

ETAS

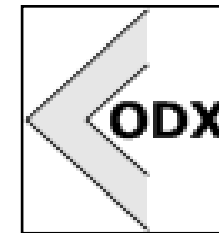
LiveDevices
ETAS Group

Vetronix
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Dr. Claus Kricke / ETAS GmbH

ODX Introduction



May 9th, 2007

TestingEXPO Tech Forum

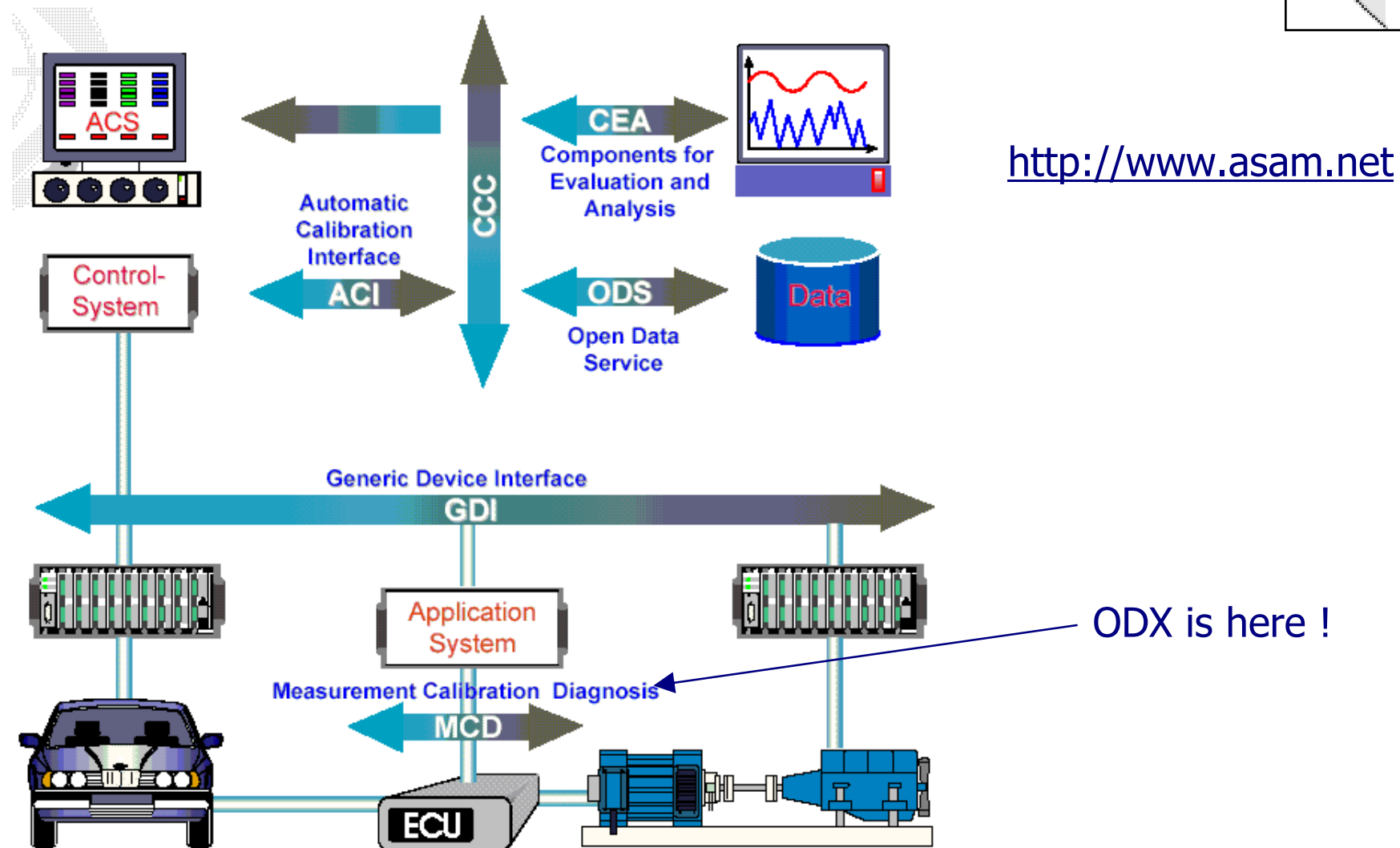
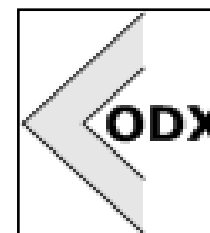
Stuttgart, DE

automotive
testing expo 2007
europe



ASAM e.V.

