

**Feedback from JasPar
to the IEEE 802.3bp Task Force
regarding Draft 2.0**

*Japan
Automotive
Software
Platform
and
Architecture*

**IEEE 802.3bp Interim Meeting
September 2015**

Andrew Klaus

Background and Introduction to JasPar

*Japan
Automotive
Software
Platform
and
Architecture*

What is JasPar ?



Established in
September, 2004,
led by five board
companies.

TOYOTA

HONDA
The Power of Dreams

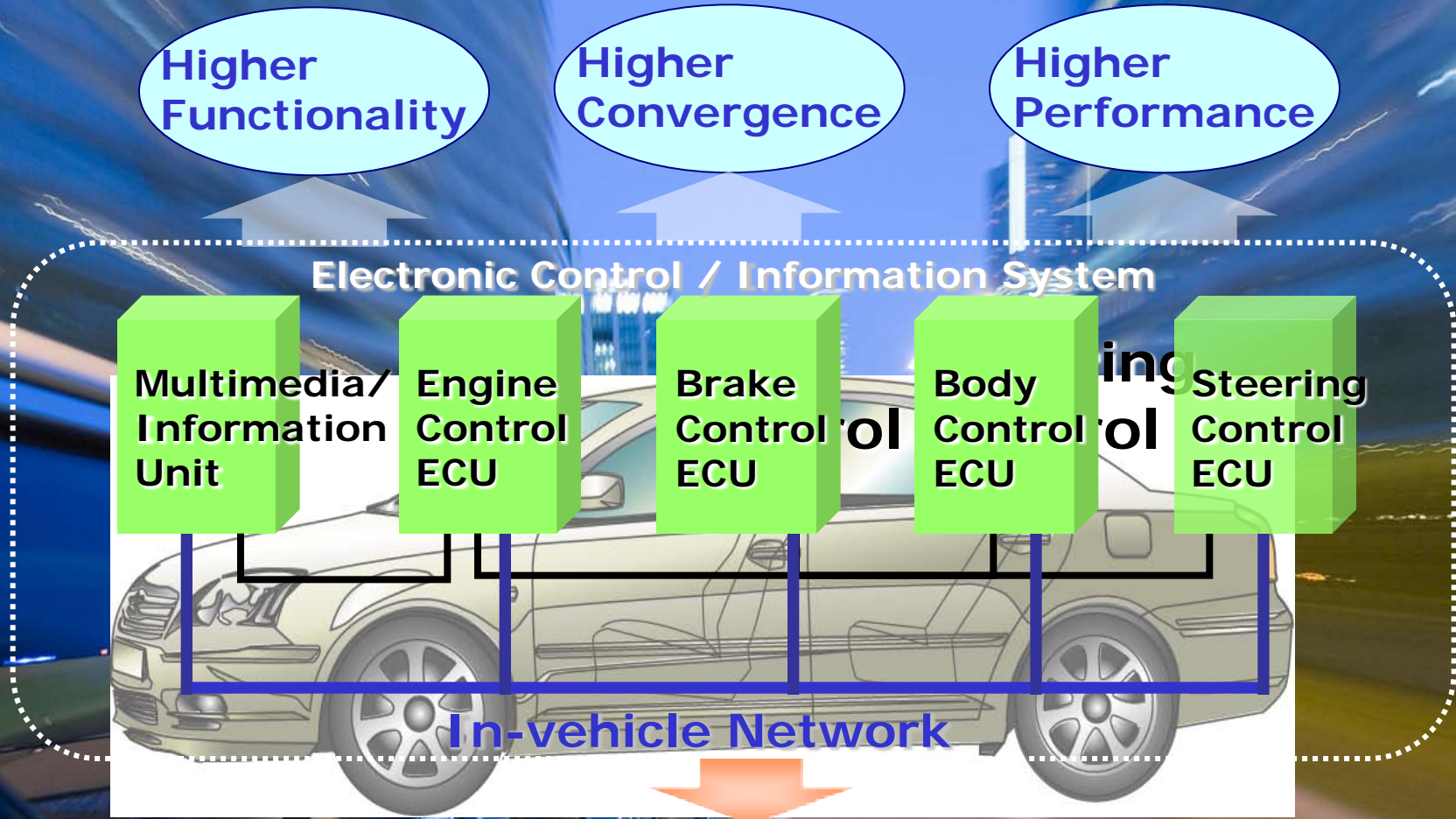
JasPar

DENSO

NISSAN



Why JasPar was established ?



Increasing Complexity for Automotive electronics control systems

- To pursue increasing development efficiency and ensuring reliability by standardization and common use of electronic control systems in advanced and complex vehicle networks.

JasPar Next-Gen High-Speed In-Vehicle Network WG

- Purpose: This WG puts together requirements for next-generation high-speed networks in the vehicle, for both information system networks as well as control system networks.

Next-Gen Network WG
Chair: Toyota

- Hardware Sub-WG Organization

(as of Aug./2015)

Hardware Team
Leader: Bosch

Software Team

System Architecture Team

PHY/MAC Sub-team
Leader: Renesas Electronics

TOYOTA
NISSAN
BOSCH
DENSO
NXP
Micrel Japan
Marvell Japan
Mega Chips
THine Electronics
TTTech Japan
IXIA Communications

W/H, Connector Sub-team
Leader: AutoNetworks Technologies

Yazaki
Furukawa Electric
Tyco Electronics Japan

Communication quality Sub-team
Leader: DENSO

TOYOTA
HONDA
NISSAN
DENSO
MURATA
TDK-EPC
Clarion
IXIA Communications

Circuit component Sub-team
Leader: MURATA

TDK
DENSO

Optical Sub-team
Leader: Tyco Electronics Japan

Yazaki
Furukawa Electric
Toyota Central R&D
AutoNetworks Technologies
DENSO

Investigation of Ethernet PHY/MAC/SWITCH Requirements.

