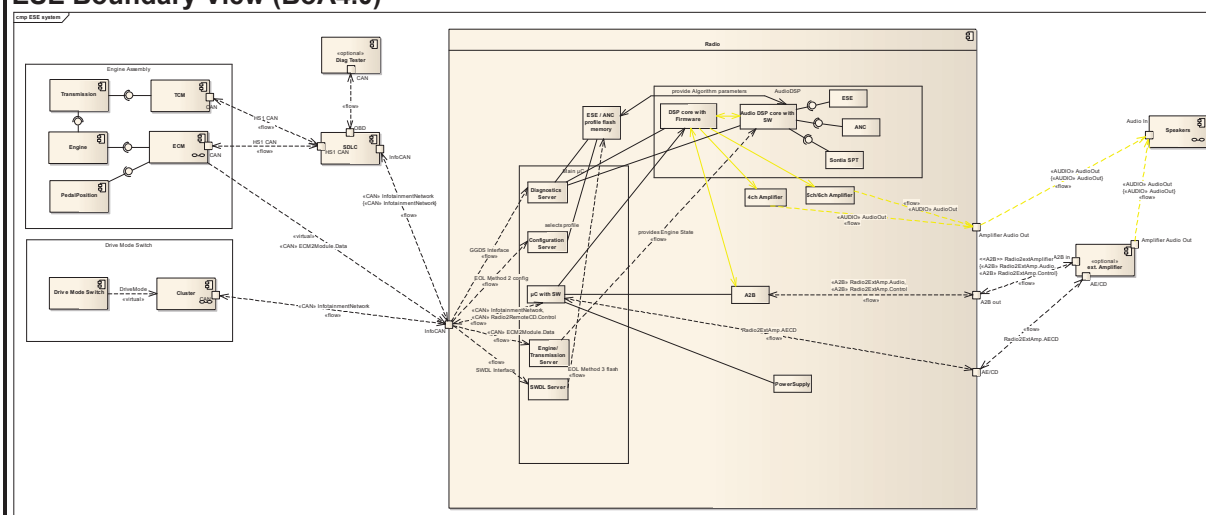### 2.1.3 ESE-REQ-205832/A-ESE Boundary View (BoA4.0)

**ESE Boundary View (BoA4.0)**



## 2.2 Interface Requirements

### 2.2.1 Diagnostics

#### 2.2.1.1 Fault Codes

2.2.1.1.1  <u>REQ-128322/B-E01B - Control Module Calibration Data #2 (ANC/ESE)</u>

| DTC | Condition | DTC Trigger | Fault Action | Configuration Associated |
|---|---|---|---|---|
| E01B54 Missing Calibration | Key in Run.  Voltage is between 10 and 16 volts. | ESE/ANC is missing configuration file or file is corrupted. | ESE/ANC functionality will be disabled. | ESE/ANC = present |
| E01B57 Data Invalid/ Incompatible Software Component | Key in Run.  Voltage is between 10 and 16 volts. | The installed ESE/ANC configuration is not compatible with config | ESE/ANC functionality will be disabled. | ESE/ANC = present |
| E01B04 Data System Internal Failure | Key in Run.  Voltage is between 10 and 16 volts. | Internal fault detected which prevents initializing ESE/ANC | ESE/ANC functionality will be disabled. | ESE/ANC = present |

2.2.1.1.2  <u>REQ-114769/B-C100 - LostCom 0x167 (CRANK) (Engine)</u>

| DTC | Condition | DTC Trigger | Fault Action | Configuration Associated |
|---|---|---|---|---|
| C10000 | Last known Key in RUN. Voltage is between 10 and 16 volts.  Last Known Ignition Stable Bit is Active. | Set when 0x167 is missing for more than five (5) seconds. | Radio will stop logging DTCs. | CGEA = 1.3 |

#### 2.2.1.1.3   REQ-114761/B-9A01 - Left Front speaker

| DTC | Condition | DTC Trigger | Fault Action | Configuration Associated |
|---|---|---|---|---|
| 9A0111 – Short to Ground 9A0112 – Short to Battery 9A0113 – open 9A0101 – short across | Key in Run, ACC, or Delayed Acc.  Voltage is between 10 and 16 volts. | ACM amp chip registers short to ground or short to battery. | ACM shuts down faulted Left Front speaker.  Chimes will be unavailable in ACM. | Front Speaker = Internal Amp or Speaker1A2B = Speaker or Speaker and Tweeter |