Association for Standardisation of Automation- and Measuring Systems

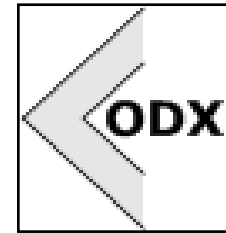


<http://www.asam.net>

ODX is here !

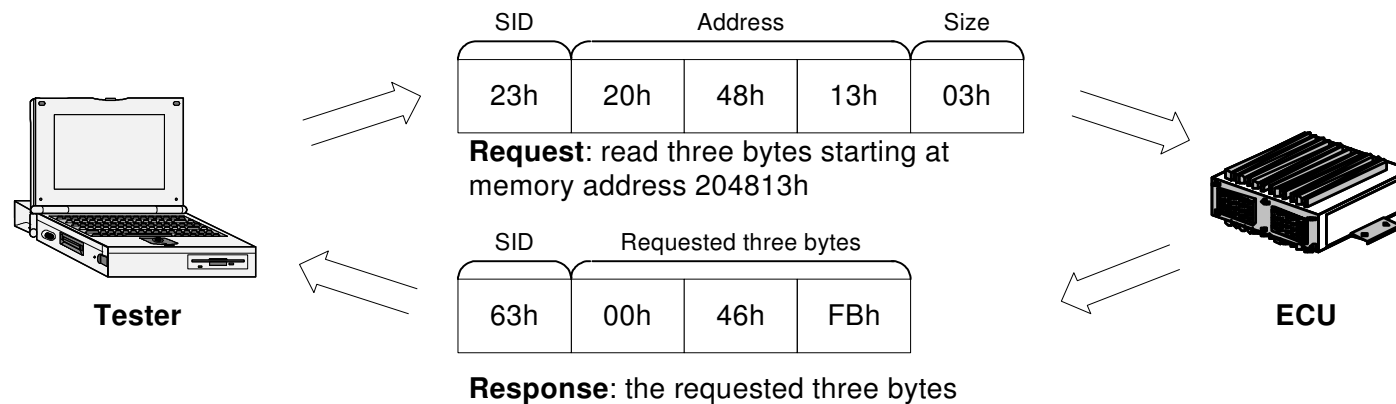
ODX-Introduction

What is ODX



ODX is an

“XML based standardized format to describe diagnostic information, functionality, and communication interfaces of in-vehicle ECUs”

