



Association for Standardisation of
Automation and Measuring Systems

ASAM MCD-1 POD

Plug-On Device Interface

Standard Interface Specification

Version 1.0.0

Date: 2017-05-18

Base Standard

© by ASAM e.V., 2017

Disclaimer

This document is the copyrighted property of ASAM e.V.
Any use is limited to the scope described in the license terms. The license
terms can be viewed at www.asam.net/license

Table of Contents

1 INTRODUCTION	7
1.1 Overview - Motivation	7
1.2 Scope of the standard.....	7
2 GENERAL INFORMATION – RELATED TOPICS	8
2.1 System architecture – main components	8
2.1.1 A2L File.....	8
2.1.2 Tool.....	8
2.1.3 POD.....	8
2.1.4 PSS	9
2.1.5 POD - API	9
2.1.6 EAP	10
2.2 ECU Resource Handling	10
2.3 Configuration Concept Overview	10
2.3.1 Background and Examples	10
2.3.1.1 Definition phase.....	11
2.3.1.2 Integration phase.....	12
2.3.1.3 POD setup phase	12
2.3.1.4 POD detection and initialization phase	13
2.3.2 Variant	13
2.3.3 Configuration.....	13
2.3.4 Scenario.....	14
2.4 ECU – PSS – POD interaction - timing at startup	14
3 TECHNICAL USE CASES	17
3.1 Use Case 1: POD Configuration	17
3.1.1 Description.....	17
3.1.2 Requirements.....	17
3.1.3 Preconditions	18
3.1.4 Main Flow	18
3.2 Use Case 2: POD Detection	20
3.2.1 Description.....	20
3.2.2 Requirements.....	20
3.2.3 Precondition	21
3.2.4 Main Flow	21
3.3 Use Case 3: PSS Initialization.....	25
3.3.1 Description.....	25
3.3.2 Requirements.....	25
3.3.3 Preconditions	26
3.3.4 Main Flow	26
3.4 Use Case 4: Synchronous Measurement.....	27
3.4.1 Description.....	27
3.4.2 Requirements.....	27
3.4.3 Preconditions	28
3.4.4 Main Flow	28

3.5 Use Case 5: Calibration.....	29
3.5.1 Description.....	29
3.5.2 Requirements.....	29
3.5.3 Preconditions	30
3.5.4 Main Flow	30
4 POD - API	34
 4.1 ASAM POD PSS Types and Definitions	34
4.1.1 Introduction	34
4.1.2 Global flag: A_PSS_MB_CHANNEL_FLAG_HW_CLEAR_ON_READ.	34
4.1.3 Global flag: A_PSS_CAL_SET_INHIBIT_PAGE_SWITCH.....	34
4.1.4 Global flag: A_PSS_CAL_CLEAR_INHIBIT_PAGE_SWITCH.....	34
4.1.5 Global flag: A_PSS_CAL_SET_EMERGENCY_MODE	34
4.1.6 Global flag: A_PSS_ECU_PAGE_SWITCH_REQUEST	35
4.1.7 Global flag: A_PSS_SWITCH_PAGE_ON_ALL_SEGMENTS	35
4.1.8 Definition of Return Codes	35
4.1.9 Definition of Calibration Page Switch Status Codes	36
4.1.10 Definitions of A_PSS Features.....	36
4.1.11 Definitions of A_PSS Function Indications	36
4.1.12 Structure: A_PSS_Struct_Info	37
4.1.13 Structure: A_PSS_Message.....	37
4.1.14 Structure: A_PSS_Mailbox_Channel.....	38
4.1.15 Structure: A_PSS_Detect_Configuration.....	39
4.1.16 Structure: A_PSS_Configuration	40
4.1.17 Structure: A_PSS_Instance.....	40
4.1.18 Structure: A_PSS_Cal_Page_Switch_Descriptor	40
4.1.19 Structure: A_PSS_Cal_Page_Sync_Descriptor.....	42
 4.2 ASAM POD PSS Methods	42
4.2.1 A_PSS_Prepare_Detect	42
4.2.2 A_PSS_Detect	43
 4.3 Vendor specific POD PSS Methods.....	44
4.3.1 <VENDOR>_PSS_Init.....	44
4.3.2 <VENDOR>_PSS_Activate_Features	45
4.3.3 <VENDOR>_PSS_Deactivate_Features.....	46
4.3.4 <VENDOR>_PSS_Check_Feature_Status	47
4.3.5 <VENDOR>_PSS_DAQ_Trigger.....	48
4.3.6 <VENDOR>_PSS_CAL_Page_Switch	49
4.3.7 <VENDOR>_PSS_CAL_Get_Page_Switch_Status	50
4.3.8 <VENDOR>_PSS_CAL_Get_Page_Switch_Request	51
4.3.9 <VENDOR>_PSS_CAL_Set_Page_Switch_Status.....	52
4.3.10 <VENDOR>_PSS_CAL_Set_Page_Switch_Mode	53
4.3.11 <VENDOR>_PSS_CAL_Sync_Page_State	55
4.3.12 Communication error codes	55
 4.4 EAP API Methods	56
4.4.1 A_PSS_Mem_Copy	56
4.4.2 A_PSS_Get_Current_CoreID.....	57
5 XCP POD Commands	59
 5.1 POD_GET_INFO.....	59
5.1.1 Description.....	59
5.1.2 Command structure.....	60

5.1.3 Positive response.....	60
5.1.4 Negative response	61
5.2 POD_SET_ACTIVE_CONFIGURATION.....	61
5.2.1 Description.....	61
5.2.2 Command structure.....	61
5.2.3 Positive response.....	61
5.2.4 Negative response	62
5.3 POD_MANAGE_TRANSFER	62
5.3.1 Description.....	62
5.3.2 Command structure.....	62
5.3.3 Positive response.....	63
5.3.4 Negative response	63
5.4 POD_DOWNLOAD	63
5.4.1 Description.....	64
5.4.2 Command structure.....	64
5.4.3 Positive response.....	64
5.4.4 Negative response	64
5.5 POD_UPLOAD	64
5.5.1 Description.....	65
5.5.2 Command structure.....	65
5.5.3 Positive response.....	65
5.5.4 Negative response	65
5.6 POD_GET_STATUS	66
5.6.1 Description.....	66
5.6.2 Command structure.....	66
5.6.3 Positive response.....	66
5.6.4 Negative response	67
5.7 Communication Error code handling.....	67
6 XCP POD events	68
6.1 POD_EV_STATUS.....	68
6.1.1 Description.....	68
6.1.2 Event packet structure	68
7 XCP Sequence examples	69
7.1 Retrieving a POD ID.....	69
7.2 Download and activate a POD Configuration	70
7.3 Retrieving Diagnostic information from a POD	73
8 A2L for POD	75
8.1 AML	75
8.2 Configuration BLOB.....	80
8.3 POD Vendor List.....	81
9 Terms and Definitions	82

10 Symbols and Abbreviated Terms	84
11 Bibliography	85
12 Figures and Tables	86
Figure Directory	86
Table Directory	87
Appendix: A. POD – Tool Topologies	88