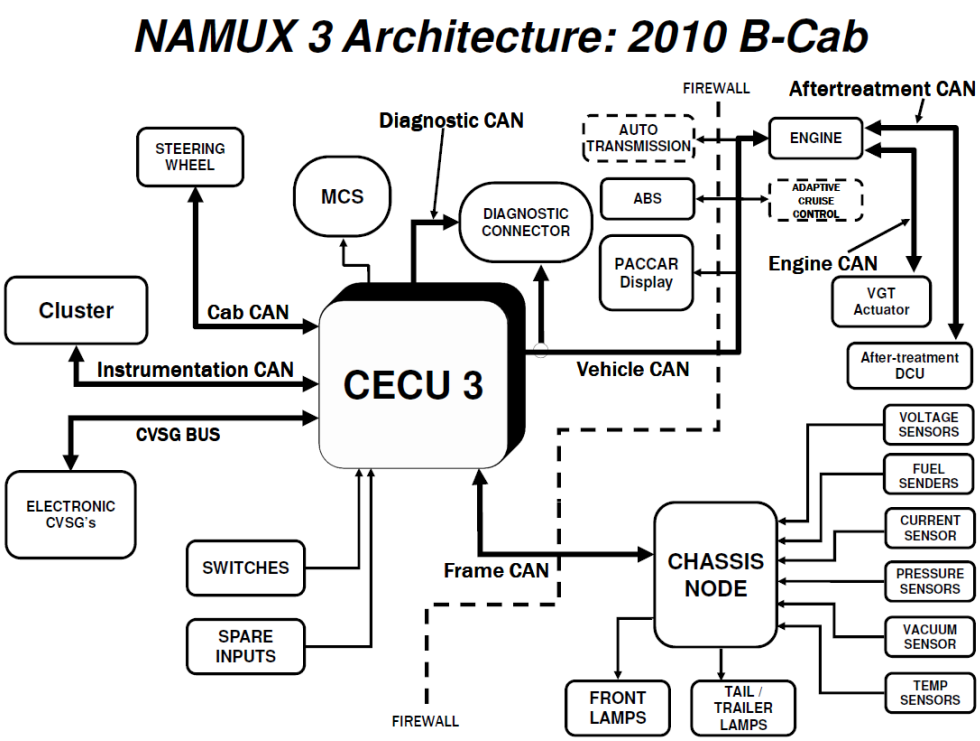
- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1546a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.
Was there evidence of any of the above?
• No: Proceed to step 2.</td></tr>
</table>

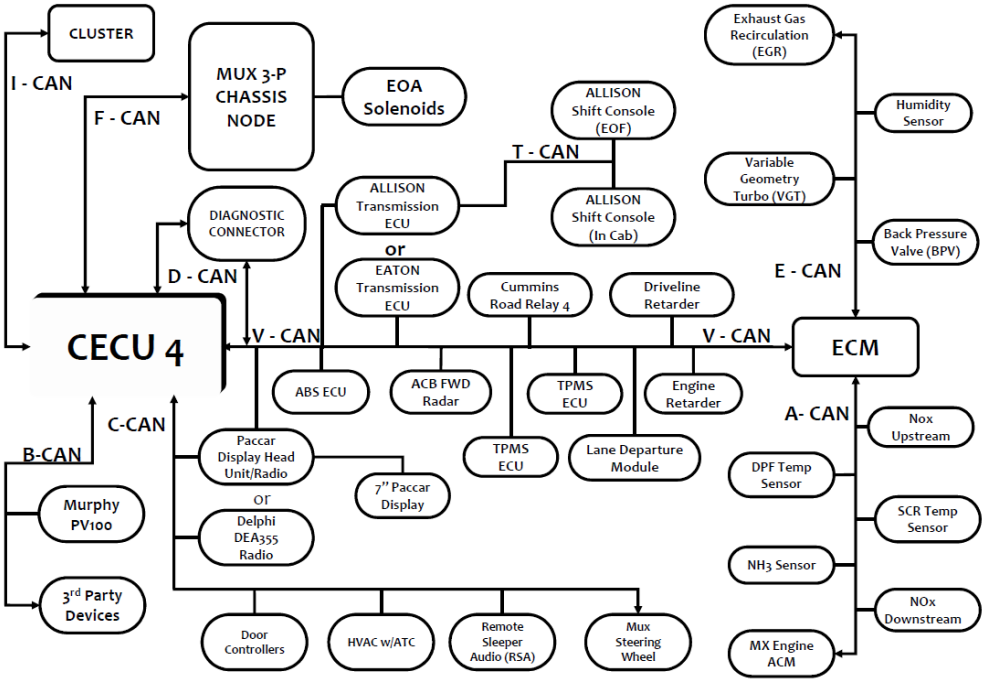
</td></tr>
</table>

<table>
<tr><td></td><td>
Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2
<table>
<tr><td>Step 2</td><td>Step ID 1546b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
Lookup the technical data of the specific system
Perform the checking data test of the specific component
Is test pass?
No: Proceed to step 3
Yes : Proceed to step4</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1546c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
Repair or replace the component, also check for electrical connection and wiring harness .
Reconnect the connector
ON the ignition key
Use DAVIE to re-check for the presence of active faults:
Is DTC fault active: Proceed to step 4
Is DTC fault inactive : Issue resolved. Clear inactive fault.</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1546d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

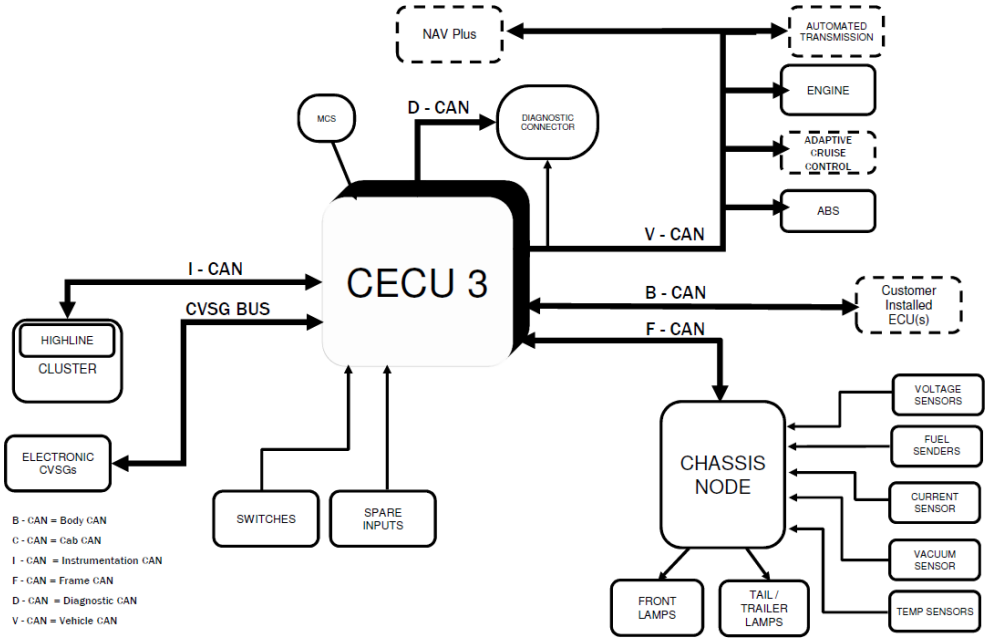
U1547

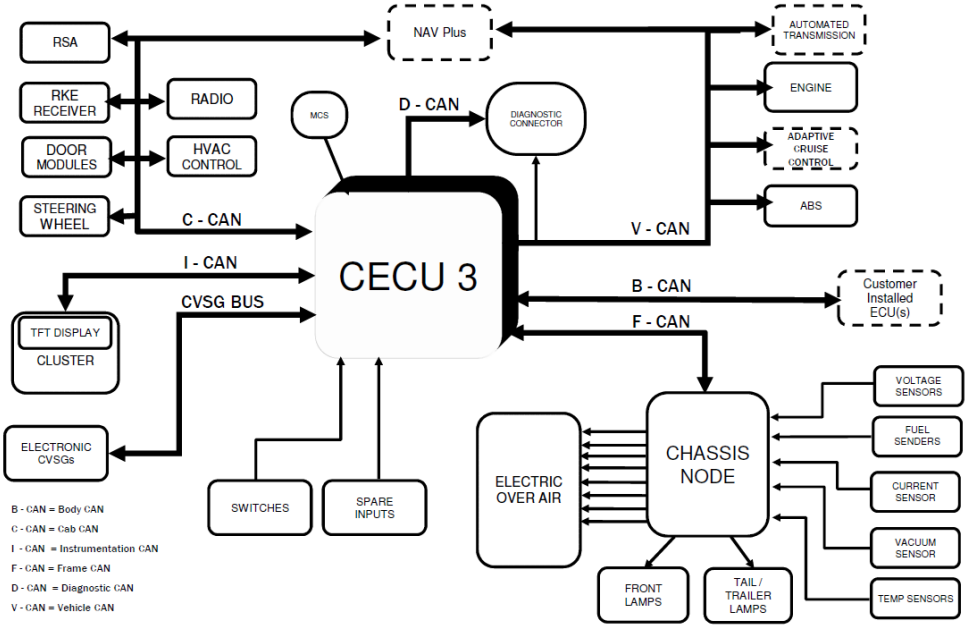
Code number	U1547
Fault code description	CAN communication - Message (ERC1_DR) out of range - Retarder selection, non-engine from retarder
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	Check driveline retarder ECU for faults
Additional information	No additional information available.

Diagnostic Step-by-Step

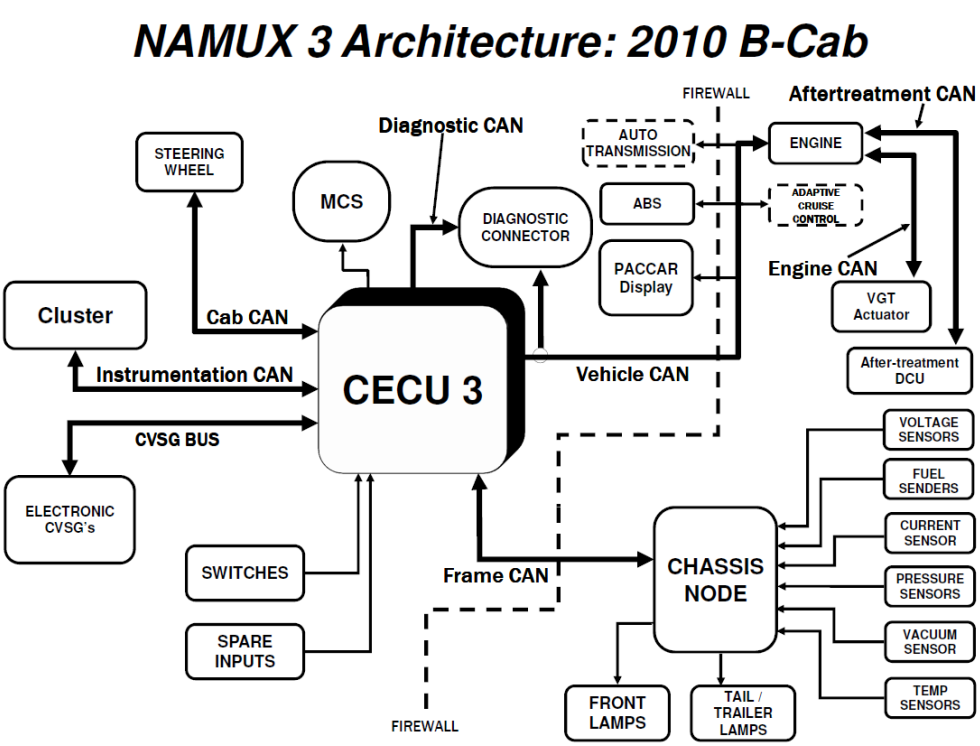
Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

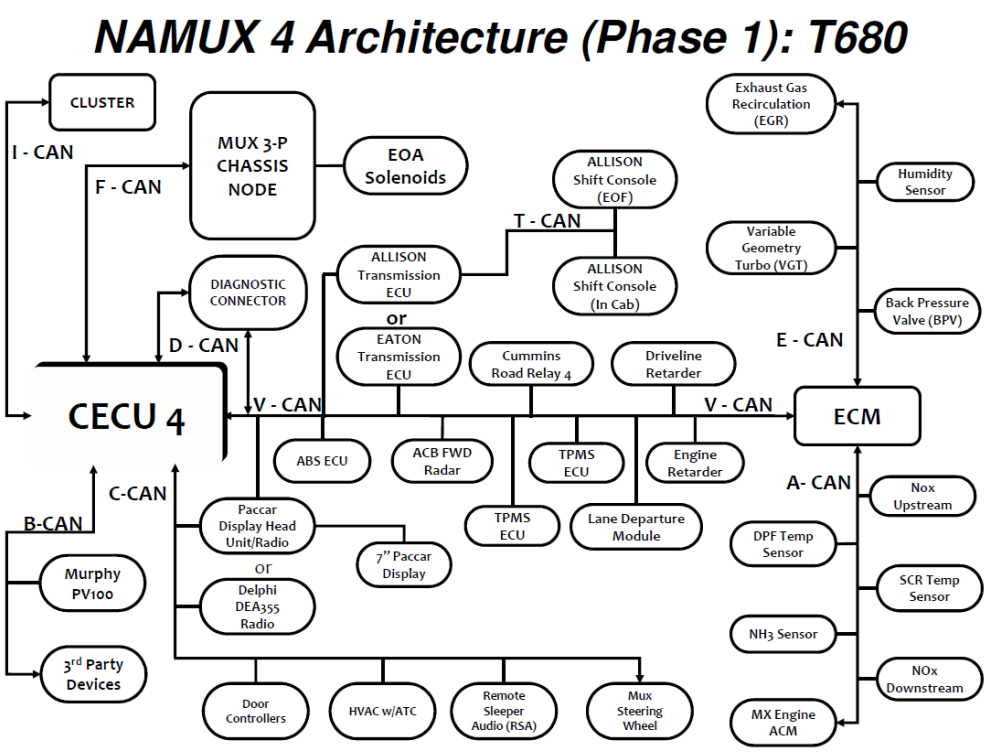
- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1547a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above? • No: Proceed to step 2.		

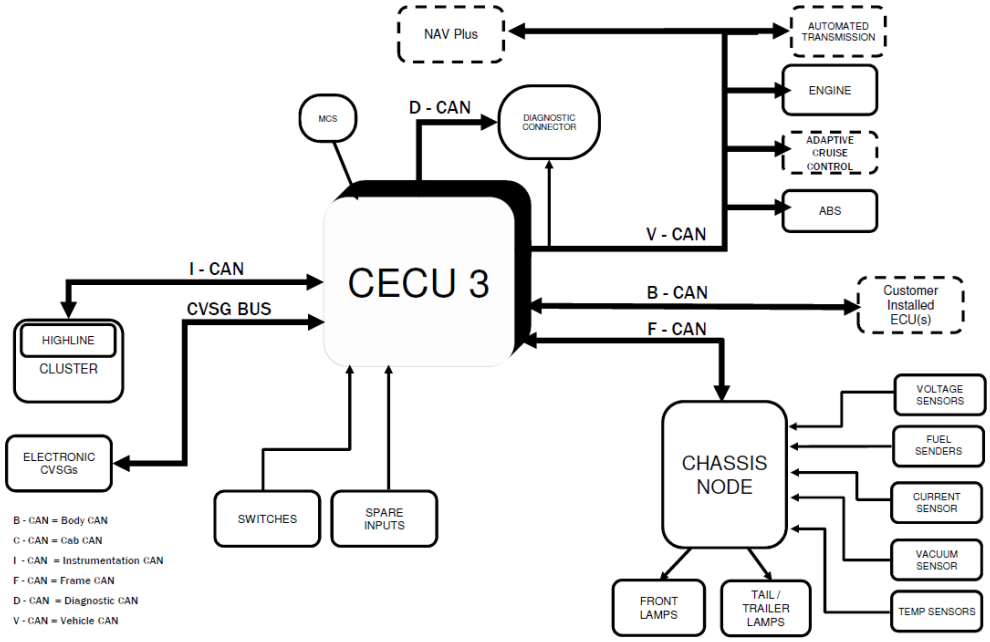
<table>
<tr>
<td></td>
<td>
Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2
<table>
<tr><td>Step 2</td><td>Step ID 1547b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
Lookup the technical data of the specific system
Perform the checking data test of the specific component
Is test pass?
No: Proceed to step 3
Yes : Proceed to step4</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1547c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
Repair or replace the component, also check for electrical connection and wiring harness .
Reconnect the connector
ON the ignition key
Use DAVIE to re-check for the presence of active faults:
Is DTC fault active: Proceed to step 4
Is DTC fault inactive : Issue resolved. Clear inactive fault.</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1547d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Verification Drive Cycle</td>
<td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td>
</tr>
<tr>
<td></td>
<td>Back to Index</td>
</tr>
</table>

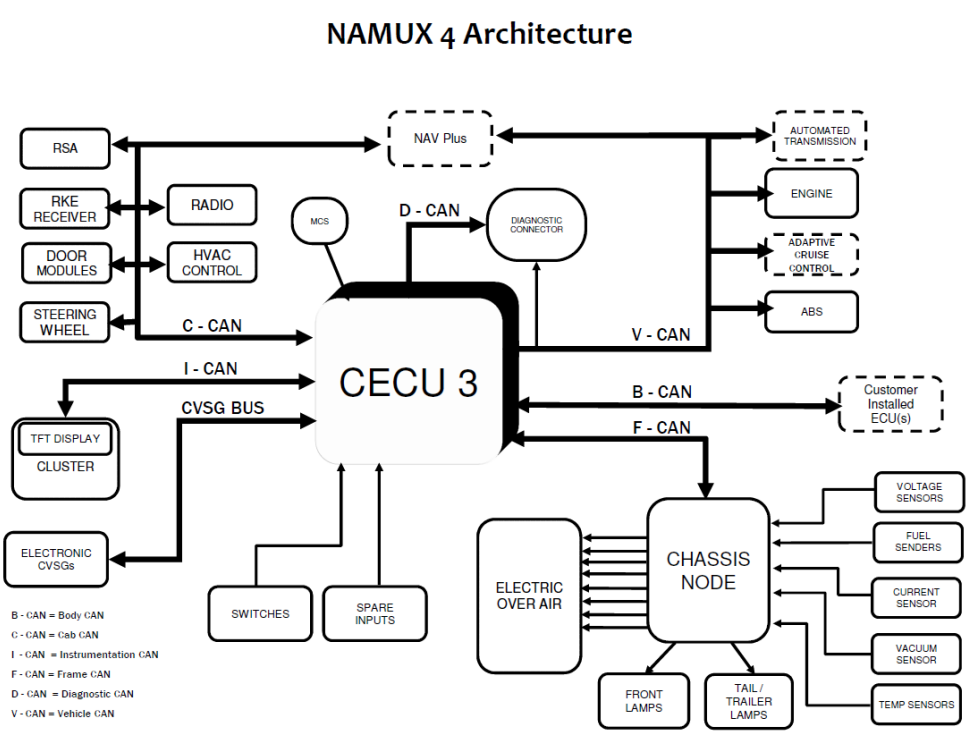
U1548

Code number	U1548
Fault code description	CAN communication - Message (ETC1) out of range - Transmission output shaft speed from transmission
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	Check driveline retarder ECU for faults
Additional information	No additional information available.