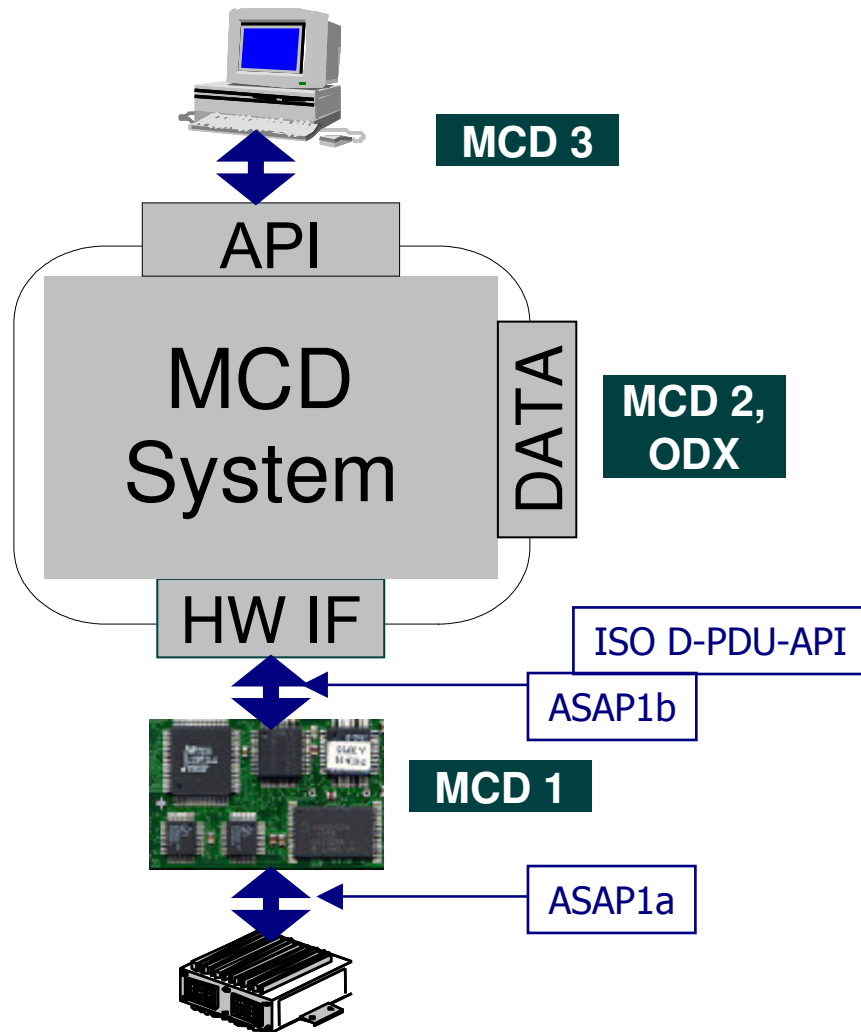
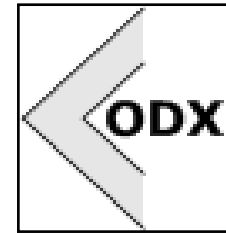


ODX is a “Technology”, rather than a solution to a specific problem

- Name “ODX” stands for (Open Diagnostic Data Exchange).
- Focus on support of the Vehicle Life Cycle Diagnostics
- Proposed as ISO 22901-1 Standard (1. DIS Status, Voting ongoing)

ODX-Introduction

ODX and its relation to other Standards



3: Programmer Interface

- ASAP3 / MCD 3MCD

2: Data Formats

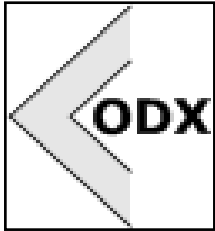
- ASAP2 / MCD 2[MC, D]
- Industry wide accepted A2L-Standard

