Enhanced DAT Error Handling Function – V1.0

1 Enhanced DAT Error Handling Function

1.1 Functional Description

This STSS describes the error handling strategy for enhanced DAT. When APIM does not receive signals from IPMB_EPC within the specified period, APIM will display a warning message and set the DTC to be recorded.

It only covers error types of lost communication, other feature/function errors are not included in this STSS.

1.2 Interfaces

1.2.1 Interface Context Diagram (I/O Block Diagram)

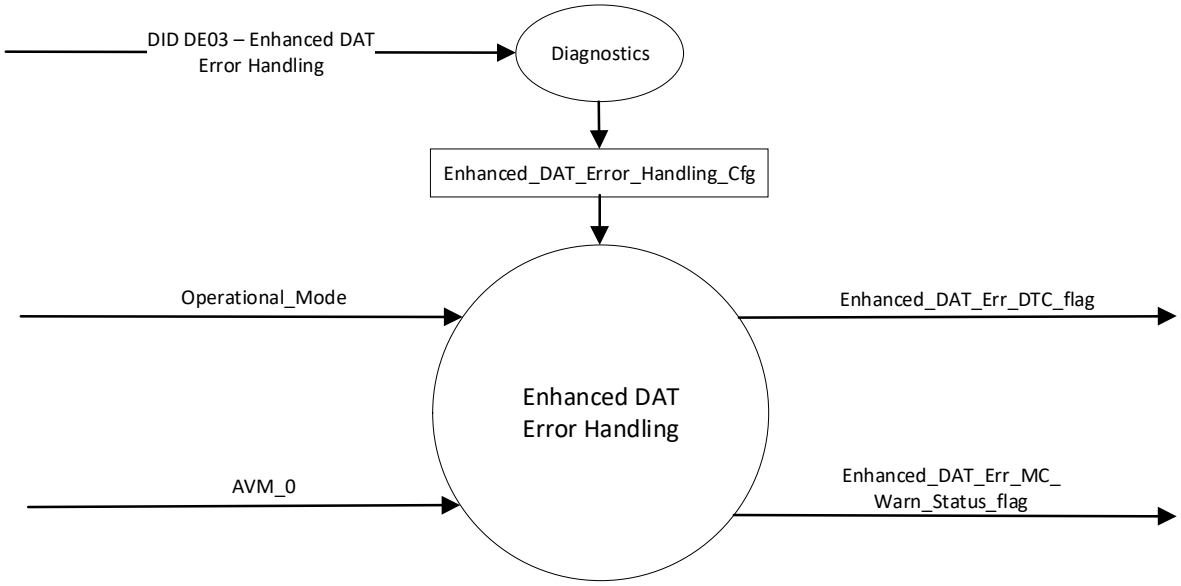

Figure 1: Enhanced DAT Error Handling Function I/O Block Diagram

1.2.2 Inputs

1.2.2.1 INTERNAL

- Operational_Mode

1.2.2.2 Signals on the Private CAN Bus from IPMB_EPC

Msg Name	Signal Name	Msg Cycle Time (ms)	Start Byte	Start Bit	Size (bits)	Res.	Offset	Min	Max
AVM_0	Prk_IVIFunc_Req	20	0	7	3	1	0	0	7
	AVM_PageDispReq	20	0	4	2	1	0	0	3
	AVM_2DViewDispReq	20	0	2	4	1	0	0	15
	AVM_Current_3DAngle	20	1	14	9	1	0	0	511

1.2.3 Outputs

1.2.3.1 INTERNAL

- Enhanced_DAT_Err_DTC_flag, which is used to control the state of the DTC.
- Enhanced_DAT_Err_MC_Warn_Status_flag, which is used to control the state of the warning message.