Diagnostic Step-by-Step

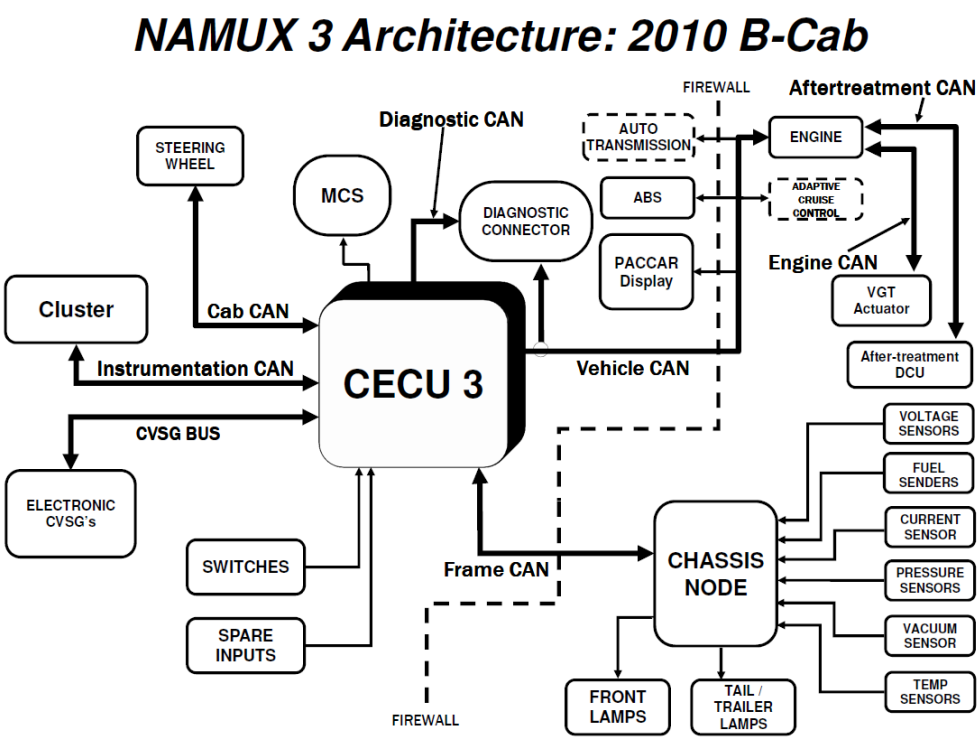
Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

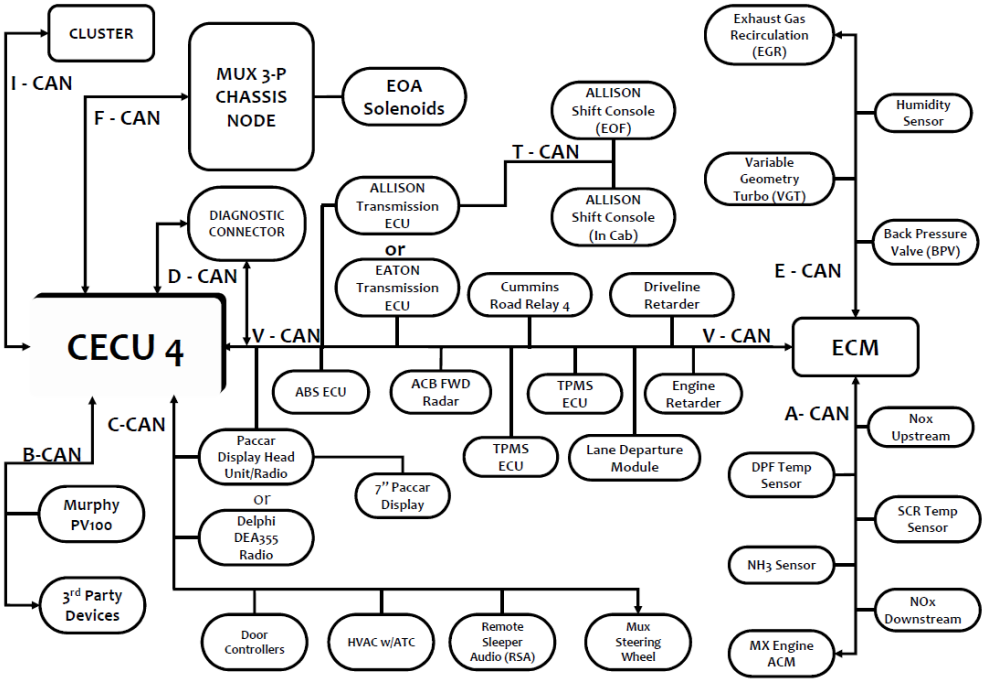
Step 1	Step ID 1548a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above? • No: Proceed to step 2.		

	• Yes: Make the appropriate repairs or component replacements. Use DAVIE to re-check for the presence of active faults. • If this related fault is no longer active, then this issue has been resolved. • If this related fault is still active, Proceed to step 2
	Step 2 | **Step ID 1548b** | **SRT** Data check • Lookup the technical data of the specific system • Perform the checking data test of the specific component Is test pass? • No: Proceed to step 3 • Yes : Proceed to step4
	Step 3 | **Step ID 1548c** | **SRT** Repair or replace component • Repair or replace the component, also check for electrical connection and wiring harness . • Reconnect the connector • ON the ignition key Use DAVIE to re-check for the presence of active faults: • Is DTC fault active: Proceed to step 4 • Is DTC fault inactive : Issue resolved. Clear inactive fault.
	Step 4 | **Step ID 1548d** | **SRT** For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.
Verification Drive Cycle	To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.
	Back to Index

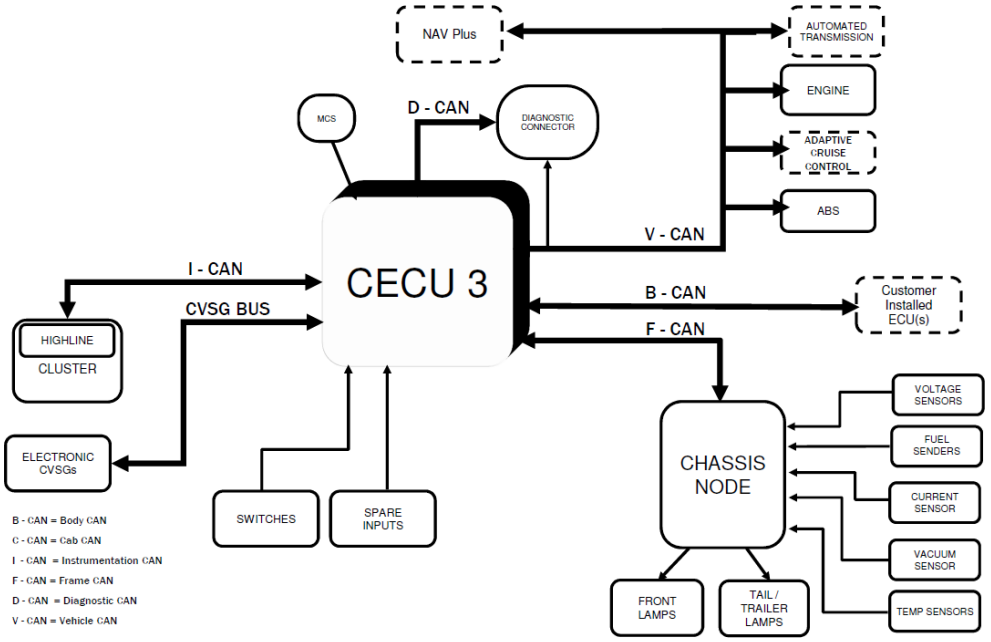
U1549

Code number	U1549
Fault code description	CAN communication - Message (ETC1) out of range - Transmission torque converter lock-up engaged from transmission
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680

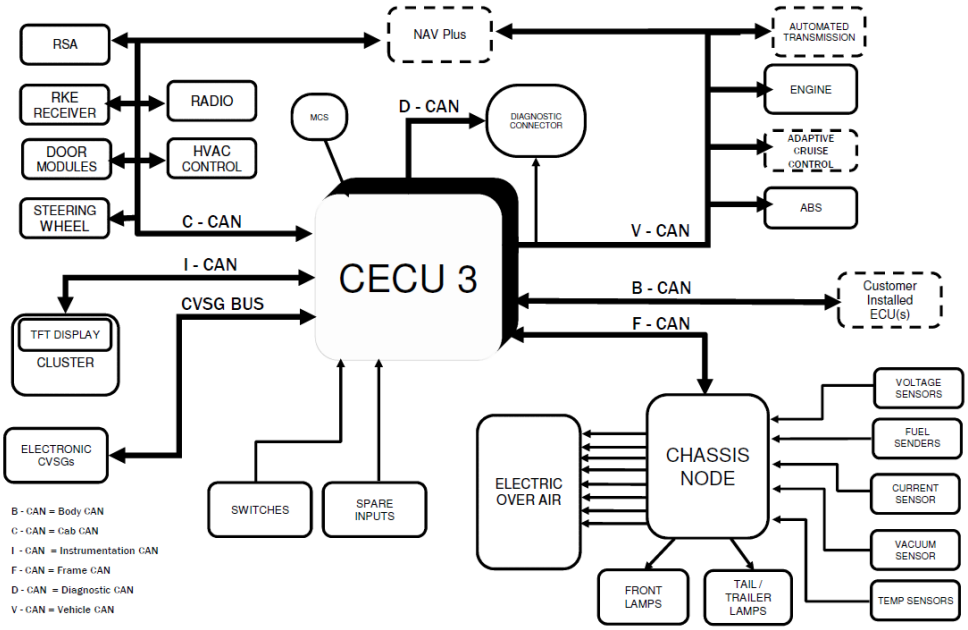


NAMUX 3 Architecture



<table>
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>Check driveline retarder ECU for faults</td></tr>
<tr><td>Additional information</td><td>No additional information available.</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

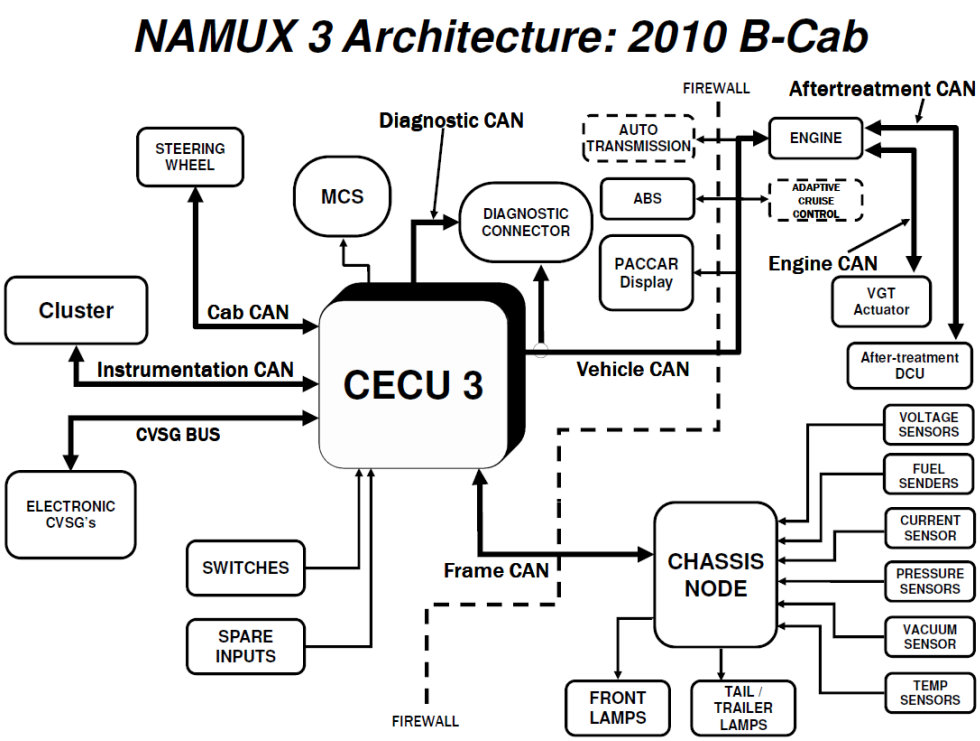
- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1549a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.
Was there evidence of any of the above?
• No: Proceed to step 2.</td></tr>
</table>

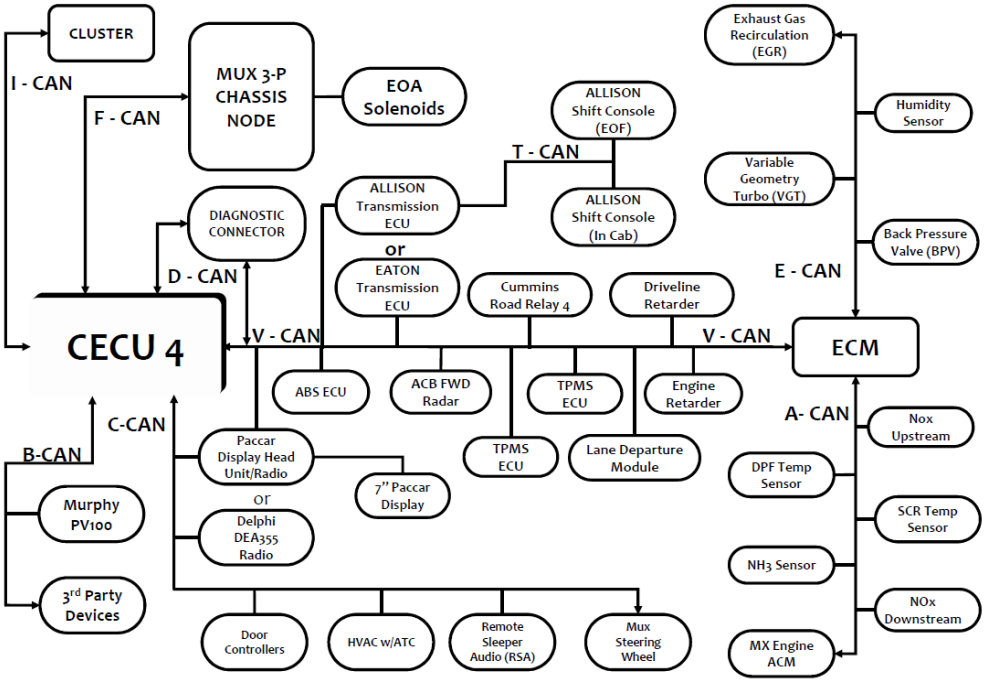
</td></tr>
</table>

<table>
<tr><td></td><td>
Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2
<table>
<tr><td>Step 2</td><td>Step ID 1549b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
Lookup the technical data of the specific system
Perform the checking data test of the specific component
Is test pass?
No: Proceed to step 3
Yes : Proceed to step4</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1549c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
Repair or replace the component, also check for electrical connection and wiring harness .
Reconnect the connector
ON the ignition key
Use DAVIE to re-check for the presence of active faults:
Is DTC fault active: Proceed to step 4
Is DTC fault inactive : Issue resolved. Clear inactive fault.</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1549d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

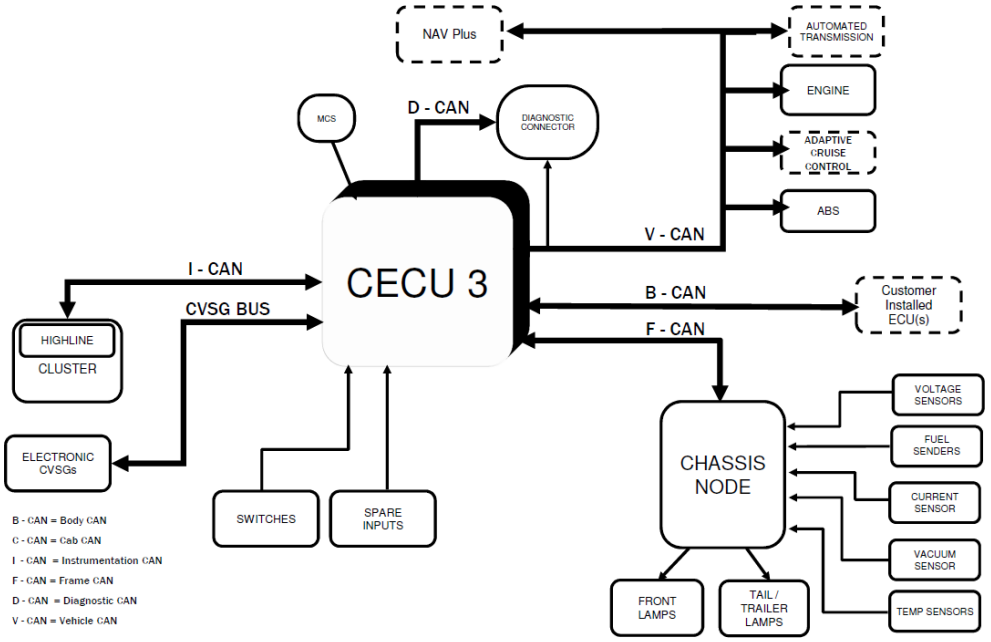
U1550

Code number	U1550
Fault code description	CAN communication - Message (RC_DR) out of range - Reference retarder torque from retarder
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



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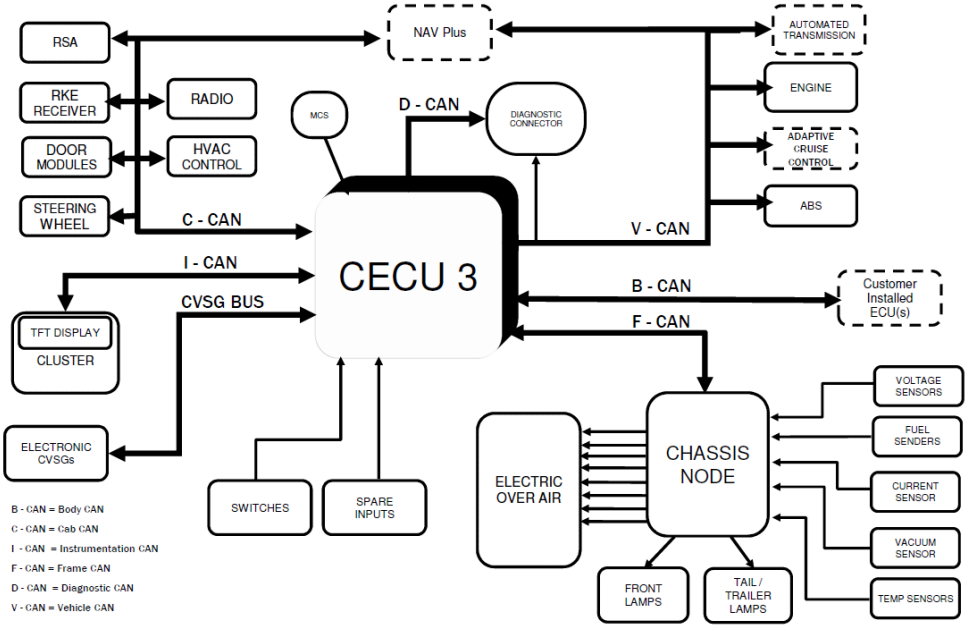
NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>Check driveline retarder ECU for faults</td></tr>
<tr><td>Additional information</td><td>No additional information available.</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

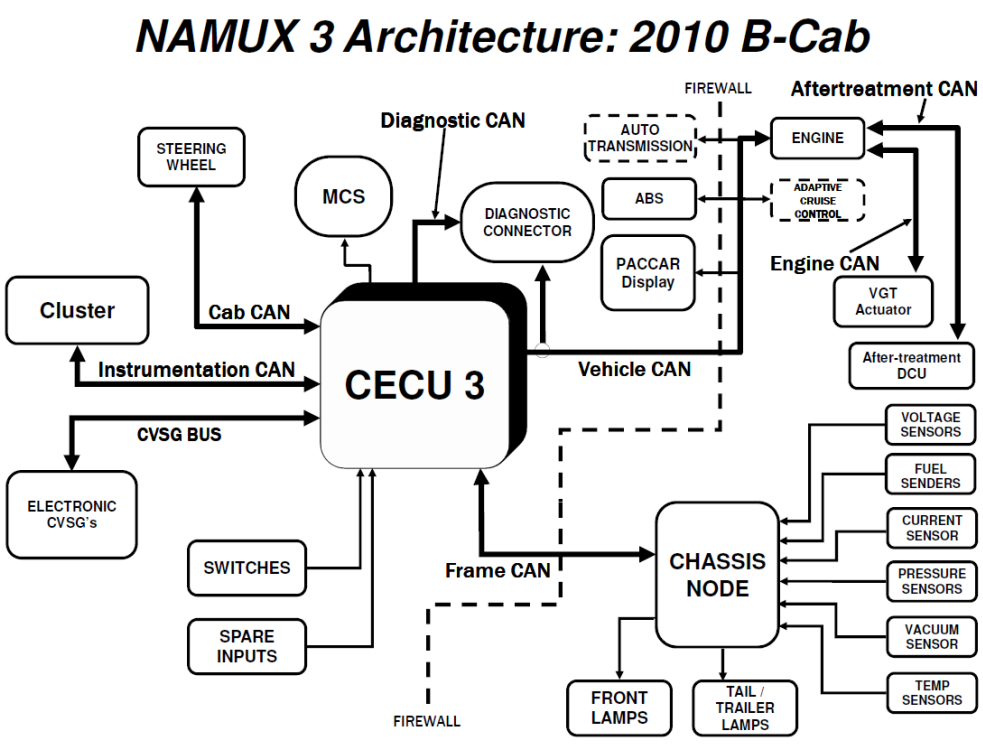
- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1550a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.
Was there evidence of any of the above?
• No: Proceed to step 2.</td></tr>
</table>