1: Hardware Interface

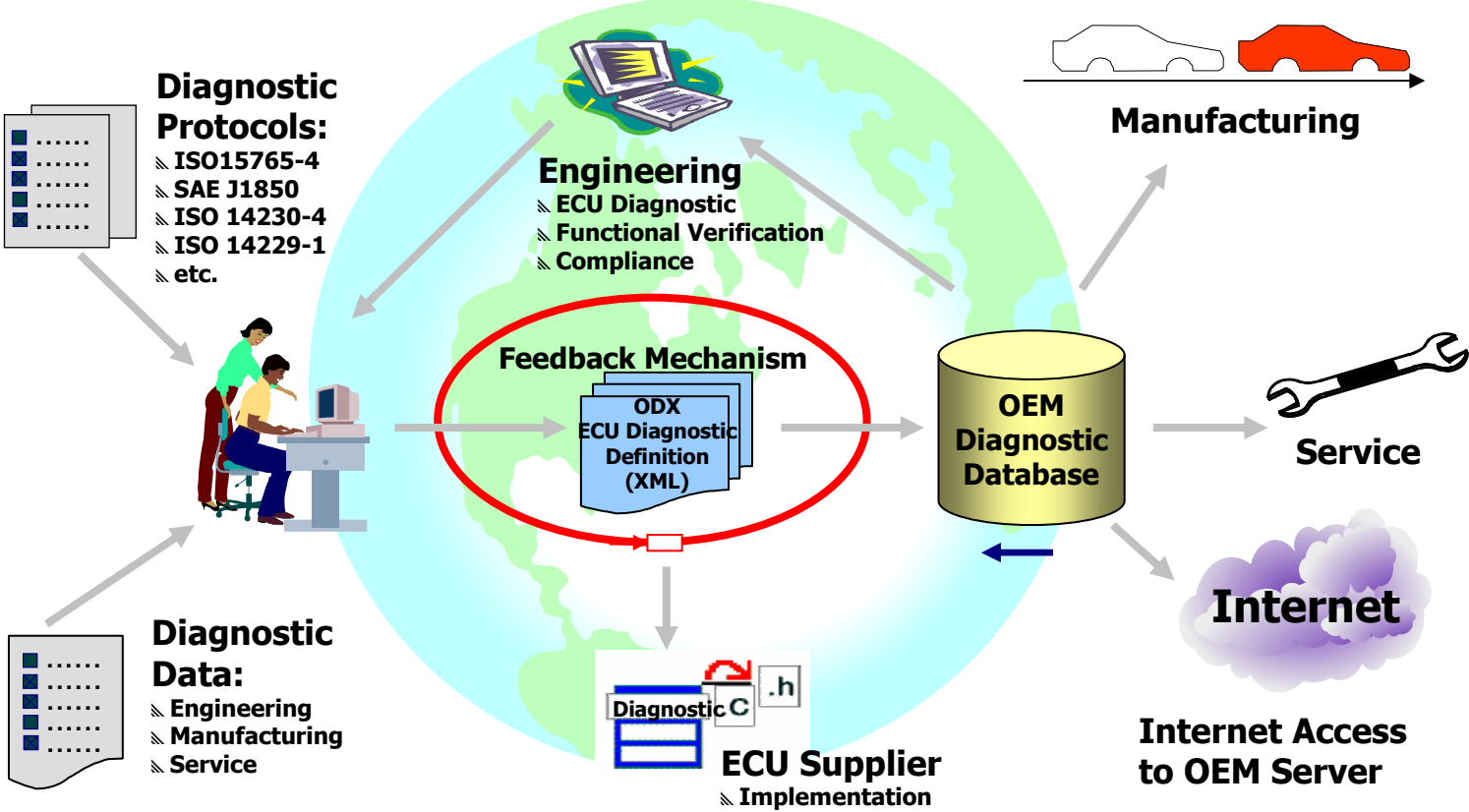
- ASAP1b /MCD 1MC

ODX-Introduction

Use cases in the Vehicle Life Cycle



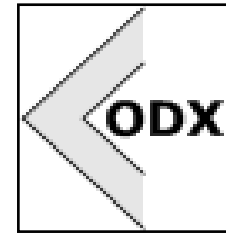
ODX "Single Source" diagnostic data stream



