Suggestion from JASPAR
Contribution to network configurations for SDV

Japan Automotive Software Platform and Architecture

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Background

The world is starting to work towards providing new automotive services using software updates. A vehicle that can provide different services by updating software is called **SDV (Software Defined Vehicle)**, and SDV has already been reported in various places.

Ex. IEEE-SA Ethernet & IP @ Automotive Technology Day Nov. 2022.

STELLANTIS
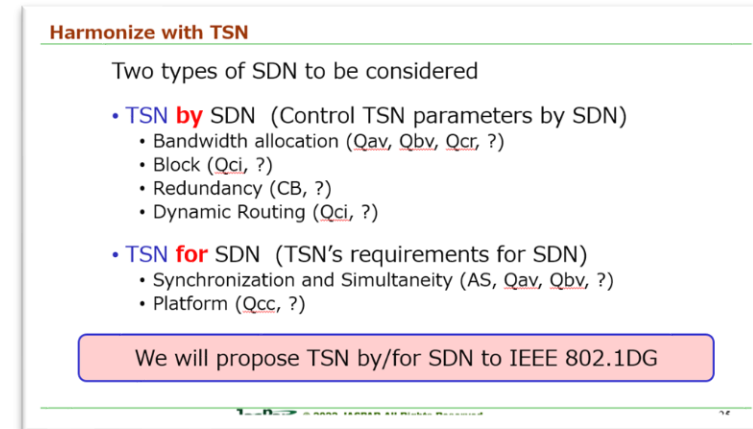
JASPAR

To realize SDV, which can add or remove additional services frequently, it is inevitable to have some mechanism to configure the network flexibly. Note that such networks are required not only by dynamic configuration but also by static configuration.

We want to refer to the flexible networking for SDV as **SDV-N (SDV-Networking)**.

JASPAR showed this concept at the IEEE SA Ethernet & IP @ Automotive Technology Day in Nov. 2022.

Suggestion from Jaspar (1/2)

To implement this SDV-N, we must use the IEEE 802.1 standard, especially the IEEE 802.1TSN standard.

Consequently, we need an IEEE 802.1 profile to achieve SDV-N.

Therefore, the profile should be discussed within IEEE P802.1DG.

Fortunately, the DG draft has a slot to talk about SDV-N, such as Annex B.

So, in DG, we would like to discuss the definition of protocols and a profile.

Suggestion from Jaspar (2/2)

Based on JASPAR's studies, we consider that the definition of SDV-N will be necessary for the following chapters of D1.4 (or 1.5).

- ・6.11 Automotive Network Traffic Classification
- ・9   Traffic Separation
- ・14   Protocols
- ・B.1 Central vs. De-central Configuration
- ・B.2 MIB/YANG vs. Arxml
- ・B.3 Software Update
- ・B.4 Bandwidth Reservation
- ・B.5 Switch configuration

We are already preparing a text contribution to the draft.

We aimed to contribute to D1.5, but due to schedule considerations, we would like to target the next draft of D1.5 to report JASPAR's contribution.

JASPAR's use case

(Use case)
It is assumed that ECU applications etc., are switched over OTA, and configurations of an in-vehicle network are changed over with SDV-N.
As an example, SDV-N switches its routing table between usual driving and diagnostic testing.

Usual driving   **Diagnostic testing**

Switch of routing table
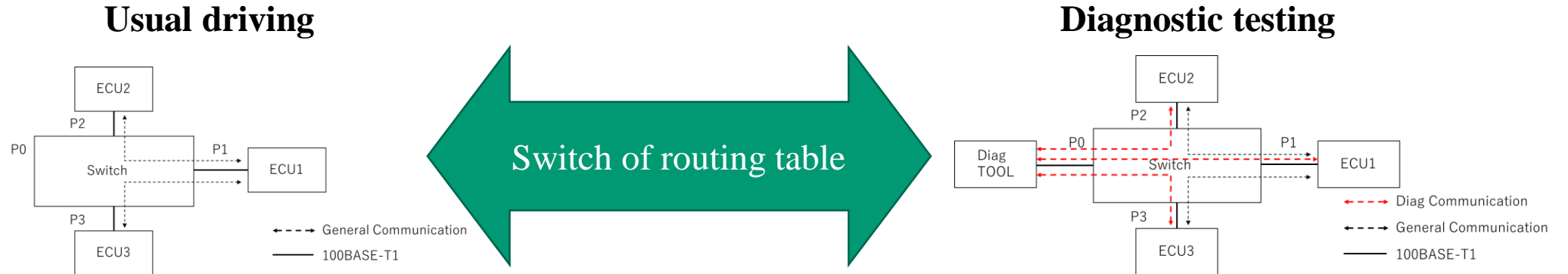
Of course, JASPAR may only be able to cover some automotive use cases.

So, we would like to recruit fellow members to discuss this together.

【Plan】

JASPAR will present its text contribution by July.

After that, we will modify it according to the next version of D1.5.