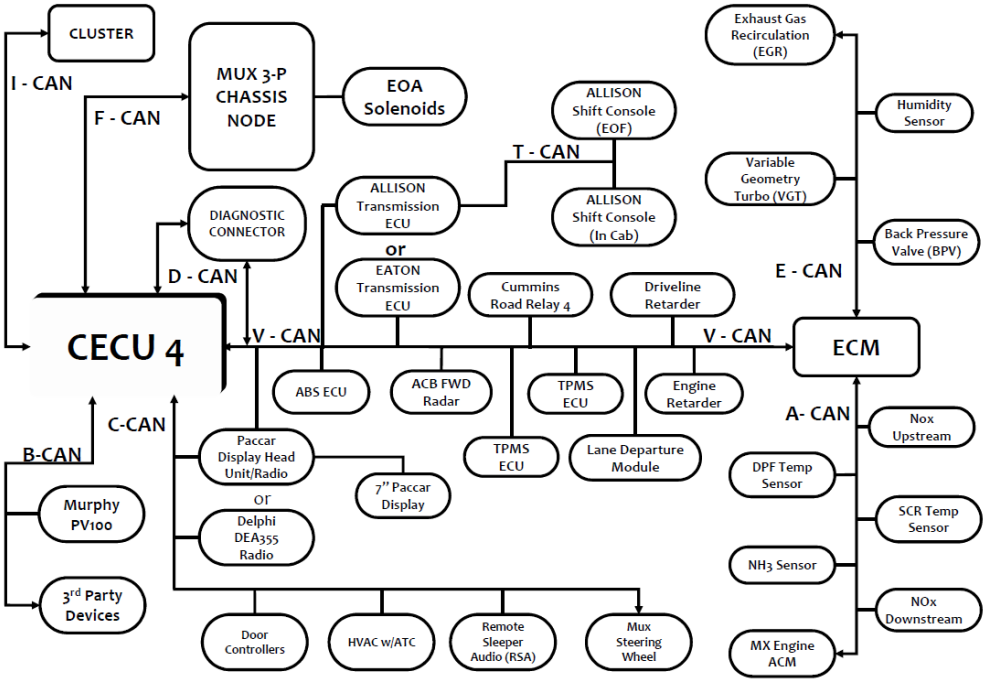
</td></tr>
</table>

<table>
<tr>
<td></td>
<td>
Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2
<table>
<tr><td>Step 2</td><td>Step ID 1550b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
Lookup the technical data of the specific system
Perform the checking data test of the specific component
Is test pass?
No: Proceed to step 3
Yes : Proceed to step4</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1550c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
Repair or replace the component, also check for electrical connection and wiring harness .
Reconnect the connector
ON the ignition key
Use DAVIE to re-check for the presence of active faults:
Is DTC fault active: Proceed to step 4
Is DTC fault inactive : Issue resolved. Clear inactive fault.</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1550d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Verification Drive Cycle</td>
<td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td>
</tr>
<tr>
<td></td>
<td>Back to Index</td>
</tr>
</table>

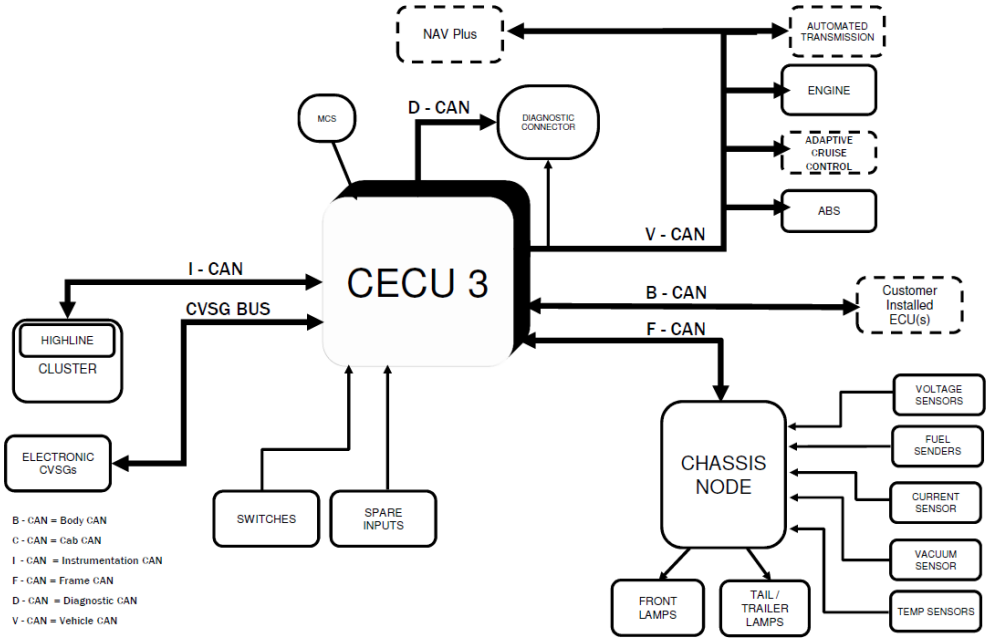
U1551

Code number	U1551
Fault code description	CAN Communication – Message (VDC1) out of range – Roll-over-protection brake control active from brake system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



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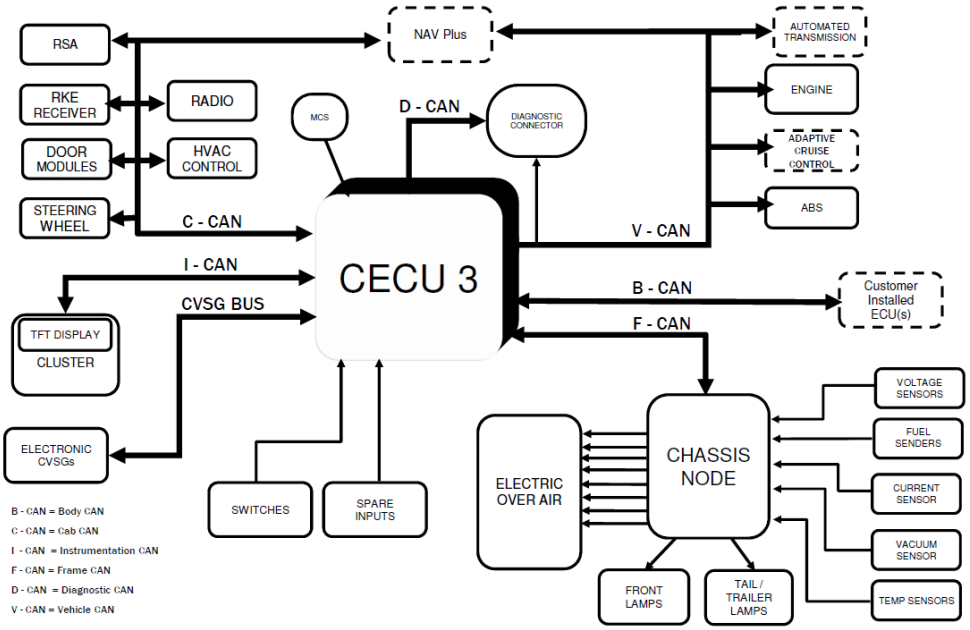
NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Open circuit, short circuit to ground or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1551a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

Was there evidence of any of the above?
- No: Proceed to step 2.
- Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.
- If this related fault is no longer active, then this issue has been resolved.
- If this related fault is still active, Proceed to step 2

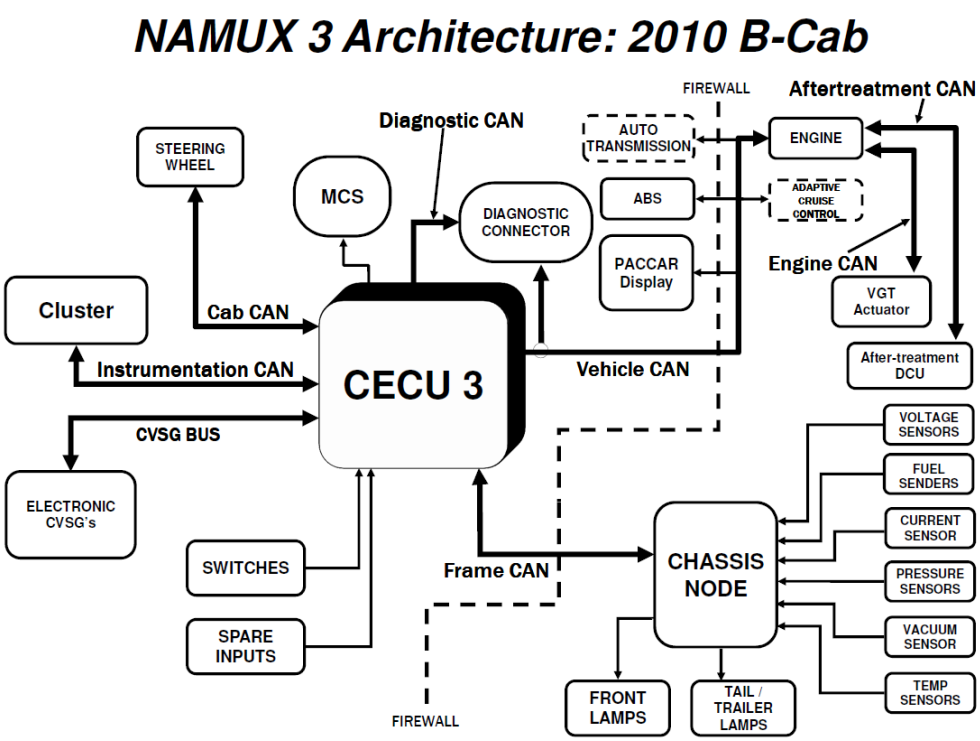
Step 2	Step ID 1551b	SRT
Data check • Lookup the technical data of the specific system • Perform the checking data test of the specific component Is test pass? • No: Proceed to step 3 • Yes : Proceed to step4		

Step 3	Step ID 1551c	SRT
Repair or replace component • Repair or replace the component, also check for electrical connection and wiring harness. • Reconnect the connector • ON the ignition key Use DAVIE to re-check for the presence of active faults: • Is DTC fault active: Proceed to step 4 • Is DTC fault inactive: Issue resolved. Clear inactive fault.		

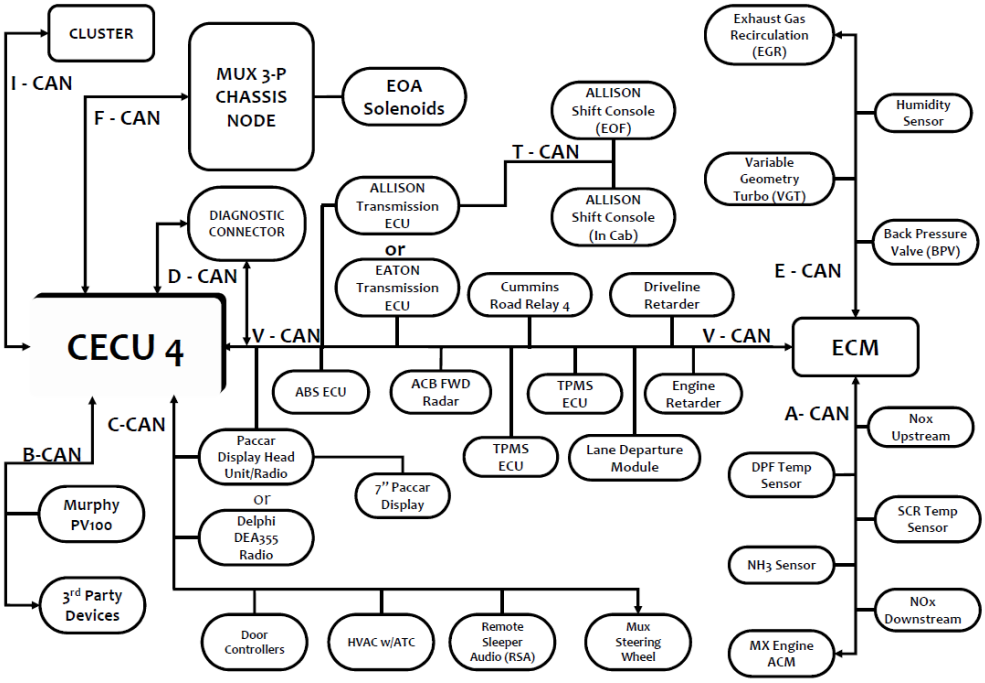
Step 4	Step ID 1551d	SRT
For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.		

Verification Drive Cycle	To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.
	Back to Index

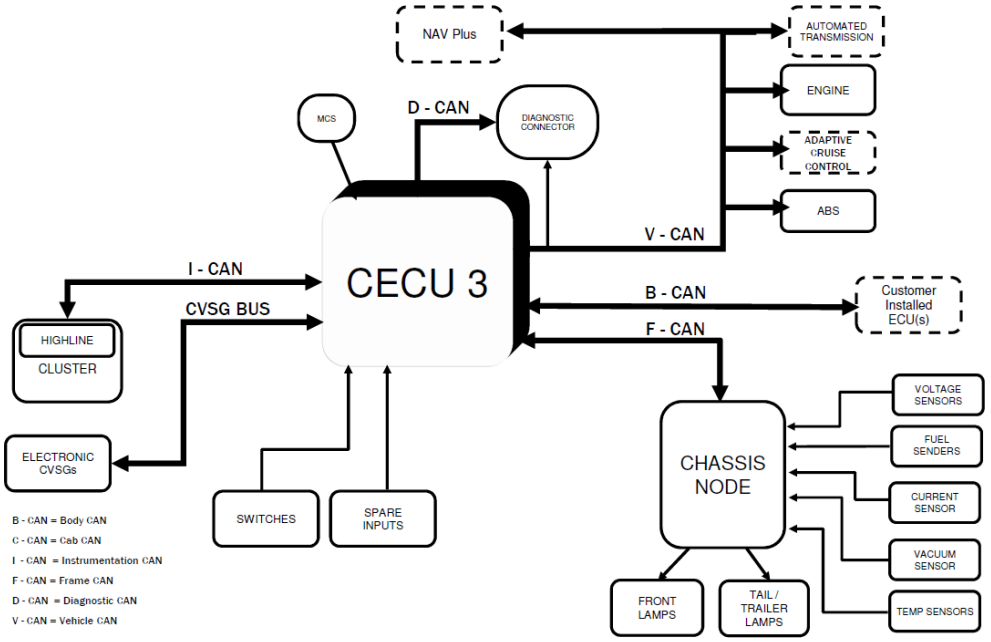
U1552

Code number	U1552
Fault code description	CAN Communication – Message (VDC1) out of range – Roll-over-protection engine control active from brake system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680

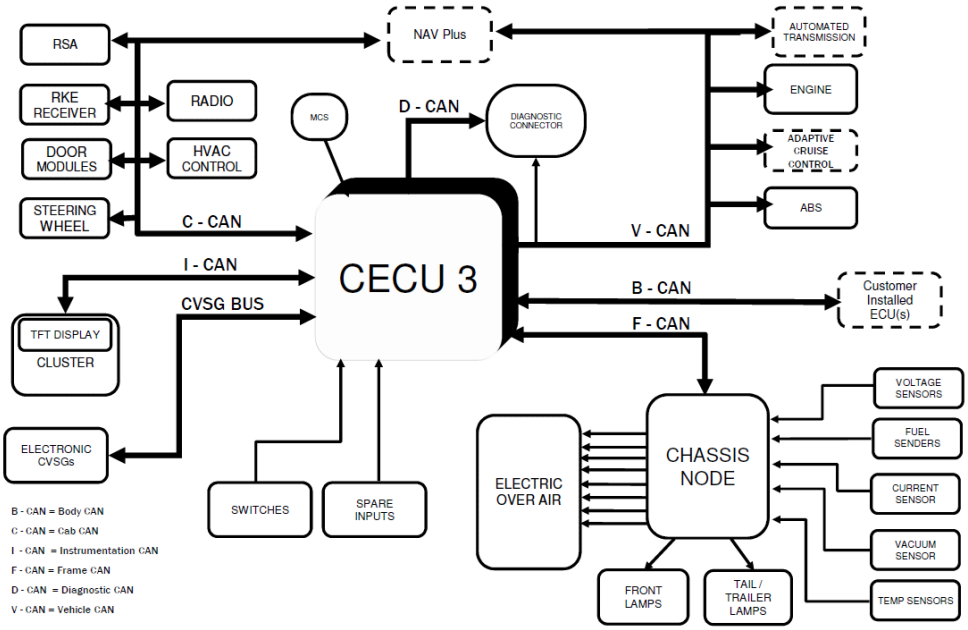


NAMUX 3 Architecture



<table>
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Open circuit, short circuit to ground or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1552a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

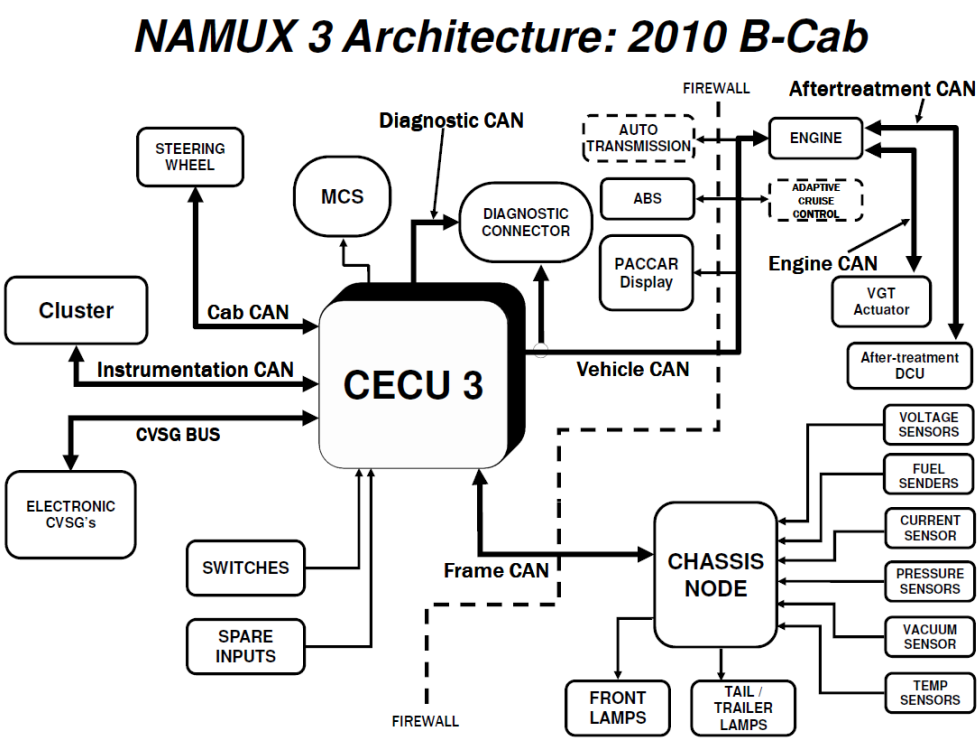
<table>
<tr>
<td></td>
<td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1552b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

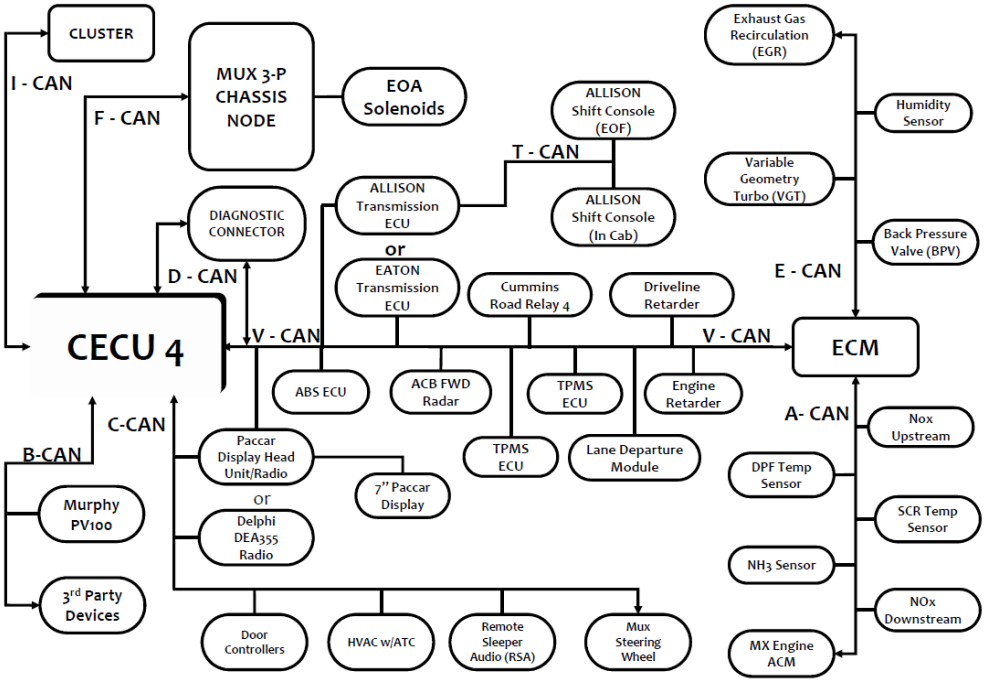
<table>
<tr><td>Step 3</td><td>Step ID 1552c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive: Issue resolved. Clear inactive fault.</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 1552d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Verification Drive Cycle</td>
<td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td>
</tr>
<tr>
<td></td>
<td>Back to Index</td>
</tr>
</table>