Single Source for all phases of the vehicle life cycle

ODX-Introduction

History & Status of Standardization



Predecessor: ASAM MCD 2D Version 1.0.0 thru 1.2.2

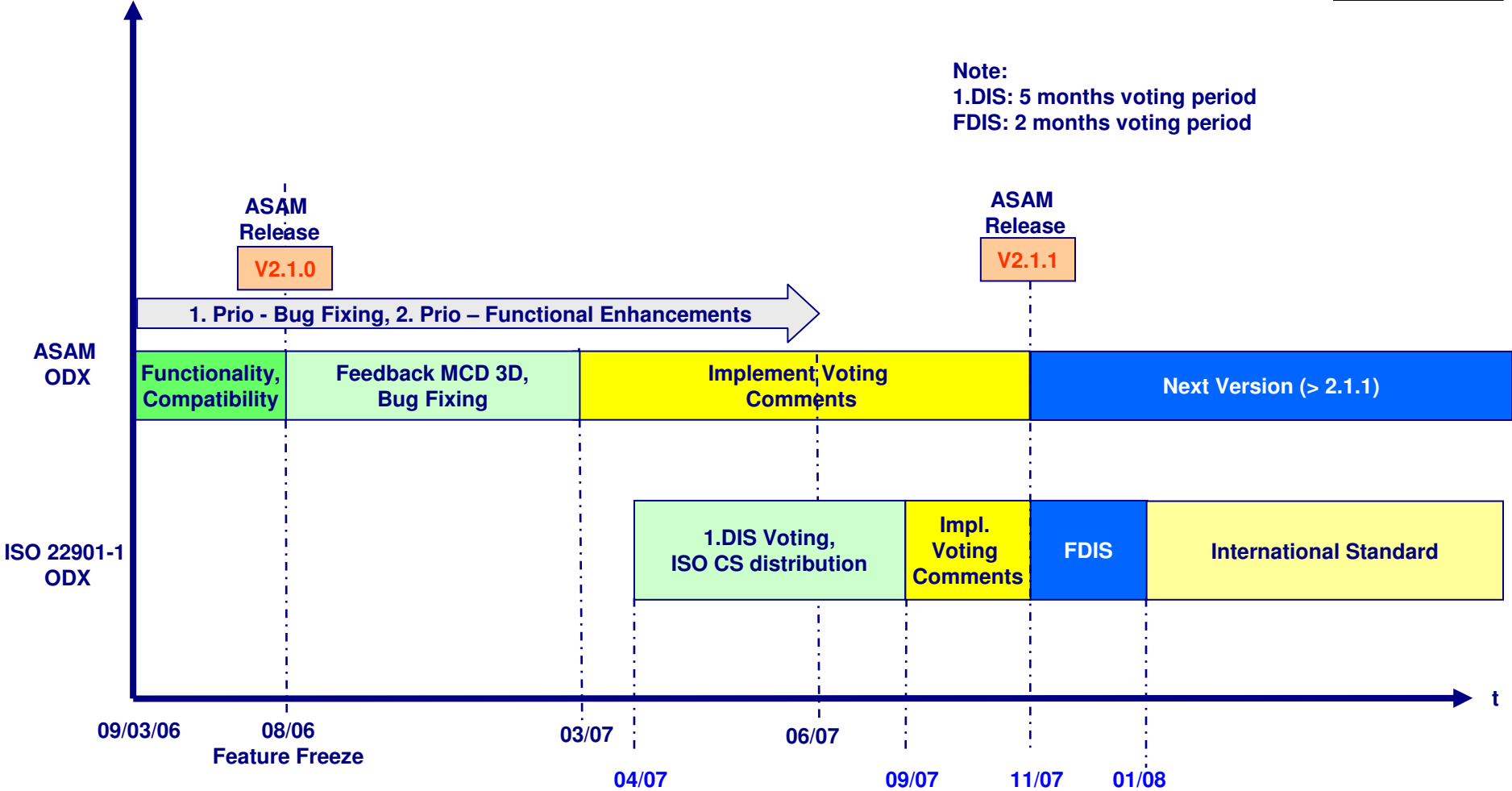
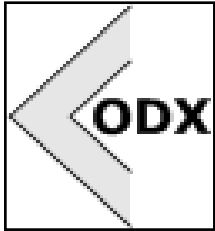
ODX Version 2.0.0 , released May 4th, 2004.

ODX Version 2.0.1 , released March 31st, 2005.

ODX Version 2.1.0 , released November 13th, 2006.