1.3 Function/Performance

1.3.1 Operational Modes

Mode	Differentiating Vehicle Conditions
Sleep Mode	Enhanced DAT Error Handling function Disabled
Limited Mode	Enhanced DAT Error Handling function Disabled
Normal Mode	Enhanced DAT Error Handling function Enabled
Crank Mode	Enhanced DAT Error Handling function Enabled

1.3.2 Subsystem Algorithm Flowchart / State Diagram

1.3.2.1 Part of CAN Diagnostic Routine

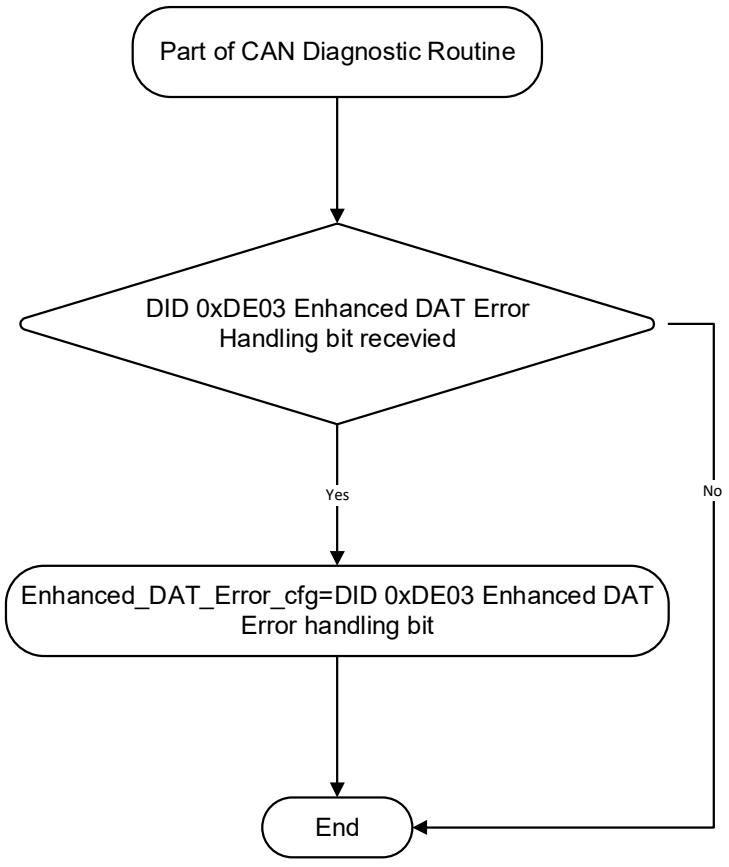

Figure 2: Part of CAN Diagnostic Routine

1.3.2.2 Enhanced DAT Error Warning Process Flowchart

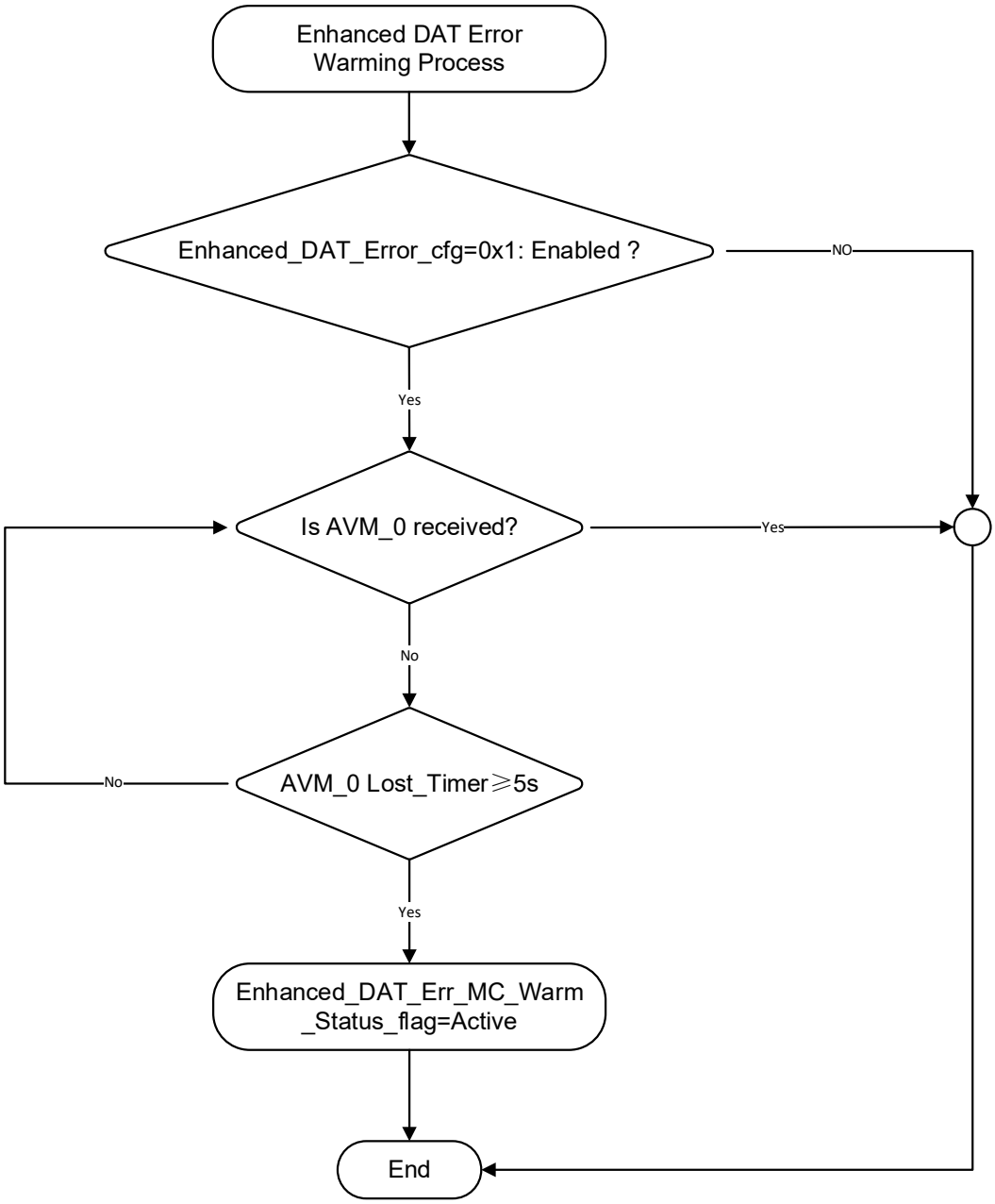

Figure 3: Enhanced DAT Error Warning Process Flowchart

1.3.2.3 Enhanced DAT Error DTC Process Flowchart

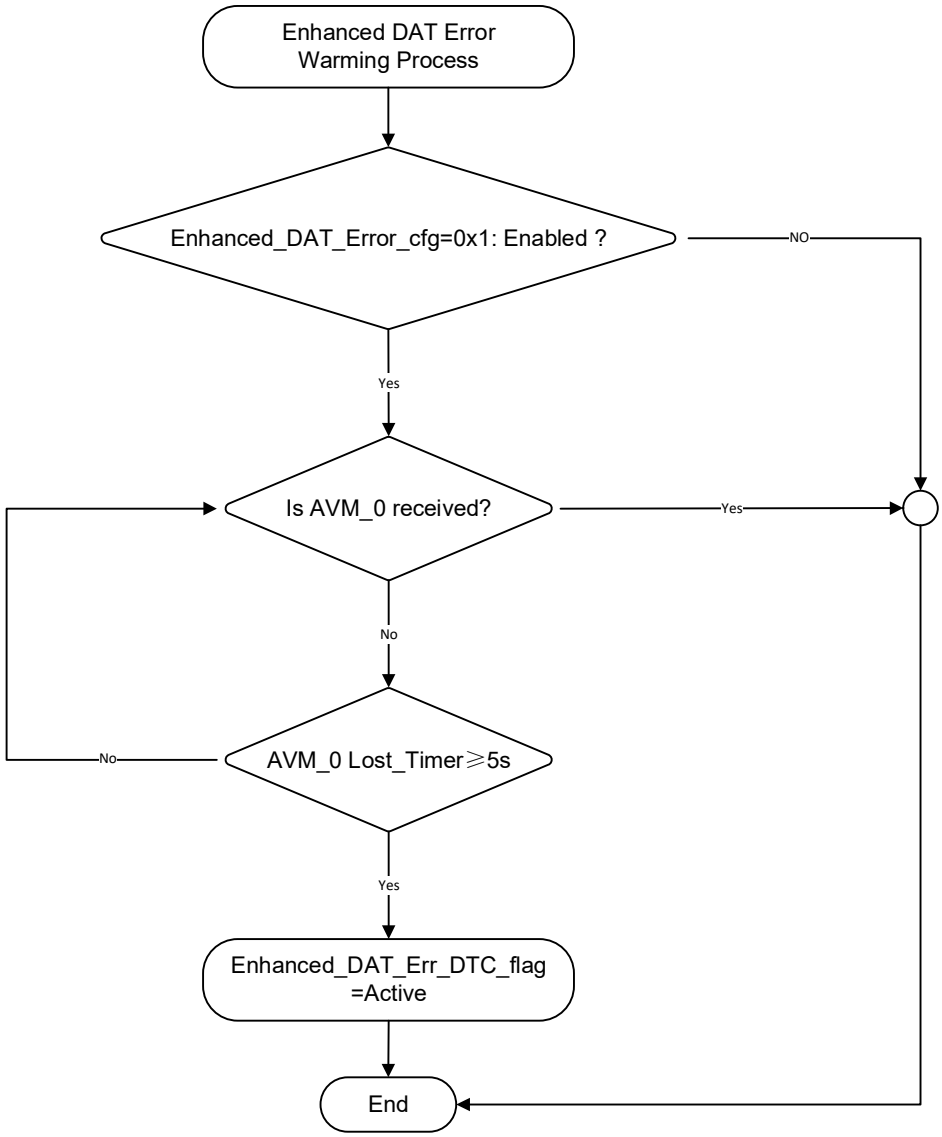