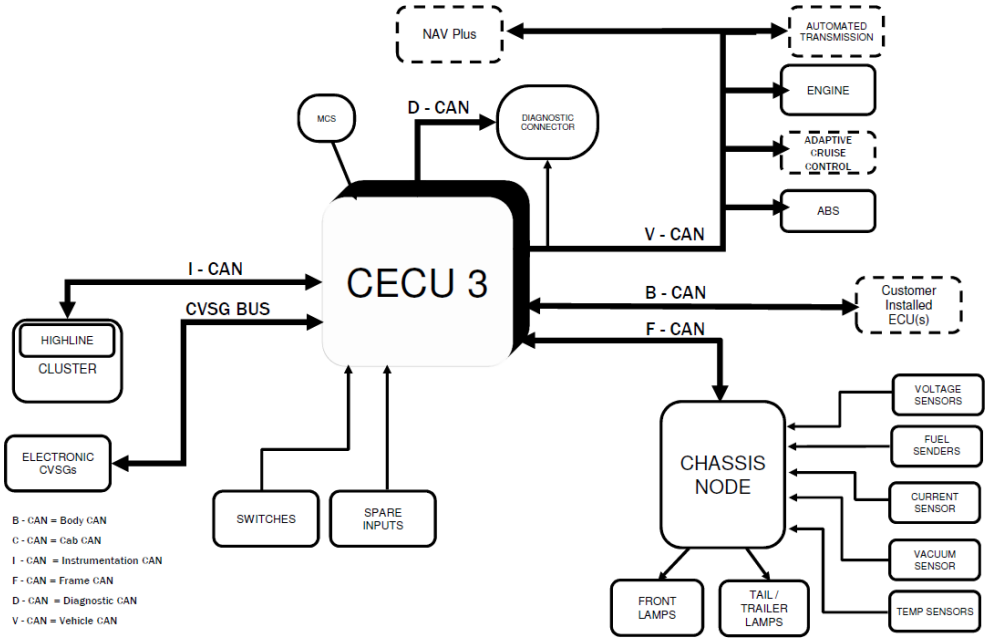
U1553

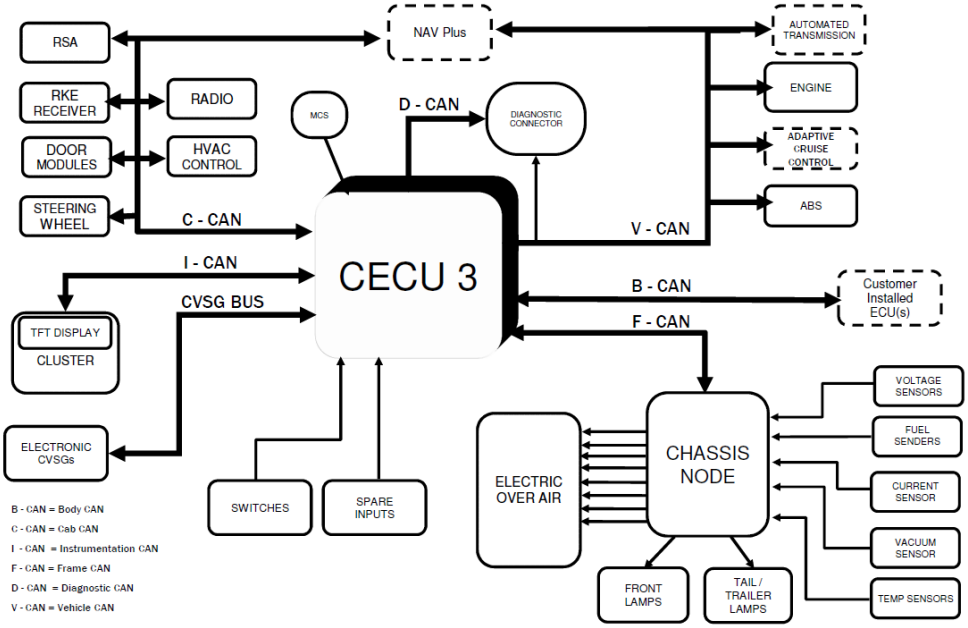
Code number	U1553
Fault code description	CAN Communication – Message (VDC1) out of range – Yaw control brake control active from brake system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	Check brake system ECU for faults
Additional information	No additional information available

Diagnostic Step-by-Step

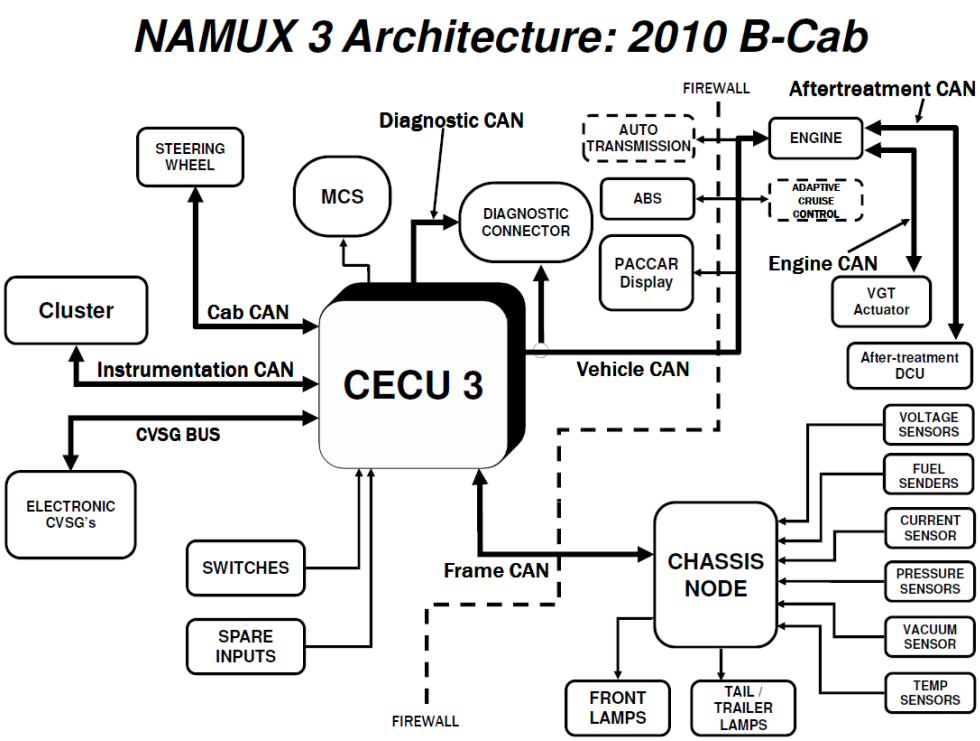
Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

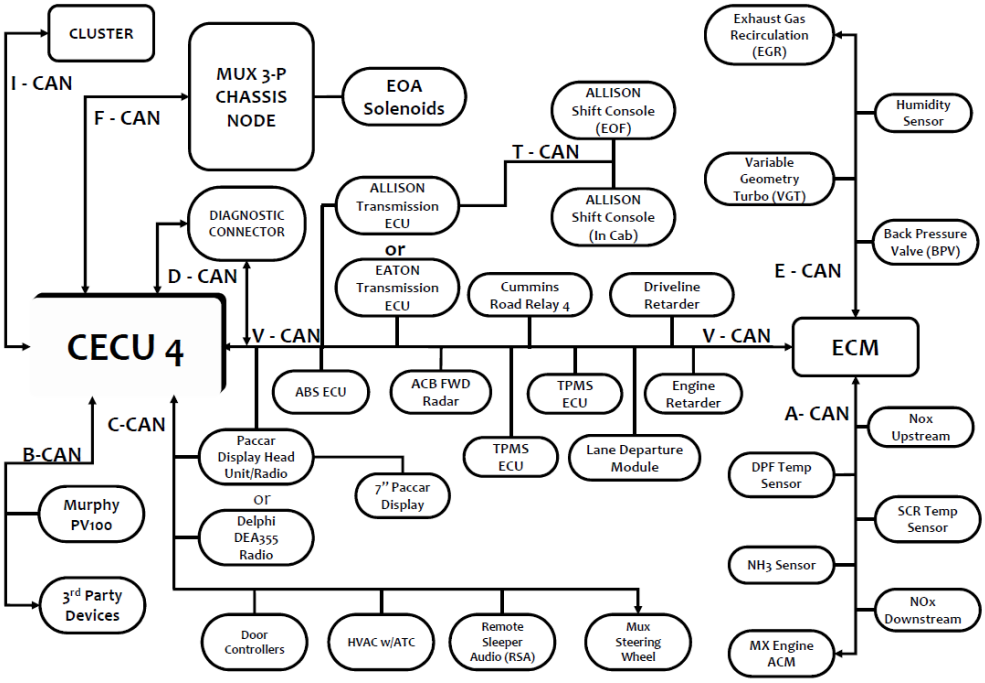
Step 1	Step ID 1553a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure. Was there evidence of any of the above? • No: Proceed to step 2.		

<table>
<tr><td></td><td>
Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2
<table>
<tr><td>Step 2</td><td>Step ID 1553b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
Lookup the technical data of the specific system
Perform the checking data test of the specific component
Is test pass?
No: Proceed to step 3
Yes : Proceed to step4</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1553c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key
Use DAVIE to re-check for the presence of active faults:
Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault.</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1553d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

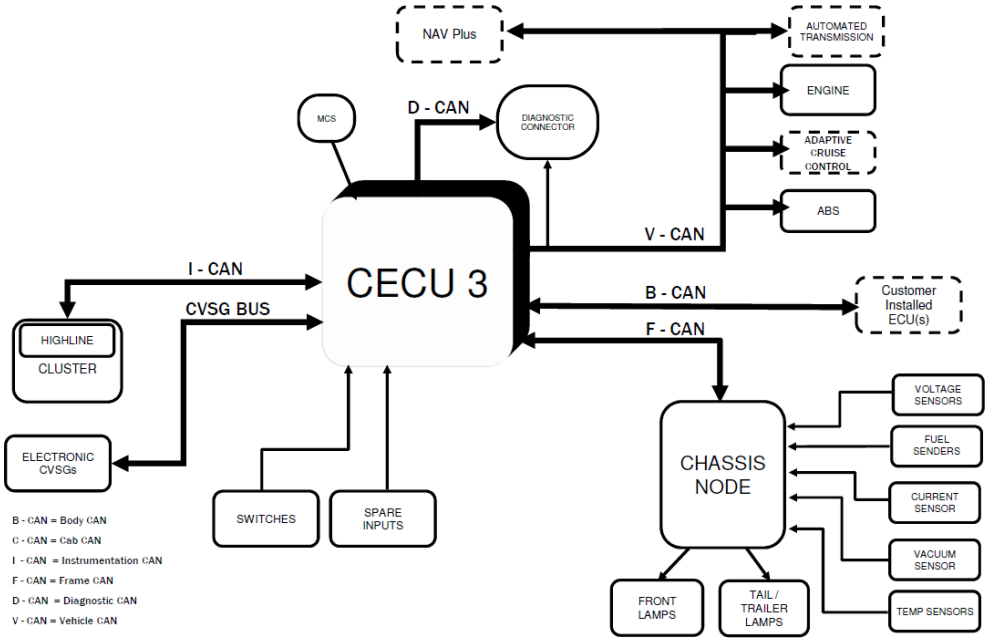
U1554

Code number	U1554
Fault code description	CAN Communication – Message (VDC1) out of range – Yaw control engine control active from brake system
Fault code information	3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680

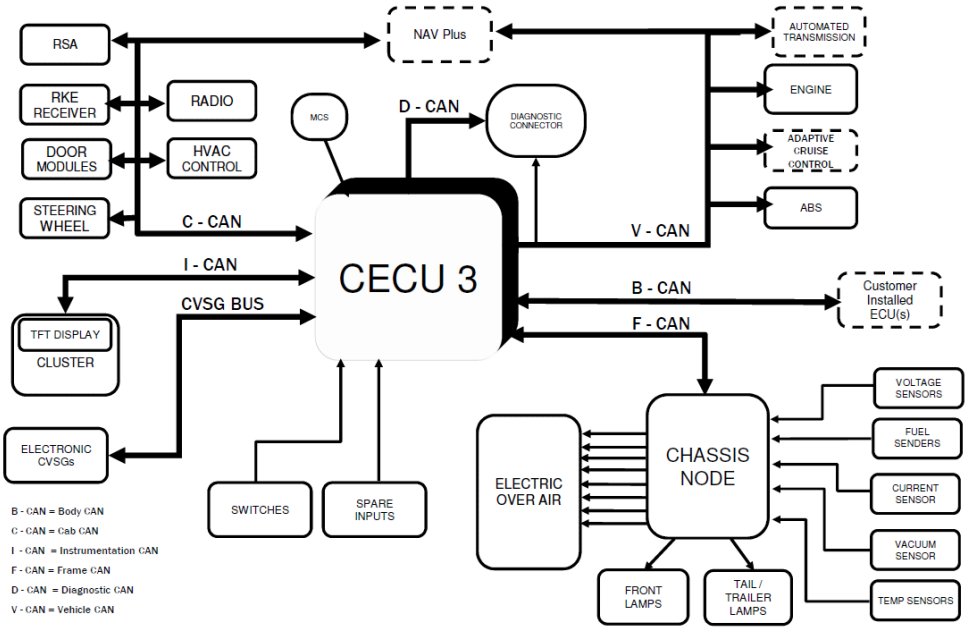


NAMUX 3 Architecture



<table>
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>Check brake system ECU for faults</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

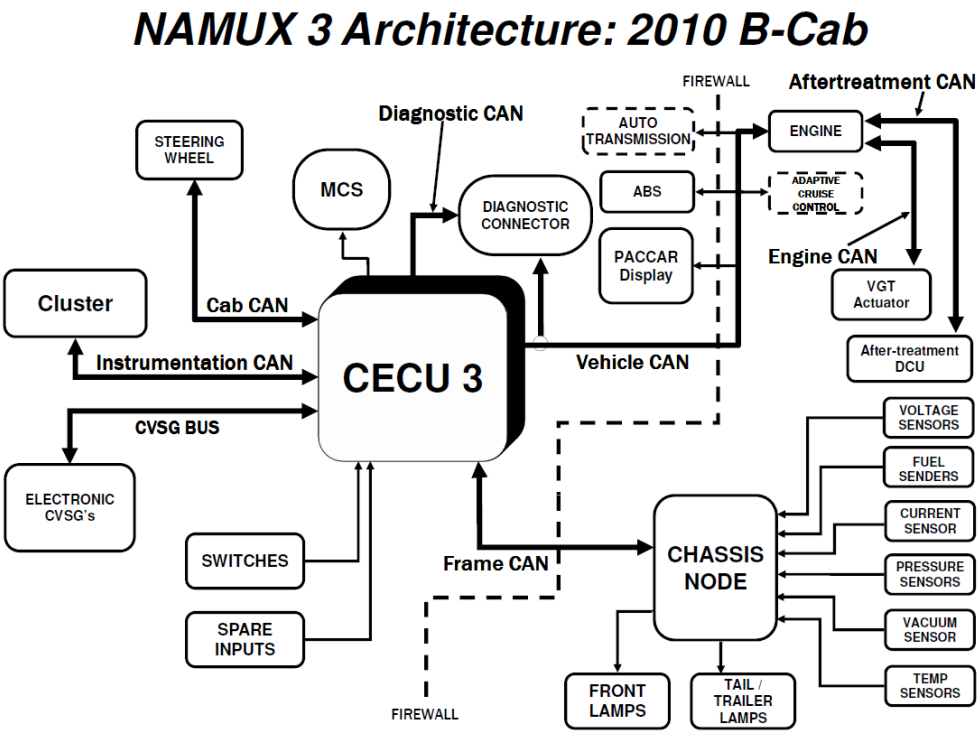
- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

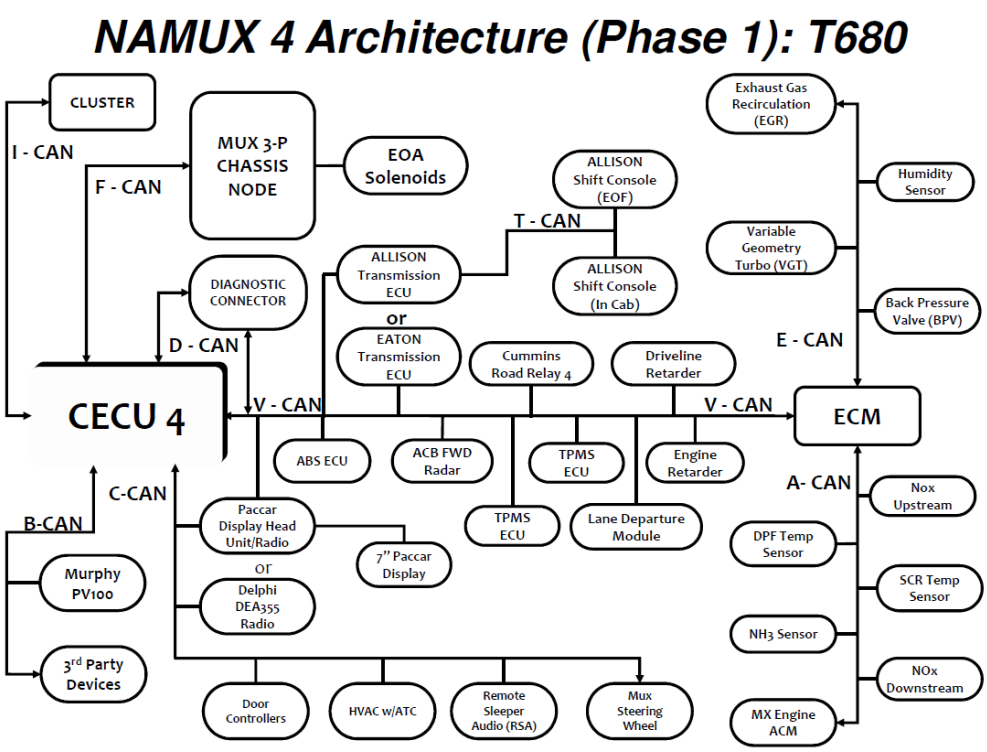
<table>
<tr><td>Step 1</td><td>Step ID 1554a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.
Was there evidence of any of the above?
• No: Proceed to step 2.</td></tr>
</table>

</td></tr>
</table>

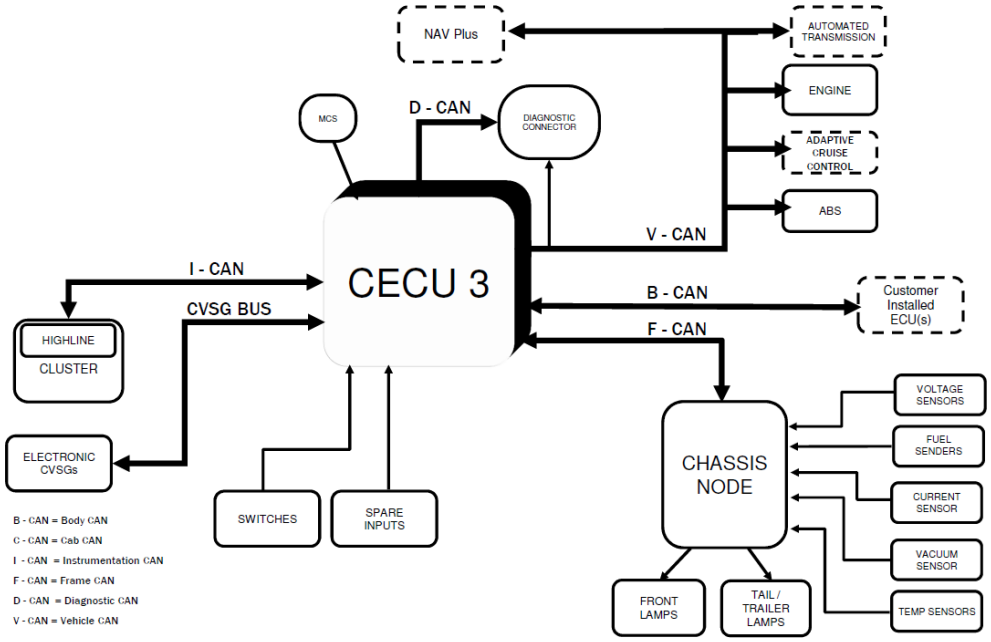
<table>
<tr><td></td><td>
Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
If this related fault is no longer active, then this issue has been resolved.
If this related fault is still active, Proceed to step 2
<table>
<tr><td>Step 2</td><td>Step ID 1554b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
Lookup the technical data of the specific system
Perform the checking data test of the specific component
Is test pass?
No: Proceed to step 3
Yes : Proceed to step4</td></tr>
</table>
<table>
<tr><td>Step 3</td><td>Step ID 1554c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
Repair or replace the component, also check for electrical connection and wiring harness.
Reconnect the connector
ON the ignition key
Use DAVIE to re-check for the presence of active faults:
Is DTC fault active: Proceed to step 4
Is DTC fault inactive: Issue resolved. Clear inactive fault.</td></tr>
</table>
<table>
<tr><td>Step 4</td><td>Step ID 1554d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To validate the repair, with the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