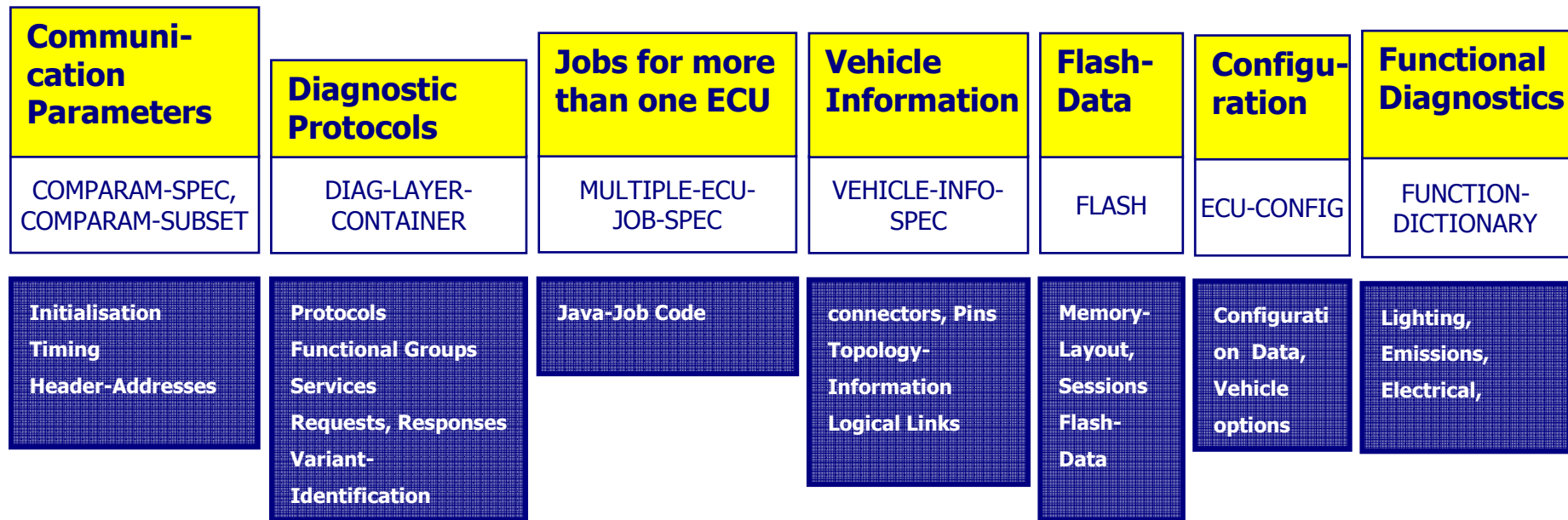
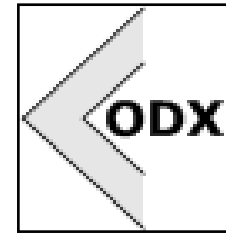
ODX is proposed as the new ISO 22901-1 Standard
ISO 1. DIS Voting : April – Sept., 2007

ODX-Introduction Standardization Schedule



ODX-Introduction

ODX Version 2.1.0 Data Model

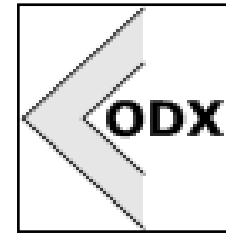


Each Container is a separate ODX File.

PDX (Packed ODX) describes how several ODX Files can be stored in a single, compressed file

ODX-Introduction

The Diagnostic Layer Container



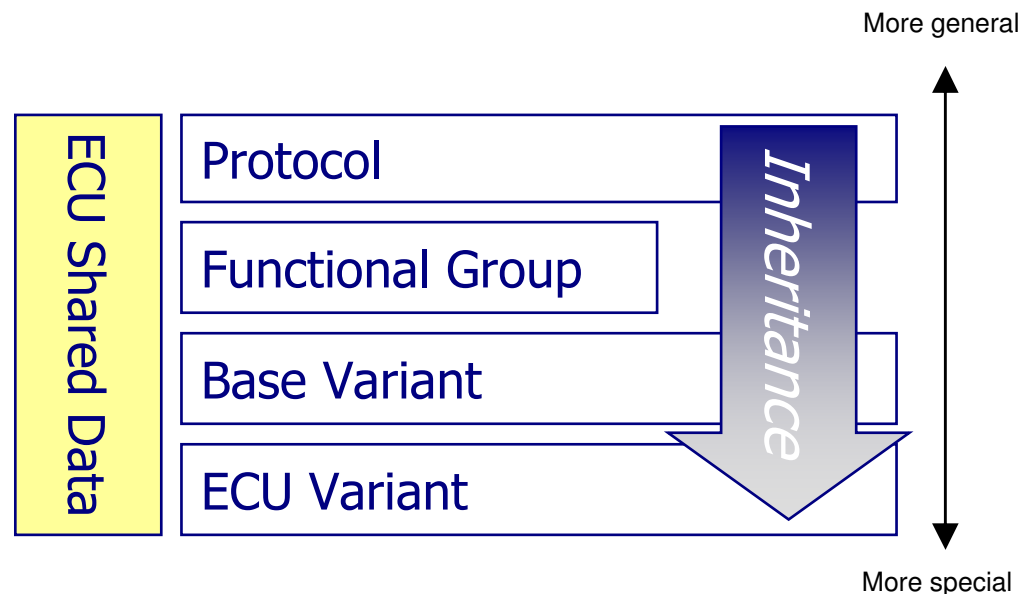
The DIAG-LAYER is the principle data structure for the communication related data.