Figure 4: Enhanced DAT Error DTC Process Flowchart

1.3.3 Human-Machine Interface

1.3.3.1 Visual

When AVM_0 lost communication for 5s or more, APIM will display the corresponding warning message. In figure 5, the part circled in red is the warning message example graphic, the warning message consists of a title, a simple description and a “confirm” button.

The priority of this warning message is defined as level 4, according to the definition of APIM Message Center, the warning message with priority 4 can be displayed for 10s at most. When the display time reaches 10s, or the user clicks the “confirm” button within 10s, the warning message will disappear, but can be looked up in the history message. Figure 6 is the example graphic for history message.

Specifically, figure 5 and figure 6 are for reference only, the final graphics and texts to be provided by HMI.

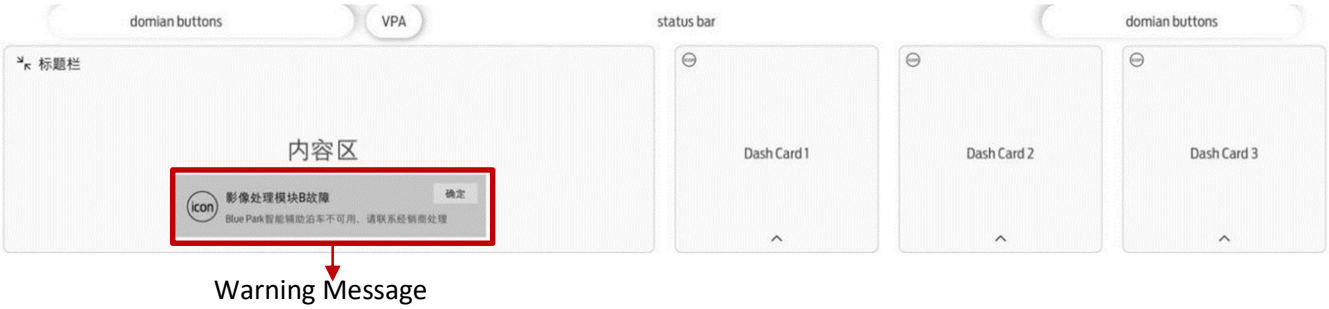

Figure 5: Enhanced DAT Error DTC Warning Message Example Graphic

Figure 6: Message Center History Massage Example Graphic

1.3.3.2 Voice

Refer to <【CX821】APA&Backtrack_IVI Popup&Sound Reminding>

1.3.4 Diagnostics

When AVM_0 lost communication for 5s or more, APIM will report the private CAN signals lost event to the public CAN, which will be recorded by DTC.

DTC	Description
C23B00	Lost Communication with IPMB (Image Processing Module “B”)

1.4 Reference Specification

<【CX821】APA&Backtrack_IVI Popup&Sound Reminding >

1.5 Revision History

Revision	Change Description	Responsible	Date
1.0	Initial release.	TongJingwei	2023.03.31