U1562

Code number	U1562
Fault code description	CAN communication - Message (ACM_Limits) out of range - Turbine outlet flow low target request from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	



NAMUX 3 Architecture



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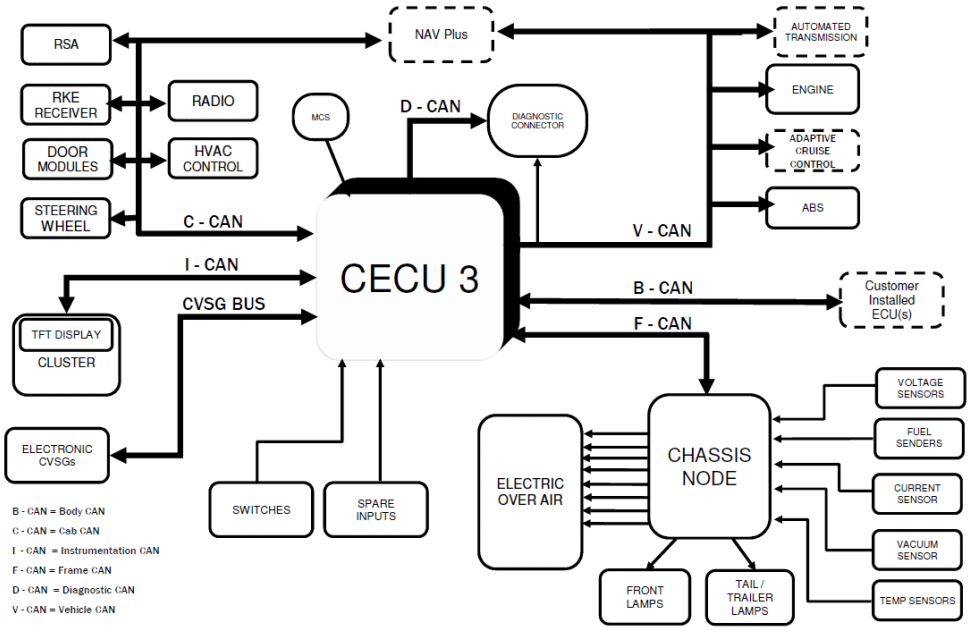
NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Open circuit, short circuit to ground, or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

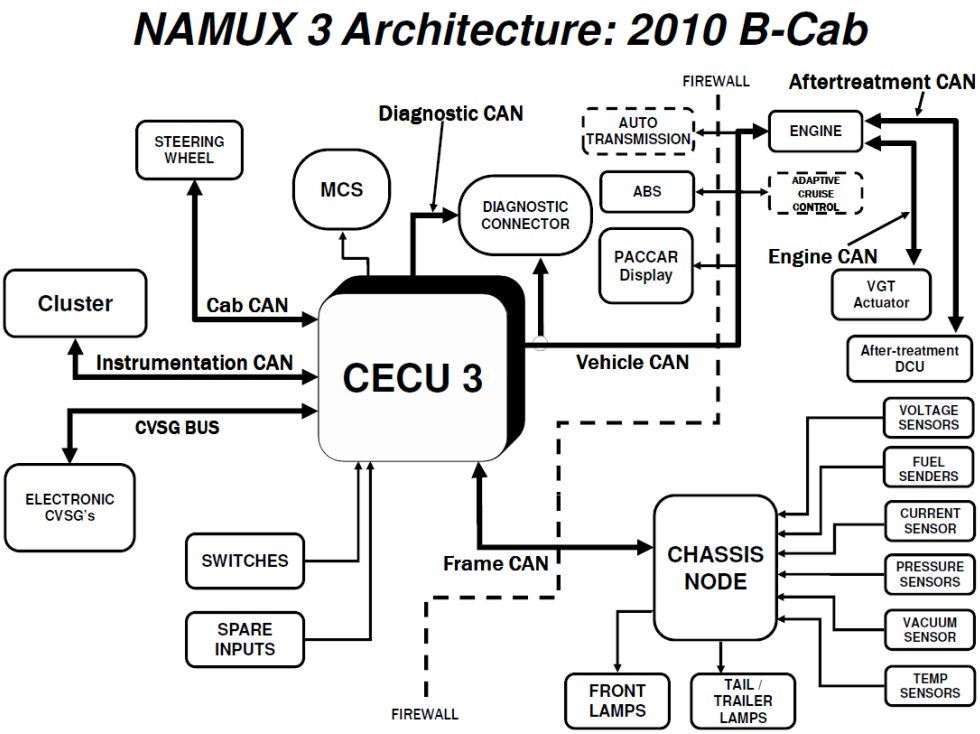
- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1562a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.		

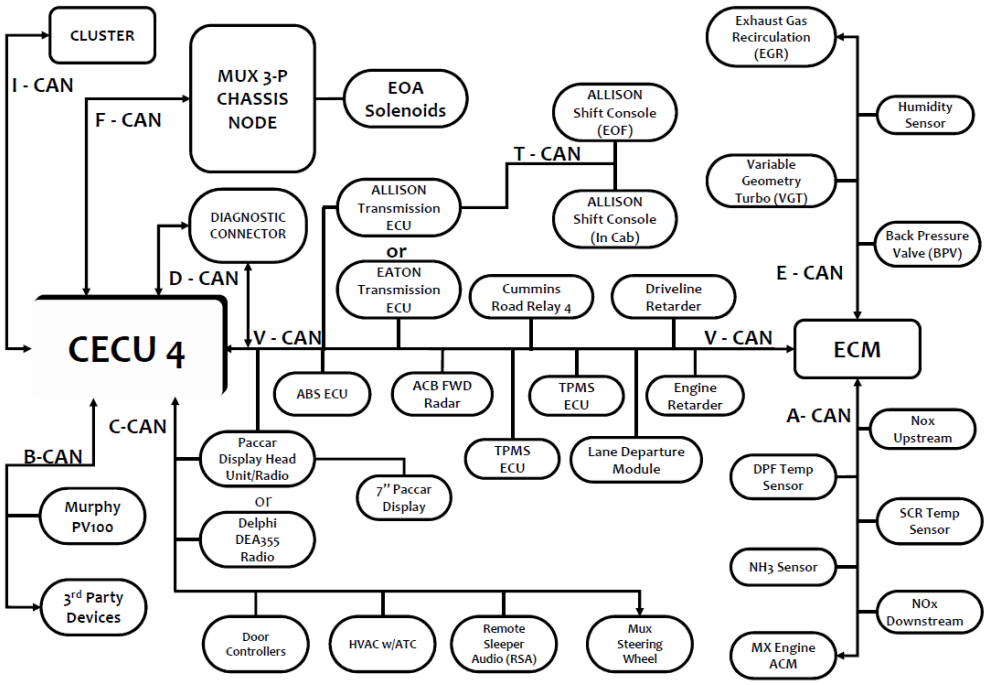
</td></tr>
</table>

	Was there evidence of any of the above? • No: Proceed to step 2. • Yes: Make the appropriate repairs or component replacements. Use DAVIE to re-check for the presence of active faults. • If this related fault is no longer active, then this issue has been resolved. • If this related fault is still active, Proceed to step 2
	Step 2 | Step ID 1562b | SRT Data check • Lookup the technical data of the specific system • Perform the checking data test of the specific component Is test pass? • No: Proceed to step 3 • Yes : Proceed to step4
	Step 3 | Step ID 1562c | SRT Repair or replace component • Repair or replace the component, also check for electrical connection and wiring harness. • Reconnect the connector • ON the ignition key Use DAVIE to re-check for the presence of active faults: • Is DTC fault active: Proceed to step 4 • Is DTC fault inactive: Issue resolved. Clear inactive fault.
	Step 4 | Step ID 1562d | SRT For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.
Verification Drive Cycle	To verify the repair: With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics With the brakes set, start the engine and allow it to run at idle for 2 minutes
	Back to Index

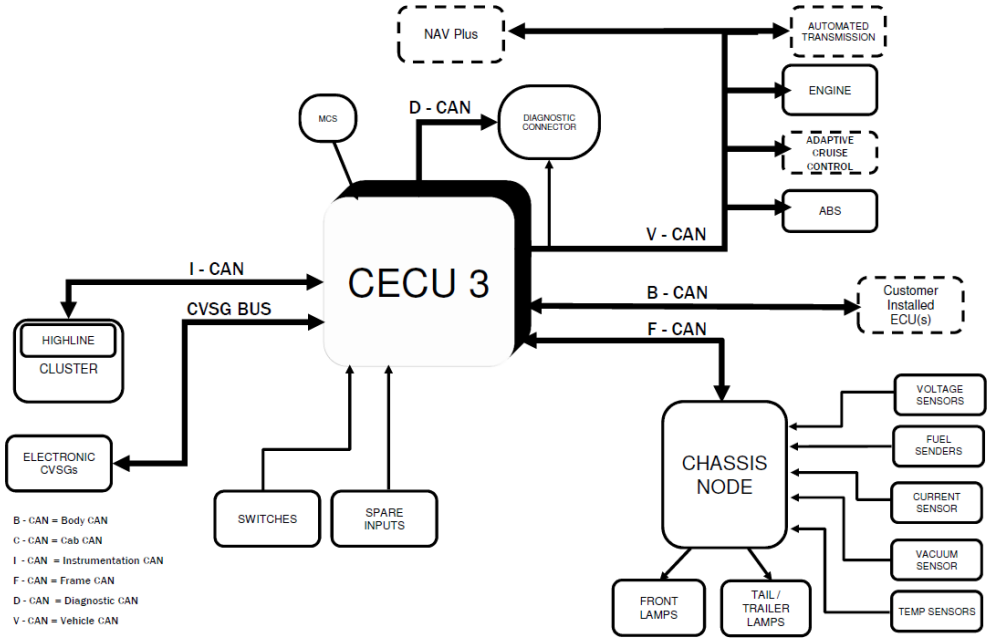
U1563

Code number	U1563
Fault code description	CAN communication - Message (ACM_Limits) out of range - Turbine outlet flow low limit request from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



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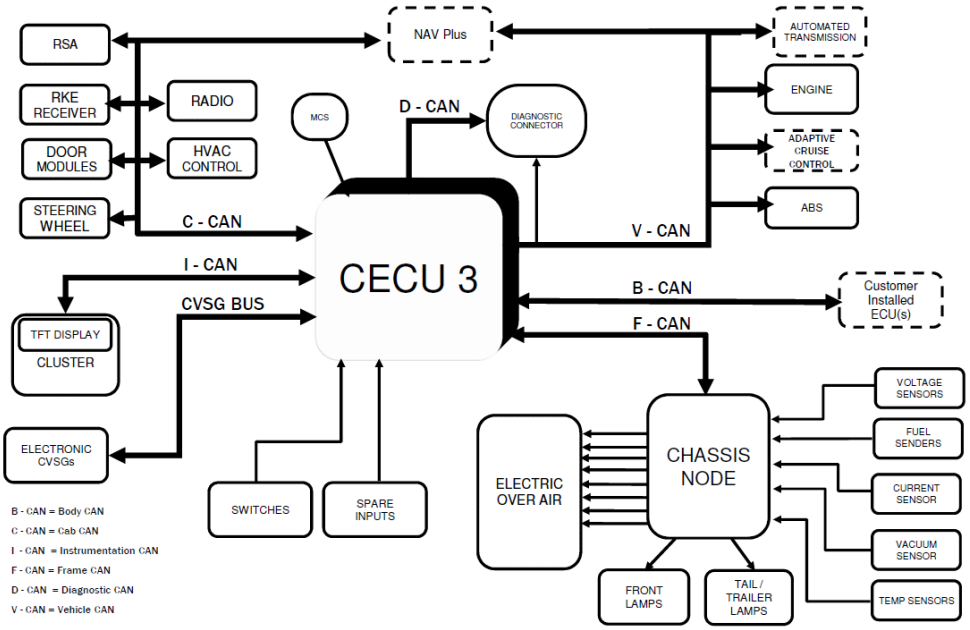
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Open circuit, short circuit to ground, or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1563a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

	Was there evidence of any of the above? • No: Proceed to step 2. • Yes: Make the appropriate repairs or component replacements. Use DAVIE to re-check for the presence of active faults. • If this related fault is no longer active, then this issue has been resolved. • If this related fault is still active, Proceed to step 2

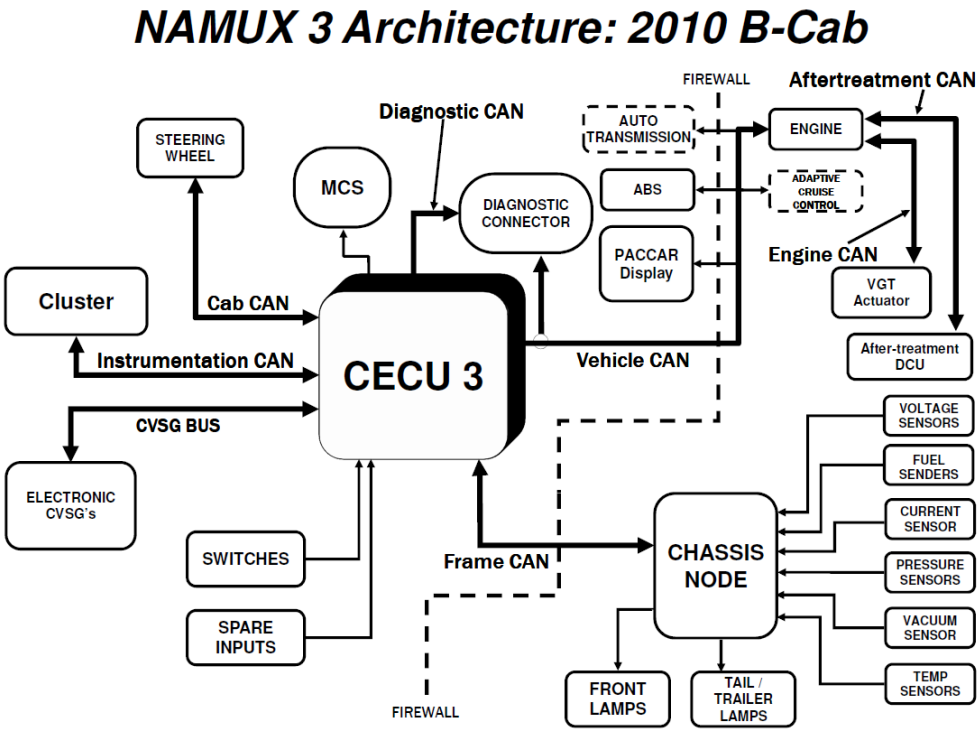
Step 2	Step ID 1563b	SRT
Data check • Lookup the technical data of the specific system • Perform the checking data test of the specific component Is test pass? • No: Proceed to step 3 • Yes : Proceed to step4		

Step 3	Step ID 1563c	SRT
Repair or replace component • Repair or replace the component, also check for electrical connection and wiring harness. • Reconnect the connector • ON the ignition key Use DAVIE to re-check for the presence of active faults: • Is DTC fault active: Proceed to step 4 • Is DTC fault inactive: Issue resolved. Clear inactive fault.		

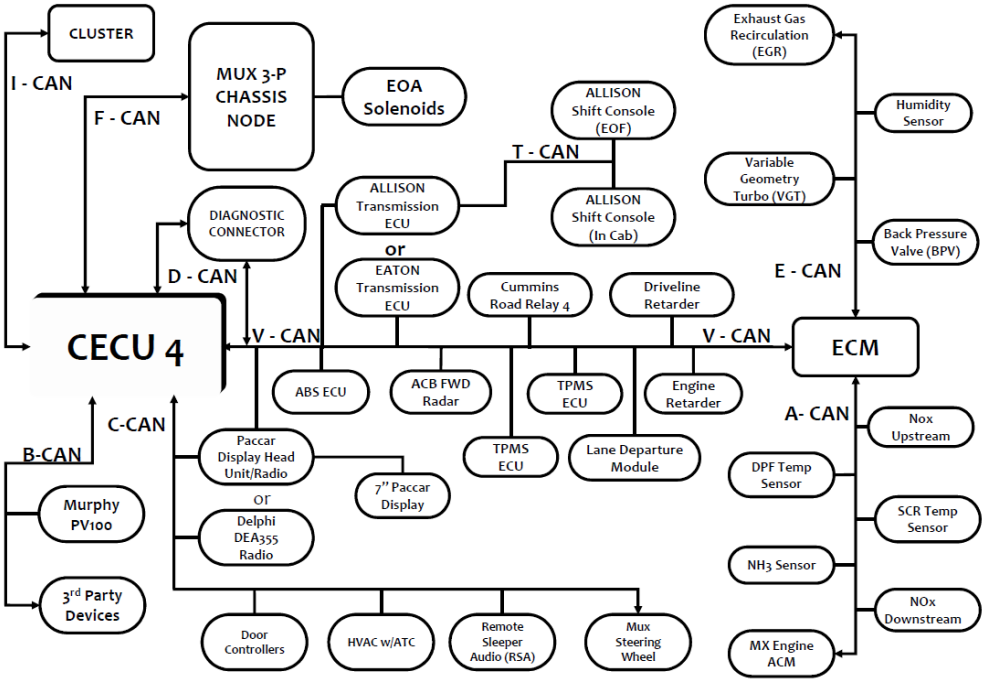
Step 4	Step ID 1563d	SRT
For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.		

Verification Drive Cycle	To verify the repair: With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics With the brakes set, start the engine and allow it to run at idle for 2 minutes
	Back to Index

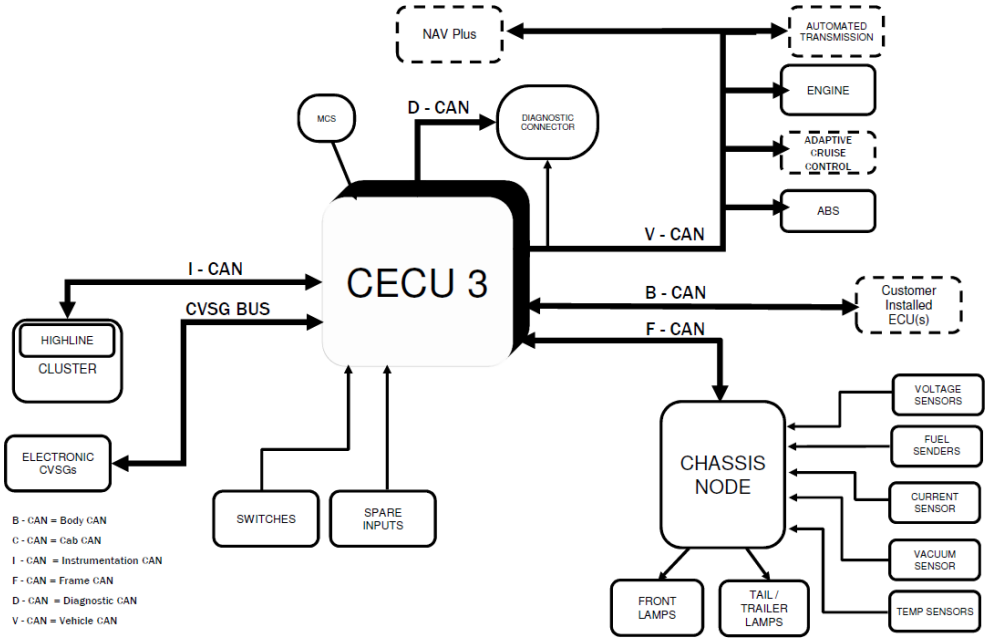
U1564

Code number	U1564
Fault code description	CAN communication - Message (ACM_Limits) out of range - Turbine outlet temperature low target torque from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



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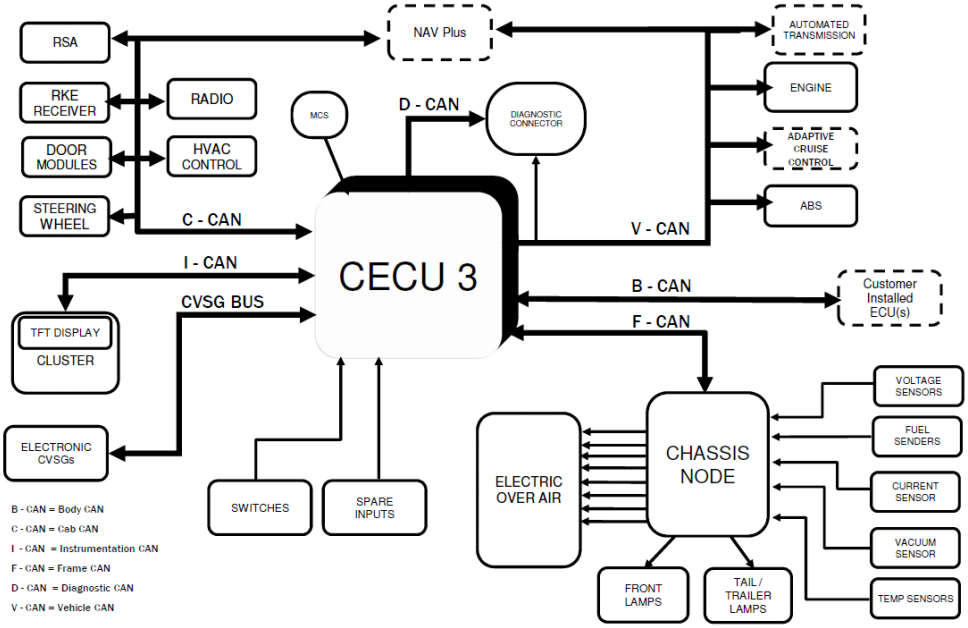
NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Open circuit, short circuit to ground, or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1564a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