ECU-SHARED-DATA

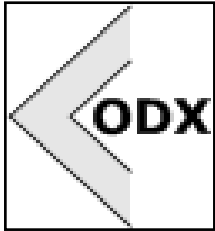
Use Case:

Share data between many ECUs (DTCs, PIDs)

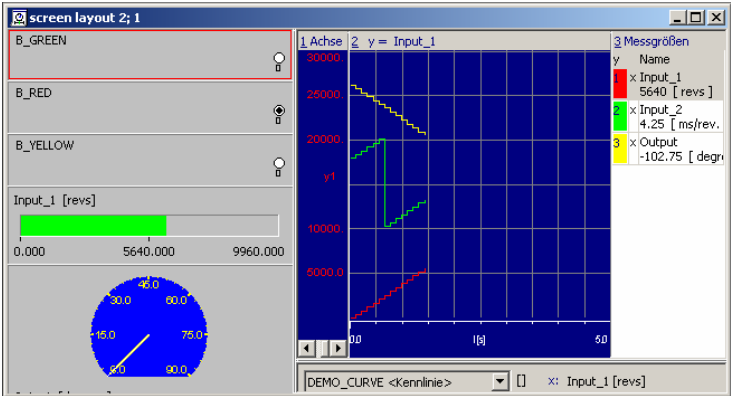
The elements of DIAG-LAYER are referred to as "Layers"



ODX-Introduction Diagnostics & Calibration



Based on ODX ETAS has extended
INCA
Measurement & Calibration



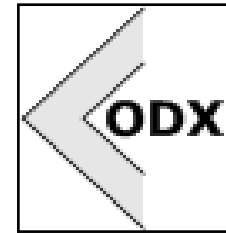
with

Off-Board Diagnostics

| Name | Value | Unit |
|------|-------|------|
| | | |
| | | |

ODX-Introduction

ECU Diagnostics & Calibration "ODX-LINK"

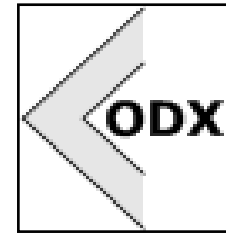


The screenshot displays the ODX-LINK software interface with several active windows:

- main window:** Shows a control panel with indicators for B_GREEN, B_RED, B_YELLOW, and a gauge for Output [degrees]. A slider for Input_1 [revs] is set to 70. A graph shows the DEMO_CURVE <Kennlinie> with axes for x (revs) and z (degrees).
- Tabelleneditor [1]:** A table editor window showing data for DEMO_CURVE <Kennlinie> with columns for x (revs) and z (degrees).
- Messfenster [1]:** A measurement window showing B_RED.
- DiagTroubleCode:** A diagnostic window showing a request (18 00 FF 00) and response (58 02 00 21 00 02 59 62). It lists trouble codes and info flags, including P0021 A Camshaft Pos. - Timing Over-Advanced or System Perf. B2.
- IncaTrigger:** A service selection window with a list of diagnostic services, including readFreezeFrameDataAllData (checked).

ODX-Introduction

ODX goes live !



To my best knowledge the following organizations have introduced or are starting to use ODX:

Suppliers providing ODX-based tools:

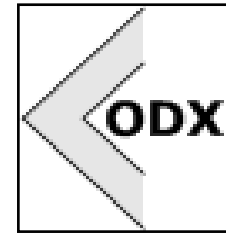
DSA, ETAS, In2Soft, Siemens, Softing, T-Systems, Vector ...

OEMs applying ODX as of today:

Audi, BMW, DaimlerChrysler, GeneralMotors, Porsche, VW ...

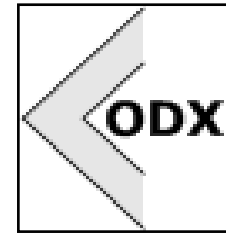
ODX-Introduction

Summary



- ODX is a powerful description format , able to capture all information pertaining to diagnostic communication of automotive on-board ECUs
- ODX covers the needs of the entire vehicle life cycle from systems engineering to the service shop
- Tools supporting ODX are available
- Fast growing Community of ODX adopters

ODX-Introduction



Thank you for your attention

Your Questions

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