Investigation of W/H, connector Requirements

Investigation of Electrical properties, EMC/Conformance Requirements

Investigation of Oscillator CMC/Filter Recommended circuits

Investigation of Optical physical layer Requirements. IEEE standardization

Feedback Items from JasPar to IEEE

Questions of Clarification

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- **JasPar Ethernet WG (PHY/MAC Team) spent the last 3 months studying 802.3bp D2.0 document.**
 - **Many thanks to Steve for providing JasPar with the 2.0 Draft document.**
- **Since it is late in the standardization phase for 802.3bp, we do not have any required changes to this draft.**
- **We have some questions of clarification relating to things like test, crosstalk and impedance on the following pages.**

Differential characteristic impedance

- **D2.0 says that reference impedance is 100 Ω for all frequencies. (both type A and type B)**
- **By comparison, 802.3bw (100BASE-T1) and OPEN Alliance specification states 100 Ω \pm 10%.**
- **They also specify a rise time of 700ps.**

- **Question: Will 802.3bp specify a tolerance of the differential characteristic impedance value?**

- **Question: Will 802.3bp specify a rise time for measuring the impedance (e.g. 700ps) ?**

Item 2: Annex 97A.2 (p. 191–192)

Differential characteristic impedance

- D2.0 says that common mode conversion loss should be tested by both 4-port and 3-port measurements.
- We don't understand the reasoning behind testing with 3 ports (Figure 97A-2).
- Question: Please help us to understand the reasons to test with 3 ports.

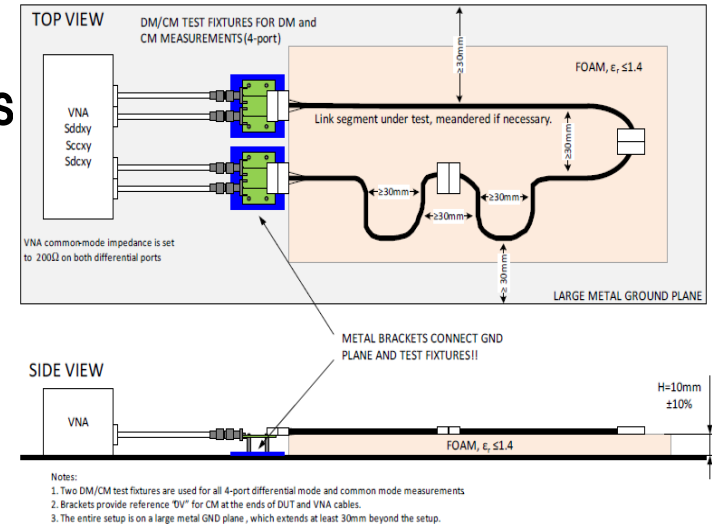


Figure 97A-1—4-port test setup

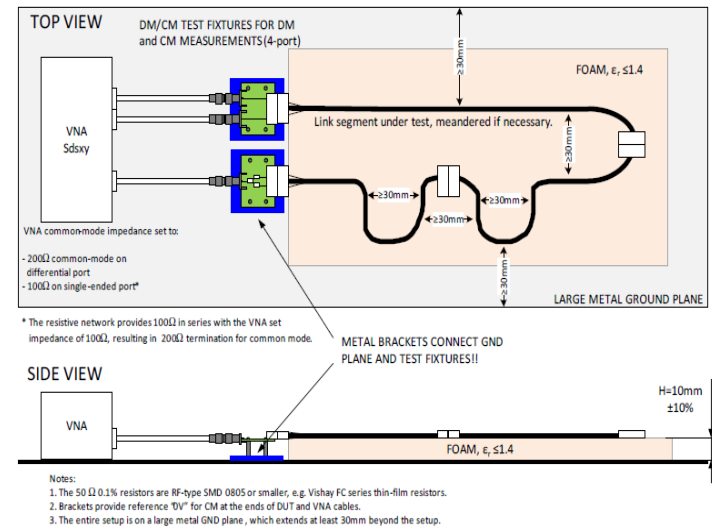


Figure 97A-2—3-port common mode conversion loss measurement

Item 3: Clause 97.5.5.3.2 (p. 120–121)

Multiple disturber power sum alien near-end crosstalk (PSANEXT) loss

- Equation 97–19 describes the PSANEXTlossN (f) . If 100MHz is inserted for f into this equation, PSANEXTloss comes to 54dB.
- In Figure 97–34, at 100MHz PSANEXTloss shows about 60dB.

- Question: Are we reading this equation/graph wrong? Which of these is meant to show the correct PSANEXTloss?

Alien Crosstalk Test Procedure

- **This Annex specifies details for testing Alien Crosstalk.**

- **Question: When testing using Figure 97B-2, what is the arrangement of cables when testing with 3 cables? Is it equivalent to cables #1,2,4 in Figure 97B-4? Or to cables #1,2,3?**

- **Question: Are there any non-IEEE Test Standards referenced for this testing?**

- **We would like any feedback IEEE has regarding the questions in this presentation.**
- **We realize that it is late in the standardization phase, and that there is not so much we can input to IEEE at this stage.**
- **In the future, if IEEE initiates any Task Force related to automotive ethernet specifications, please do inform JasPar about any possibility to cooperate more closely.**