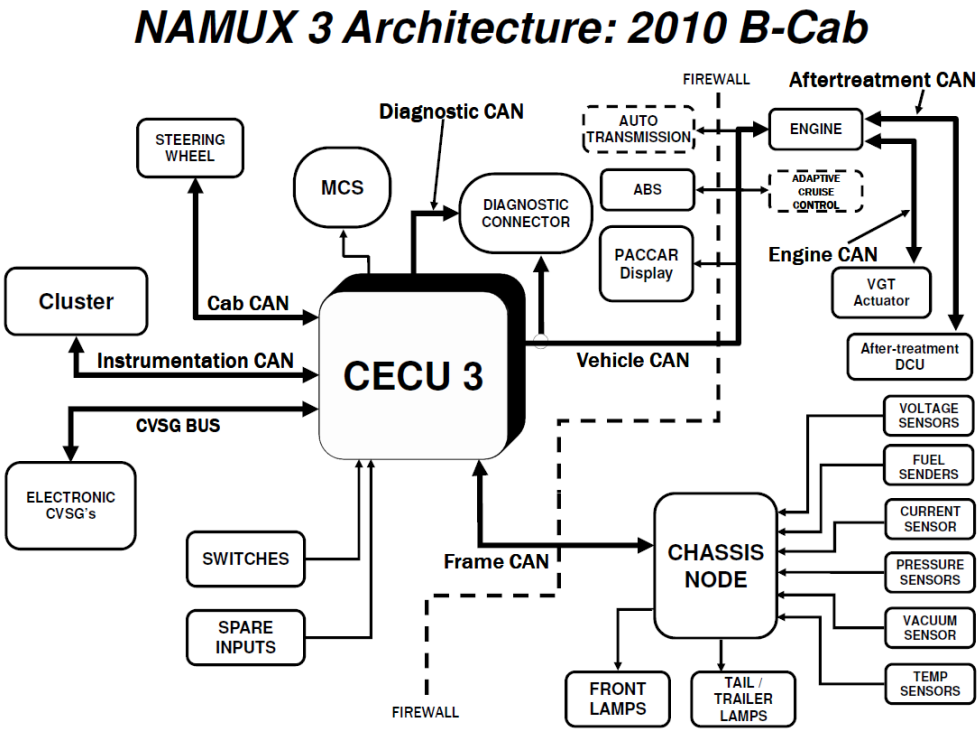
<table>
<tr><td></td><td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1564b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

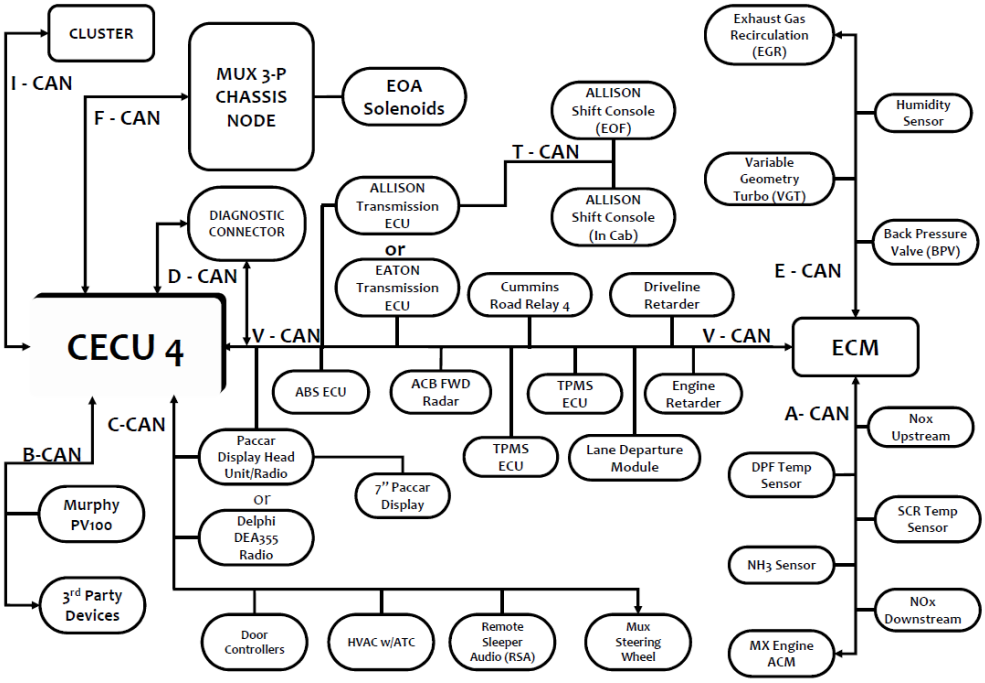
<table>
<tr><td>Step 3</td><td>Step ID 1564c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive: Issue resolved. Clear inactive fault.</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 1564d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To verify the repair:
With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics
With the brakes set, start the engine and allow it to run at idle for 2 minutes</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

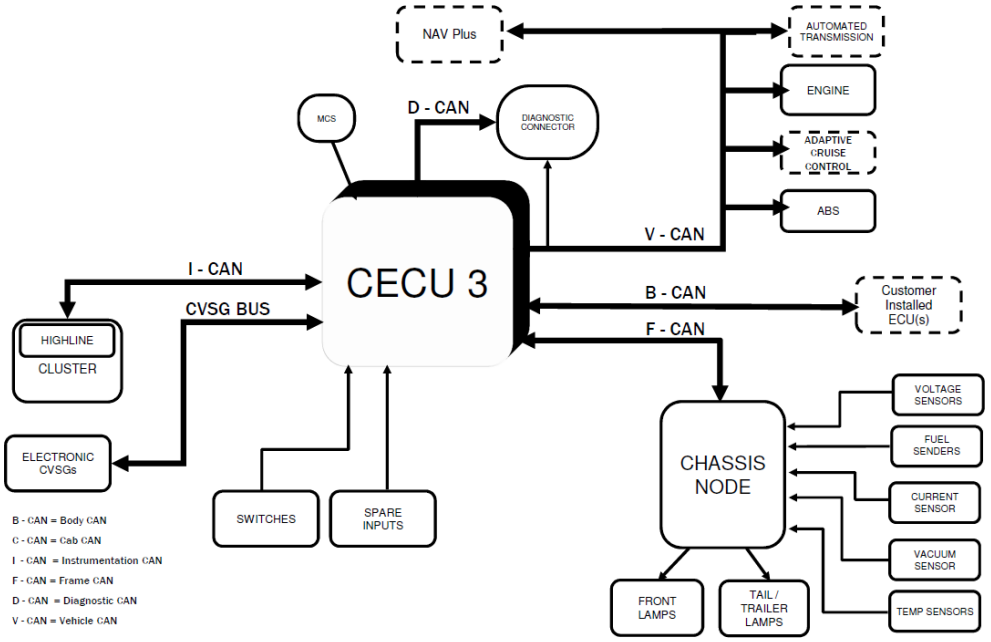
U1565

Code number	U1565
Fault code description	CAN communication – Message (ACM_Limits) out of range – Turbine outlet temperature upper limit torque from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



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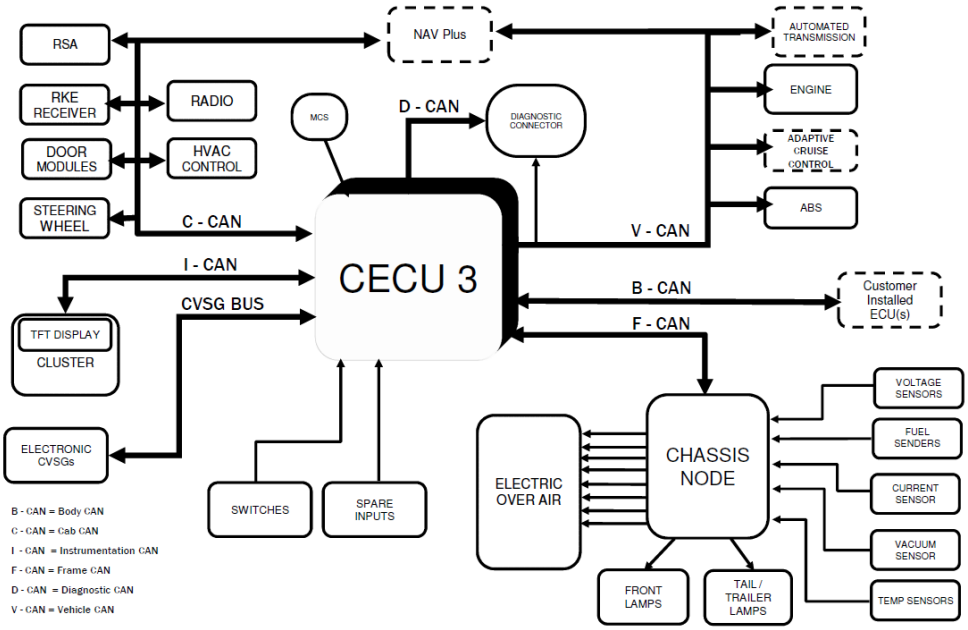
NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Open circuit, short circuit to ground, or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1565a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

Was there evidence of any of the above?
- No: Proceed to step 2.
- Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.
- If this related fault is no longer active, then this issue has been resolved.
- If this related fault is still active, Proceed to step 2

Step 2	Step ID 1565b	SRT

Data check
- Lookup the technical data of the specific system
- Perform the checking data test of the specific component

Is test pass?
- No: Proceed to step 3
- Yes : Proceed to step4

Step 3	Step ID 1565c	SRT

Repair or replace component
- Repair or replace the component, also check for electrical connection and wiring harness.
- Reconnect the connector
- ON the ignition key

Use DAVIE to re-check for the presence of active faults:
- Is DTC fault active: Proceed to step 4
- Is DTC fault inactive: Issue resolved. Clear inactive fault.

Step 4	Step ID 1565d	SRT

For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.

Verification Drive Cycle	To verify the repair: With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.
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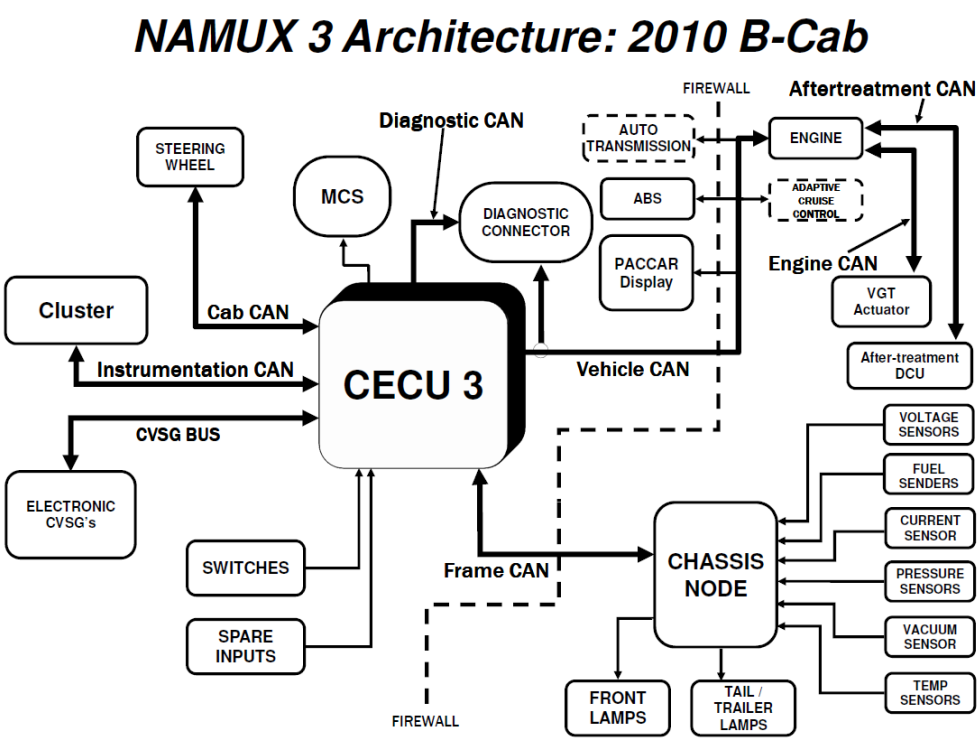
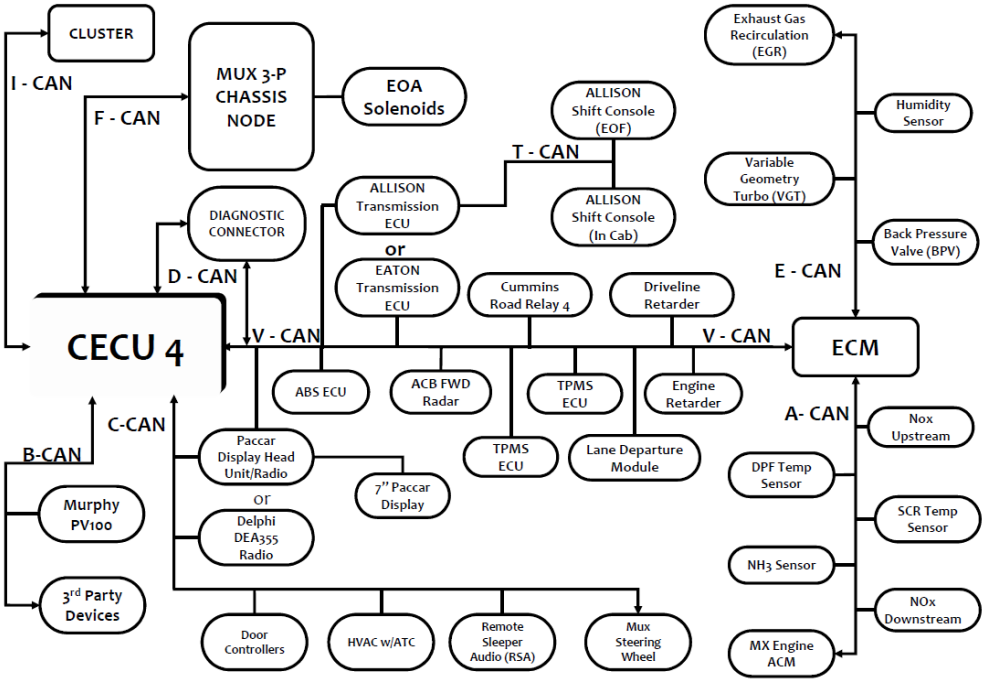
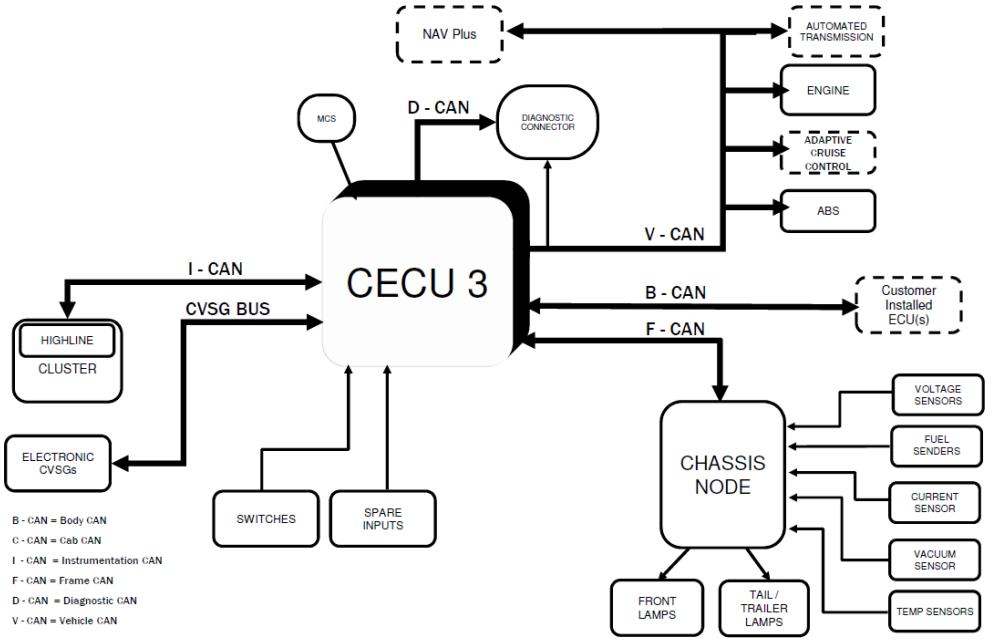
U1566

Code number	U1566
Fault code description	CAN communication – Message (ACM_Limits) rate too low from emission system
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	
Reset condition of fault code	This DTC changes to inactive as soon as the error is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



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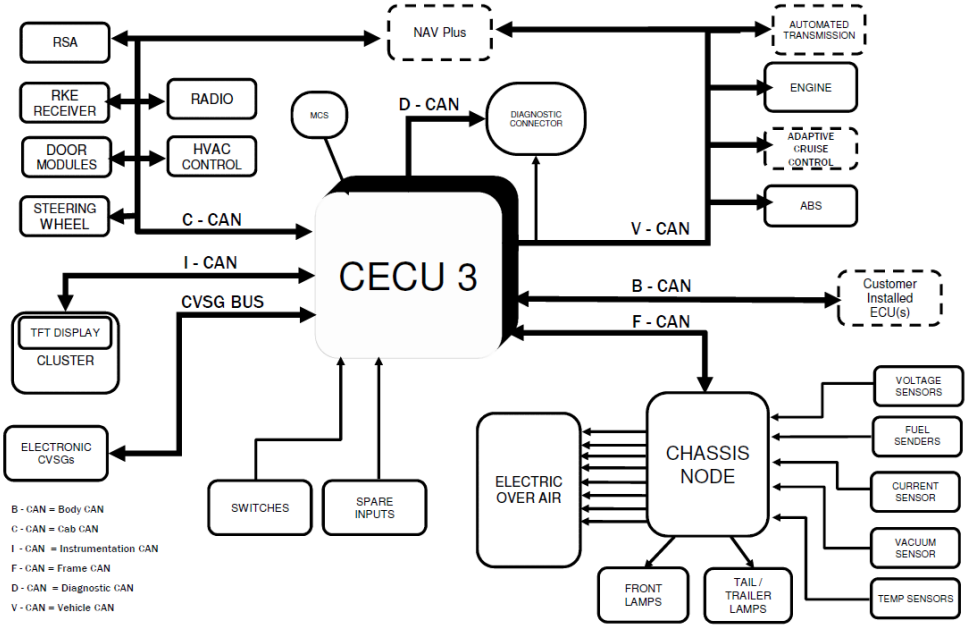
NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- Breakdown in communication in the CAN network
- Open circuit, short circuit to ground, or short circuit to supply in the CAN network wiring

</td></tr>
<tr><td>Additional information</td><td>No additional information available</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1566a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

Was there evidence of any of the above?

- No: Proceed to step 2.
- Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

- If this related fault is no longer active, then this issue has been resolved.
- If this related fault is still active, Proceed to step 2

Step 2	Step ID 1566b	SRT

Data check

- Lookup the technical data of the specific system
- Perform the checking data test of the specific component

Is test pass?