#### 2.2.1.1.4   REQ-114762/B-9A02 - Right Front speaker

| DTC | Condition | DTC Trigger | Fault Action | Configuration Associated |
|---|---|---|---|---|
| 9A0211 – Short to Ground 9A0212 – Short to Battery 9A0213 – open 9A0201 – short across | Key in Run, ACC, or Delayed Acc.  Voltage is between 10 and 16 volts. | ACM amp chip registers short to ground or short to battery. | ACM shuts down faulted Right Front speaker.  Chimes will be unavailable in ACM. | Front Speaker = Internal Amp or Speaker2 A2B = Speaker or Speaker and Tweeter |

#### 2.2.1.1.5   REQ-114763/B-9A03 - Right Rear speaker

| DTC | Condition | DTC Trigger | Fault Action | Configuration Associated |
|---|---|---|---|---|
| 9A0311 – Short to Ground 9A0312 – Short to Battery 9A0313 – open 9A0301 – short across | Key in Run, ACC, or Delayed Acc.  Voltage is between 10 and 16 volts. | ACM amp chip registers short to ground or short to battery. | ACM shuts down faulted Right Rear speaker.  Chimes will be unavailable in ACM. | Rear Speaker = Internal Amp or Speaker3 A2B = Speaker or Speaker and Tweeter |

#### 2.2.1.1.6   REQ-114764/B-9A04 - Left Rear speaker

| DTC | Condition | DTC Trigger | Fault Action | Configuration Associated |
|---|---|---|---|---|
| 9A0411 – Short to | Key in Run, ACC, or Delayed Acc.  Voltage is | ACM amp chip registers short to | ACM shuts down faulted Left Rear | Rear Speaker = Internal Amp or |

| Ground 9A0412 – Short to Battery 9A0413 – open 9A0401 – short across | between 10 and 16 volts. | ground or short to battery. | speaker. Chimes will be unavailable in ACM. | Speaker1 A2B = Speaker or Speaker and Tweeter |
| --- | --- | --- | --- | --- |

### 2.2.1.2  Routines

#### 2.2.1.2.1  ESE-IR-REQ-092301/B-ROUTINE 0x3008 "Trigger process to select calibration"

| Control Routine | 0x3008 |
| --- | --- |
| Control Routine Name | Trigger process to select calibration |
| Executable in Sessions | 0x03 |
| Security Levels Required to Run | 0x03, |
| Routine Entry Criteria | ACU must be powered and in extended diag session. Level 3 security must be unlocked. |
| Routine Exit Criteria | Routine completes |
| Maximum Routine Run Time | 200  (ms) |
| Can Restart While Running | no |
| Supported Sub Functions | 0x01 |
| Dependencies | ESE |

This enables ESE and/or ANC feature, depends of module configuration.

#### 2.2.1.2.2  ESE-IR-REQ-018086/B-ROUTINE 0x601C "Transfer Function Test tone" (TcSE ROIN-293182)

| Control Routine | 0x601C |
| --- | --- |
| Control Routine Name | Tones Test |
| Control Routine Description | Generates ESE calibration tones. |
| Executable in Sessions | 0x03 |
| Security Levels Required to Run | |
| Routine Entry Criteria | ACU must be powered and switched on or in Idle Mode (HMI switched off, CAN active). Notes: The radio can be switched on/off by writing with service 2E to PID $7215. |
| Routine Exit Criteria | Tones Test Completes. Receipt of RoutineControl with RoutineControlType = StopRoutine. Switch Radio Off |
| Maximum Routine Run Time | 30000  (ms) |
| Can Restart While Running | no |
| Supported Sub Functions | 0x01  0x02  0x03 |
| Dependencies | ESE |

Routine continues until completed as signaled by MBBM library.

### 2.2.1.3  Identifiers

#### 2.2.1.3.1  REQ-128316/A-Engine RPM (F40C)

| DID Number (Hex) | DID Description | DID Short Name | DID Size (Bytes) | Datatype |
| --- | --- | --- | --- | --- |
| F40C | Engine RPM | | 2 | Unsigned Numeric |