- No: Proceed to step 3
- Yes : Proceed to step4

Step 3	Step ID 1566c	SRT

Repair or replace component

- Repair or replace the component, also check for electrical connection and wiring harness.
- Reconnect the connector
- ON the ignition key

Use DAVIE to re-check for the presence of active faults:

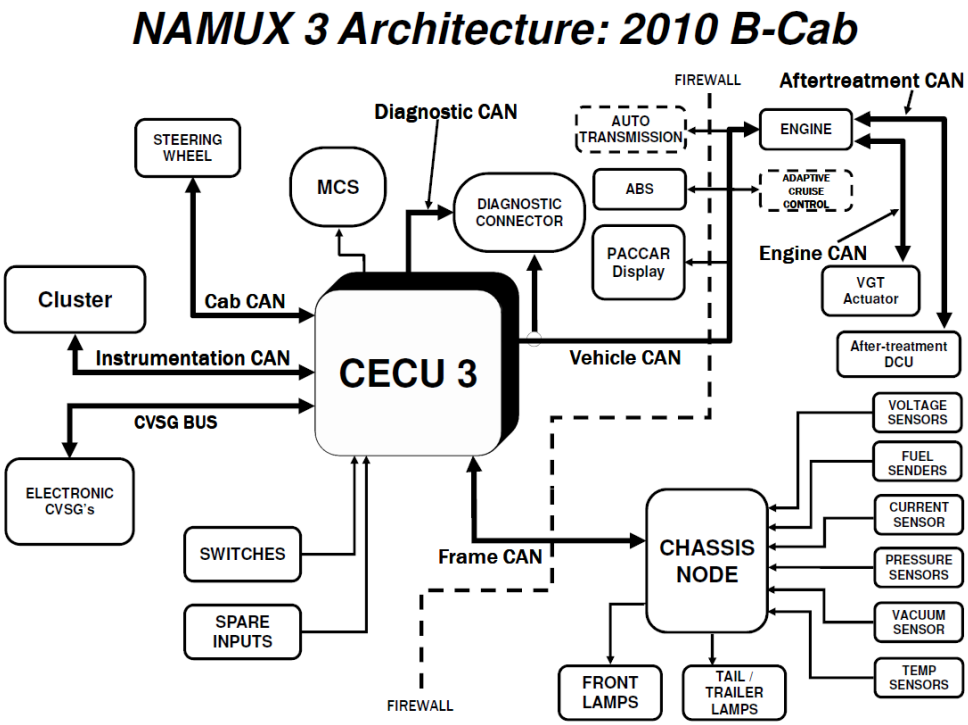
- Is DTC fault active: Proceed to step 4
- Is DTC fault inactive: Issue resolved. Clear inactive fault.

Step 4	Step ID 1566d	SRT

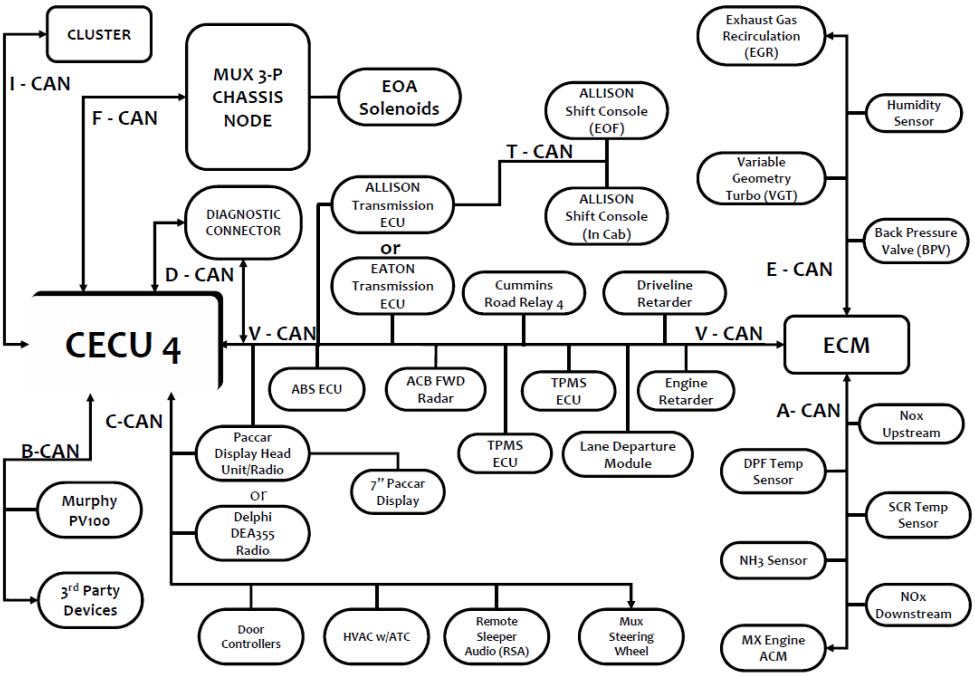
For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.

Verification Drive Cycle	To verify the repair: With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.
	Back to Index

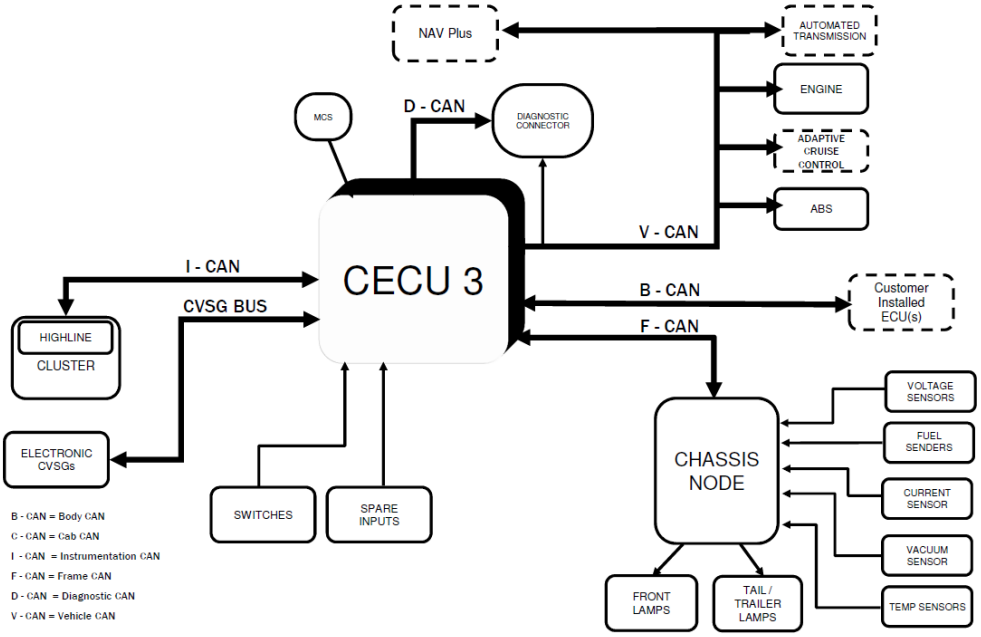
U1571

Code number	U1571
Fault code description	EGR valve module - CAN communication error - Message rate too low
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	The PCI ECU (D420) lost communication with the EGR valve module (L095).
Reset condition of fault code	This DTC changes to inactive after the ignition is keyed off for at least 15 seconds, keyed on again, and the fault is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680

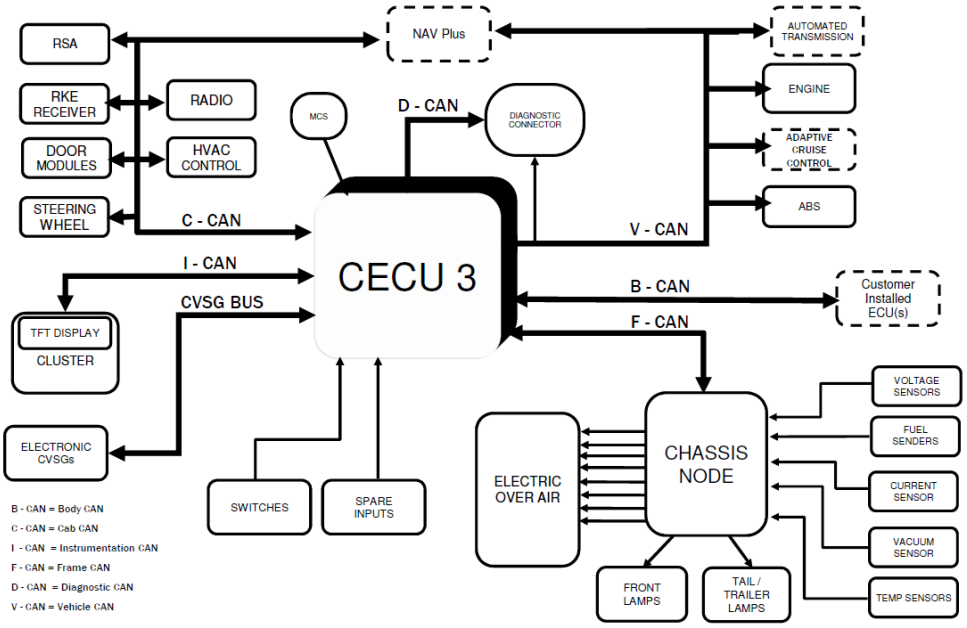


NAMUX 3 Architecture



<table>
<tr><td></td><td>

NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- EGR valve module power supply
- E-CAN communication
- Faulty EGR valve module

</td></tr>
<tr><td>Additional information</td><td>The EGR valve actuator is a smart actuator that communicates with the PCI ECU via E-CAN. The actuator ECU is controlled by the PCI ECU but has its own diagnostics.</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1571a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic</td></tr>
</table>

</td></tr>
</table>

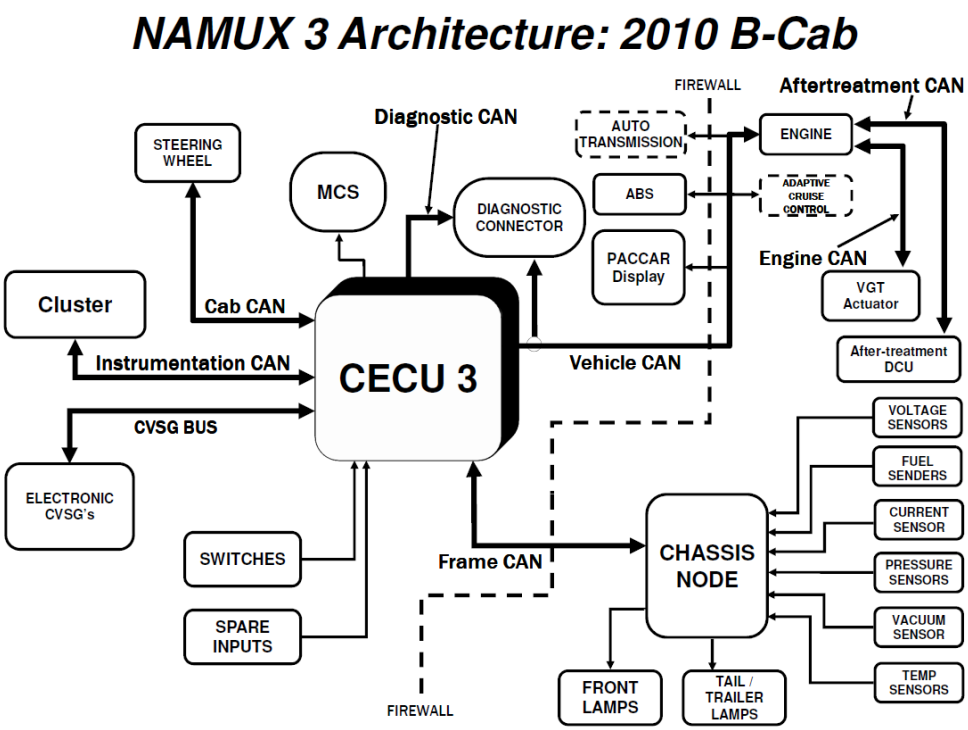
<table>
<tr><td></td><td>
procedure.
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1571b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step4</td></tr>
</table>

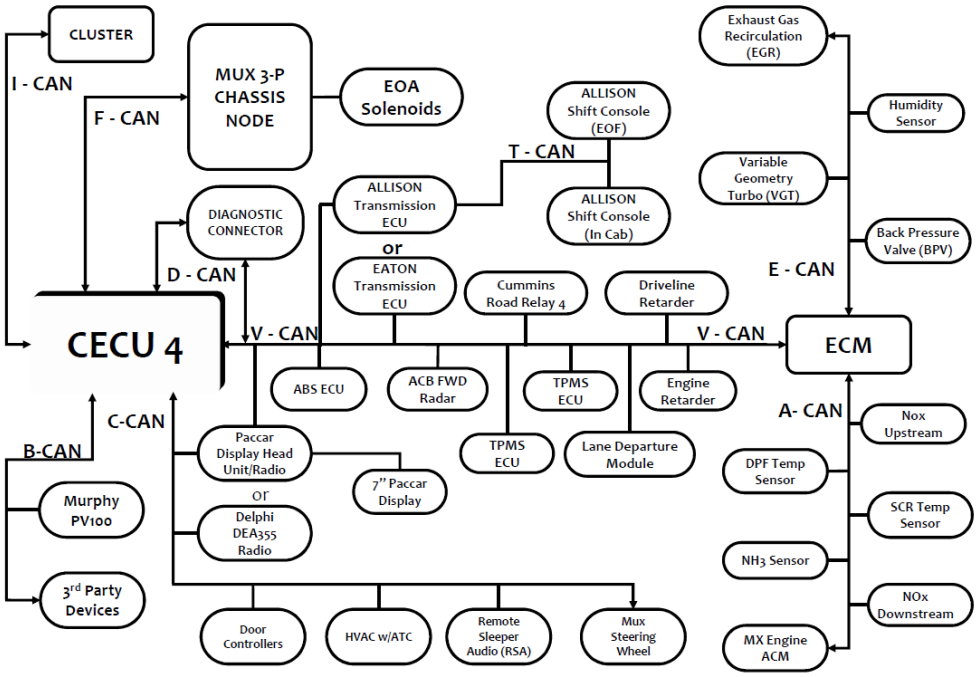
<table>
<tr><td>Step 3</td><td>Step ID 1571c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive: Issue resolved. Clear inactive fault.</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 1571d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To verify the repair:
With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics.
With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>

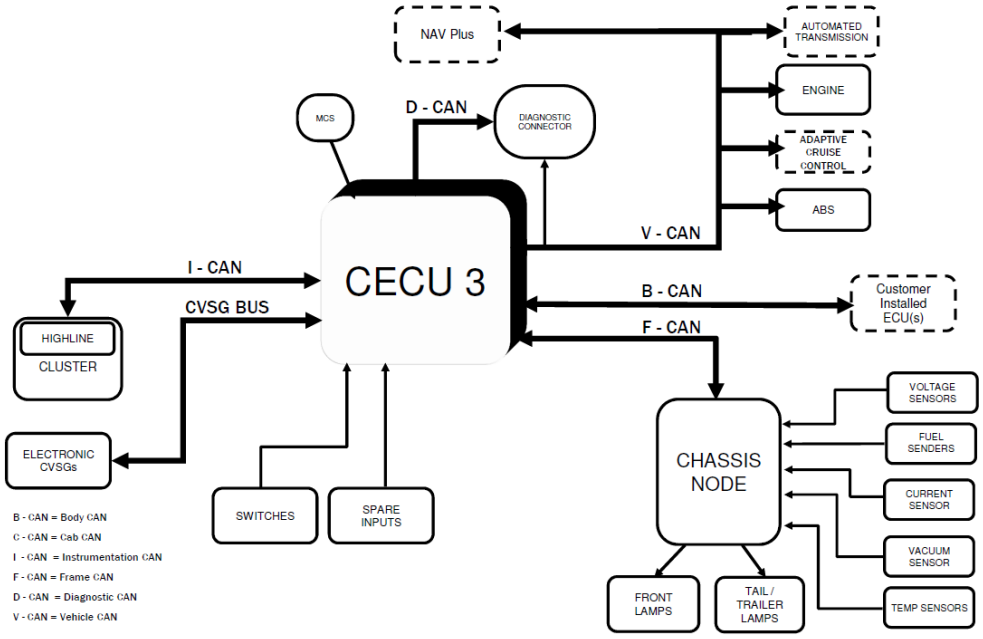
U1572

Code number	U1572
Fault code description	EGR valve module state – Data erratic, intermittent, or incorrect
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	The PCI ECU (D420) receives a CAN message from the EGR valve module (L095) that contains an out-of-range value for the actuator operating state.
Reset condition of fault code	This DTC changes to inactive after the ignition is keyed off for at least 15 seconds, keyed on again, and the fault is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



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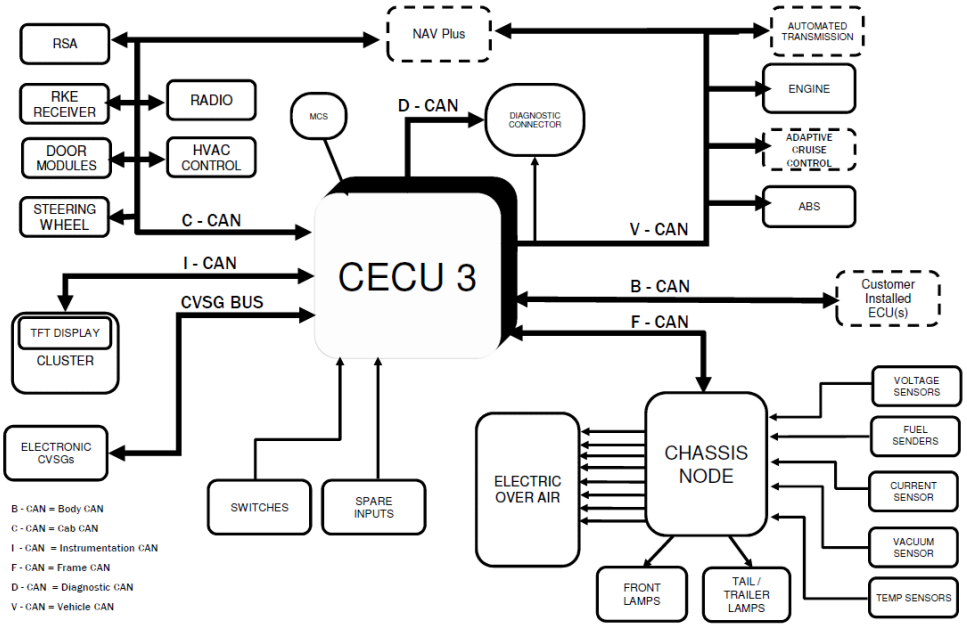
NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- E-CAN communication
- Faulty EGR valve module

</td></tr>
<tr><td>Additional information</td><td>The EGR valve actuator is a smart actuator that communicates with the PCI ECU via E-CAN. The actuator ECU is controlled by the PCI ECU but has its own diagnostics.</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1572a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

Was there evidence of any of the above?
- No: Proceed to step 2.
- Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.
- If this related fault is no longer active, then this issue has been resolved.
- If this related fault is still active, Proceed to step 2

Step 2	Step ID 1572b	SRT
Data check • Lookup the technical data of the specific system • Perform the checking data test of the specific component Is test pass? • No: Proceed to step 3 • Yes : Proceed to step 4		

Step 3	Step ID 1572c	SRT
Repair or replace component • Repair or replace the component, also check for electrical connection and wiring harness. • Reconnect the connector • ON the ignition key Use DAVIE to re-check for the presence of active faults: • Is DTC fault active: Proceed to step 4 • Is DTC fault inactive: Issue resolved. Clear inactive fault		

Step 4	Step ID 1572d	SRT
For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.		

Verification Drive Cycle	To verify the repair: With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.
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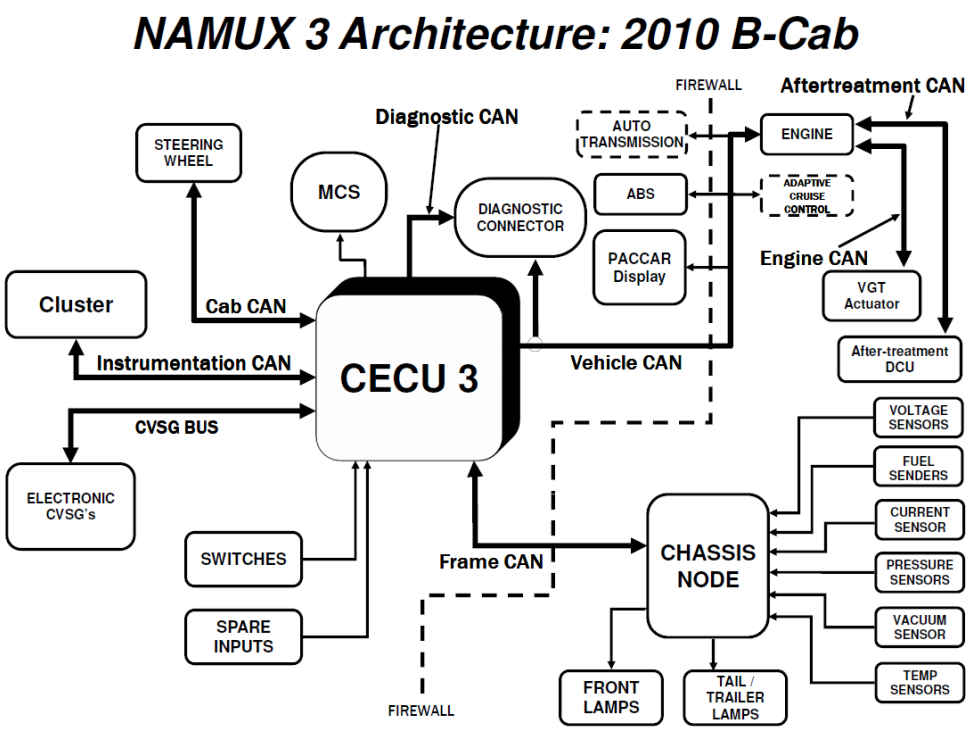
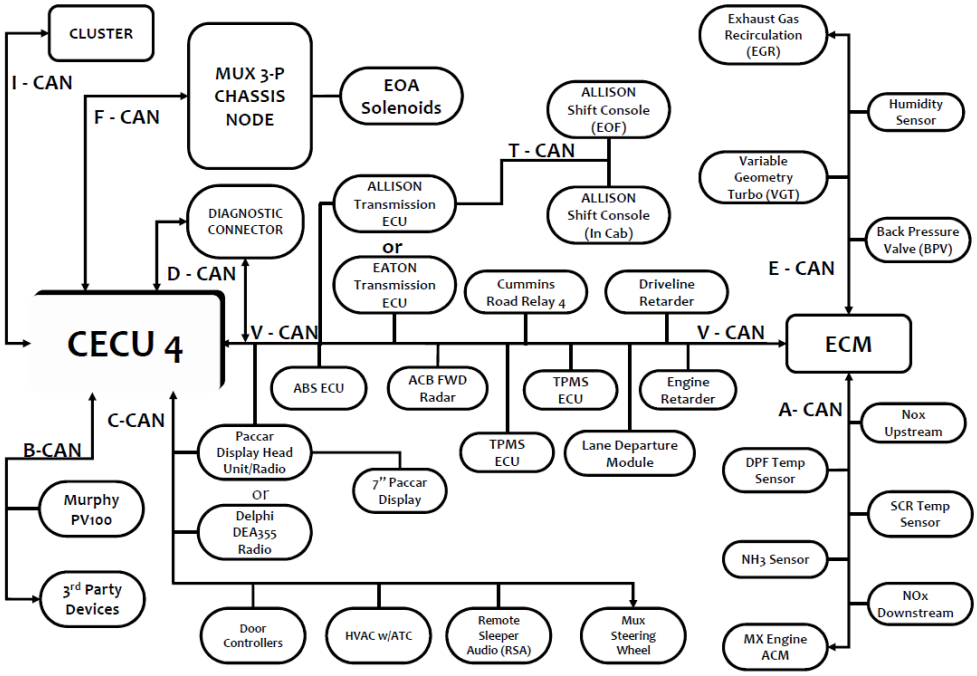
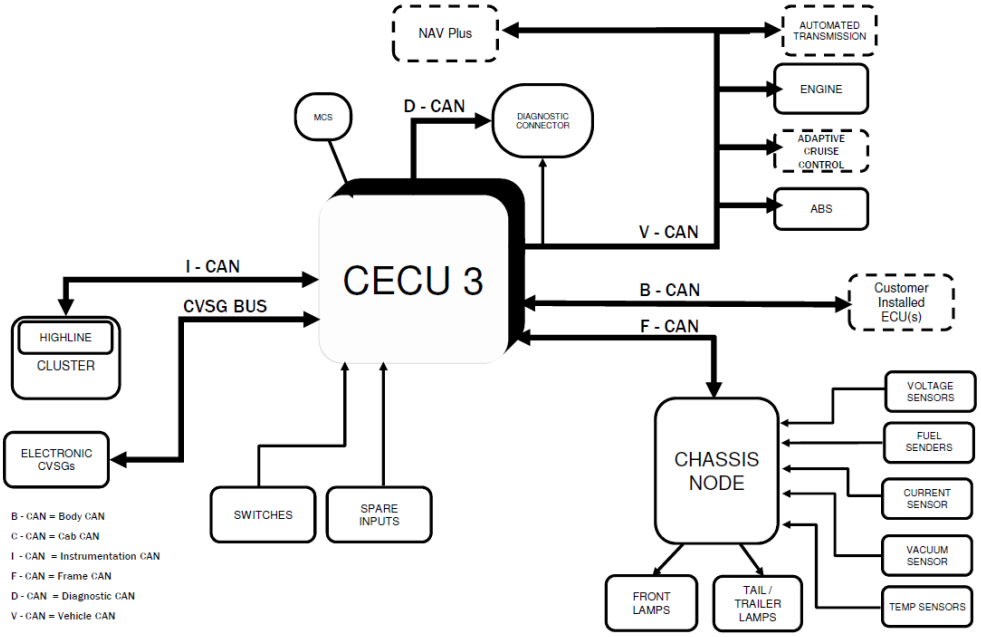
U1573

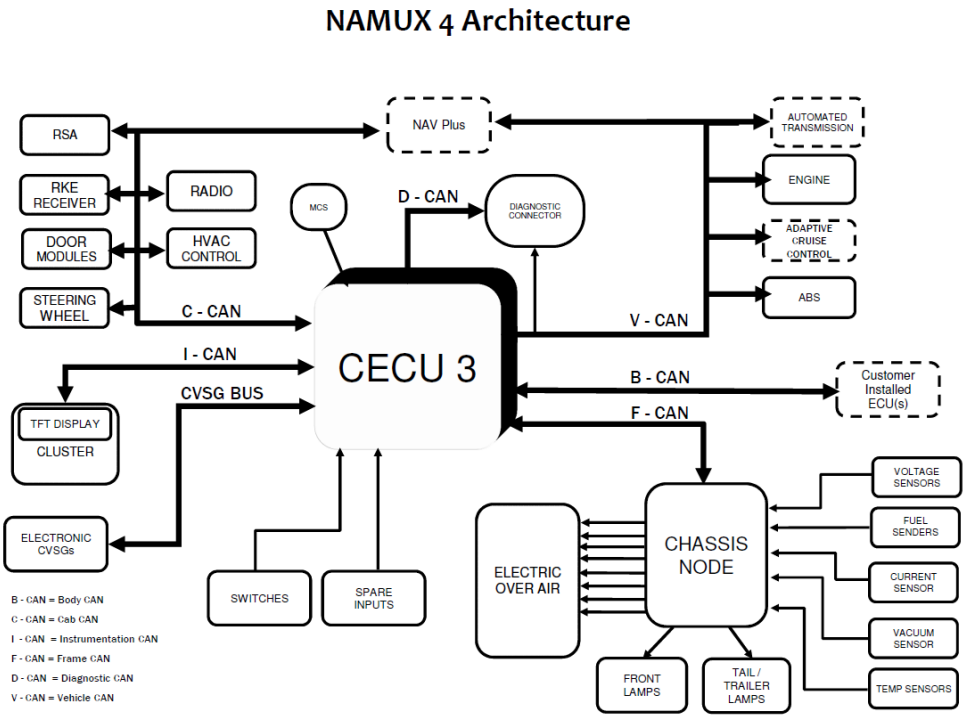
Code number	U1573
Fault code description	EGR valve module position – Data erratic, intermittent, or incorrect
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	The PCI ECU (D420) receives a CAN message from the EGR valve module (L095) that contains an out-of-range value for the actuator shaft position.
Reset condition of fault code	This DTC changes to inactive after the ignition is keyed off for at least 15 seconds, keyed on again, and the fault is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture





Technical data	This code relates to a communication issue and not to a specific component.
Possible causes	• E-CAN communication • Faulty EGR valve module
Additional information	• The EGR valve actuator is a smart actuator that communicates with the PCI ECU via E-CAN. The actuator ECU is controlled by the PCI ECU but has its own diagnostics. • The position of the actuator shaft, and therefore the position of the EGR valve, is monitored.
Diagnostic Step-by-Step	Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components. • Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors. • For specific electrical component information and pinout locations, always refer to the technical data. • It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors. • Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step 1	Step ID 1573a	SRT
Visual Inspection OFF the ignition key, disconnect the connector from component and ECU. Visually inspect all applicable connectors (bent, broken, corroded or loose pins)		

damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.
Was there evidence of any of the above?

- No: Proceed to step 2.
- Yes: Make the appropriate repairs or component replacements.

Use DAVIE to re-check for the presence of active faults.

- If this related fault is no longer active, then this issue has been resolved.
- If this related fault is still active, Proceed to step 2

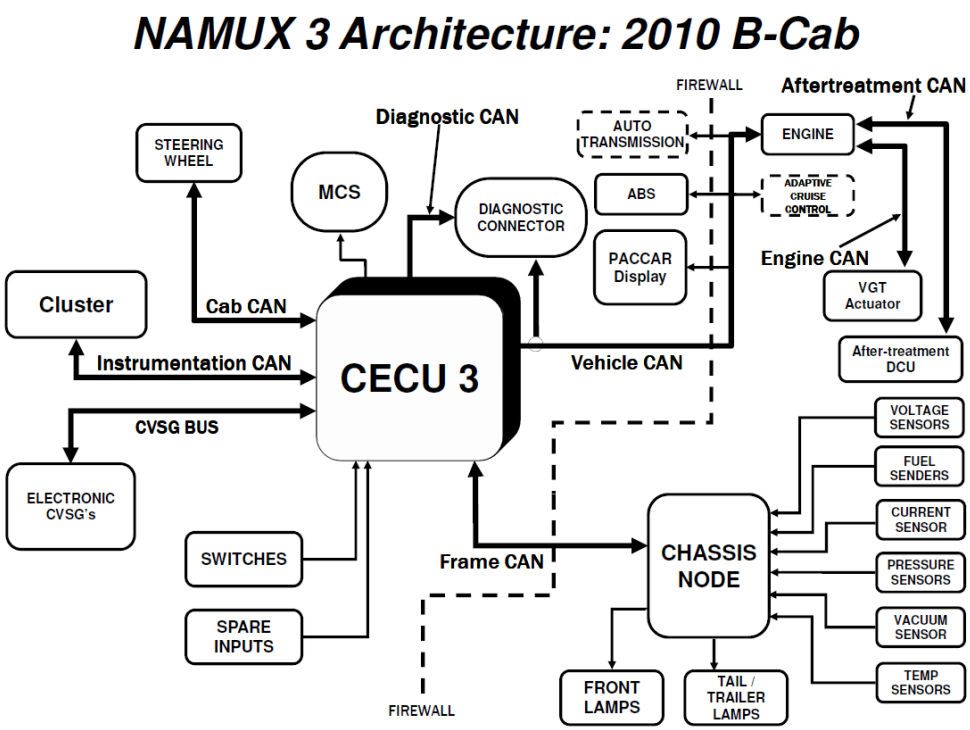
Step 2	Step ID 1573b	SRT
Data check • Lookup the technical data of the specific system • Perform the checking data test of the specific component Is test pass? • No: Proceed to step 3 • Yes : Proceed to step 4		

Step 3	Step ID 1573c	SRT
Repair or replace component • Repair or replace the component, also check for electrical connection and wiring harness. • Reconnect the connector • ON the ignition key Use DAVIE to re-check for the presence of active faults: • Is DTC fault active: Proceed to step 4 • Is DTC fault inactive: Issue resolved. Clear inactive fault		

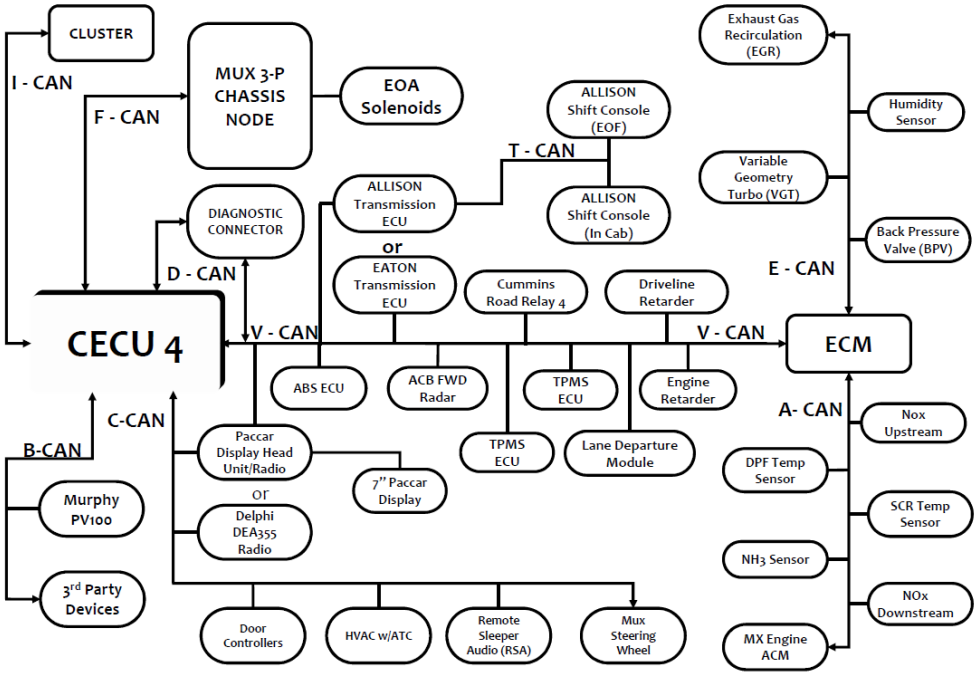
Step 4	Step ID 1573d	SRT
For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.		

Verification Drive Cycle	To verify the repair: With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics. With the brakes set, start the engine and allow it to run at idle for 2 minutes.
	Back to Index

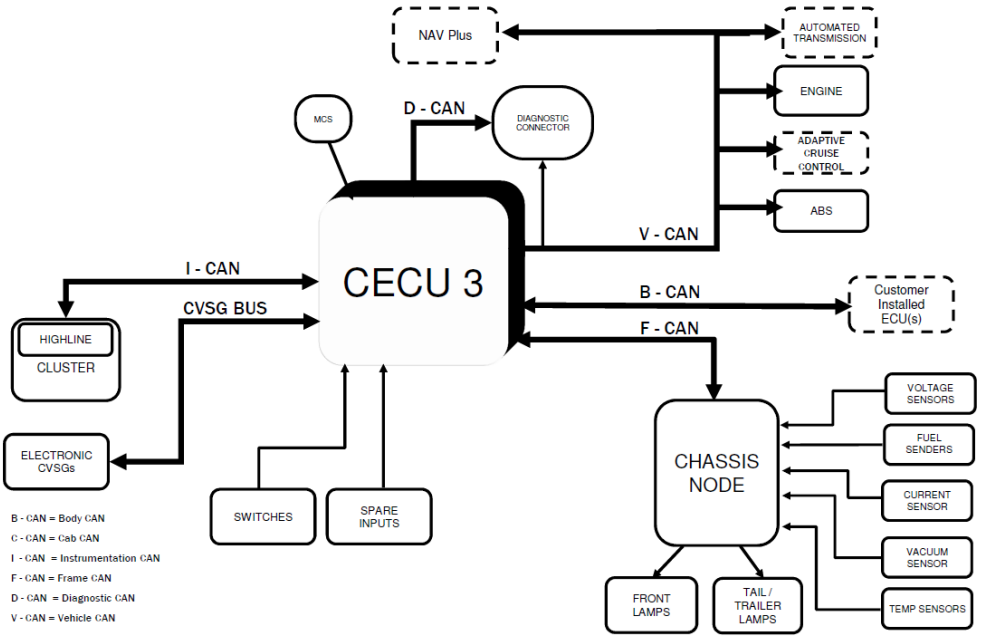
U1574

Code number	U1574
Fault code description	EGR valve module temperature – Data erratic, intermittent, or incorrect
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Generic
Description of component(s)	This code relates to a communication issue and not to a specific component.
Location of component(s)	This code relates to a communication issue and not to a specific component.
Diagnostic condition	This diagnostic runs continuously when the ignition is on.
Set condition of fault code	The PCI ECU (D420) receives a CAN message from the EGR valve module (L095) that contains an out-of-range value for the actuator temperature.
Reset condition of fault code	This DTC changes to inactive after the ignition is keyed off for at least 15 seconds, keyed on again, and the fault is no longer detected.
Electrical diagram(s)	

NAMUX 4 Architecture (Phase 1): T680



NAMUX 3 Architecture



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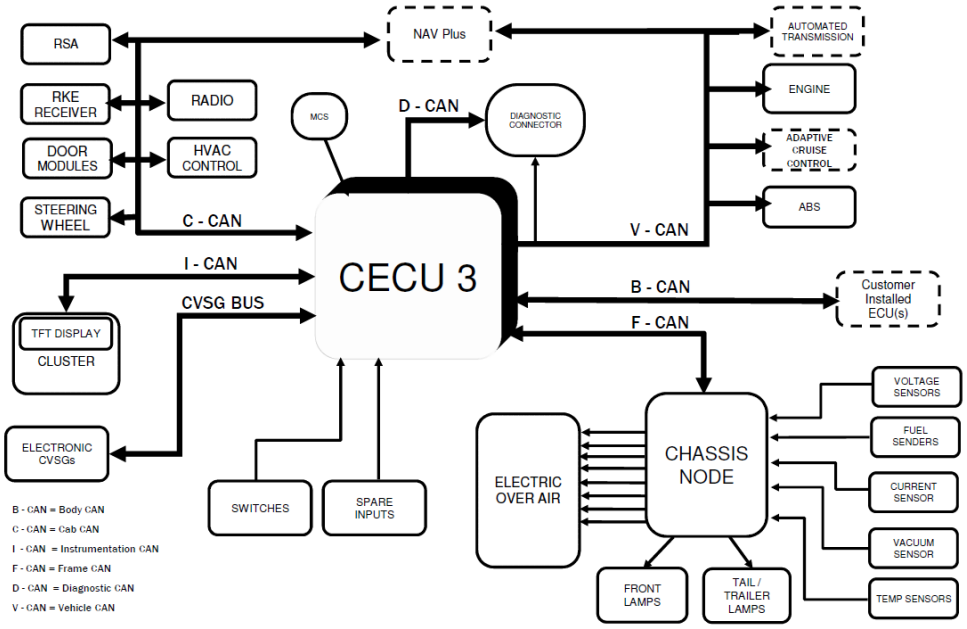
NAMUX 4 Architecture



</td></tr>
<tr><td>Technical data</td><td>This code relates to a communication issue and not to a specific component.</td></tr>
<tr><td>Possible causes</td><td>

- E-CAN communication
- Faulty EGR valve module

</td></tr>
<tr><td>Additional information</td><td>

- The EGR valve actuator is a smart actuator that communicates with the PCI ECU via E-CAN. The actuator ECU is controlled by the PCI ECU but has its own diagnostics.
- The temperature is measured on the (printed circuit board) of the actuator.

</td></tr>
<tr><td>Diagnostic Step-by-Step</td><td>

Perform the troubleshooting steps below using the breakout harness, if necessary, to check electrical components, such as sensors, electrical control units, and harnesses. Back probing is not recommended, as it could damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components in order to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pinout locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a change in errors.
- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

<table>
<tr><td>Step 1</td><td>Step ID 1574a</td><td>SRT</td></tr>
<tr><td colspan="3">Visual Inspection
OFF the ignition key, disconnect the connector from component and ECU.
Visually inspect all applicable connectors (bent, broken, corroded or loose pins) damage to wire harness, sign of exhaust leaks during each step of the diagnostic procedure.</td></tr>
</table>

</td></tr>
</table>

<table>
<tr><td></td><td>
Was there evidence of any of the above?
• No: Proceed to step 2.
• Yes: Make the appropriate repairs or component replacements.
Use DAVIE to re-check for the presence of active faults.
• If this related fault is no longer active, then this issue has been resolved.
• If this related fault is still active, Proceed to step 2

<table>
<tr><td>Step 2</td><td>Step ID 1574b</td><td>SRT</td></tr>
<tr><td colspan="3">Data check
• Lookup the technical data of the specific system
• Perform the checking data test of the specific component
Is test pass?
• No: Proceed to step 3
• Yes : Proceed to step 4</td></tr>
</table>

<table>
<tr><td>Step 3</td><td>Step ID 1574c</td><td>SRT</td></tr>
<tr><td colspan="3">Repair or replace component
• Repair or replace the component, also check for electrical connection and wiring harness.
• Reconnect the connector
• ON the ignition key
Use DAVIE to re-check for the presence of active faults:
• Is DTC fault active: Proceed to step 4
• Is DTC fault inactive: Issue resolved. Clear inactive fault</td></tr>
</table>

<table>
<tr><td>Step 4</td><td>Step ID 1574d</td><td>SRT</td></tr>
<tr><td colspan="3">For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the Engine Support Call Center at 1-800-477-0251.</td></tr>
</table>
</td></tr>
<tr><td>Verification Drive Cycle</td><td>To verify the repair:
With the brakes set, turn the key to the ON position with the engine off, and allow 10 seconds for the system to initialize and run diagnostics.
With the brakes set, start the engine and allow it to run at idle for 2 minutes.</td></tr>
<tr><td></td><td>Back to Index</td></tr>
</table>