



Dynamic Map - introduction of the session -

SIP-adus workshop 2020

Tokyo (Online), November 11, 2020

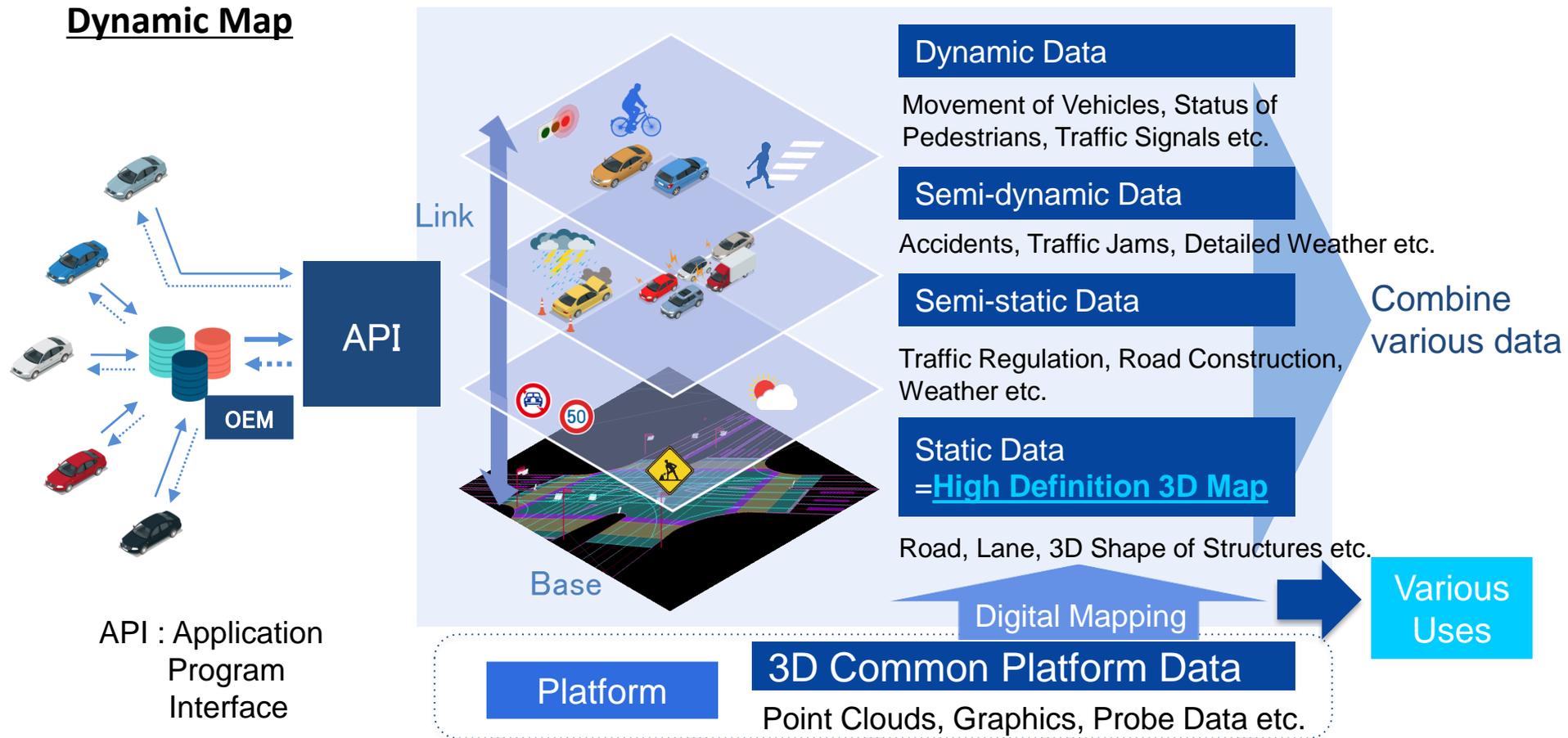
Satoru NAKAJO, the University of Tokyo



Brief explanation of

1. **Dynamic Map**
2. **FOT 2020**
3. **International collaborations**

Dynamic Map

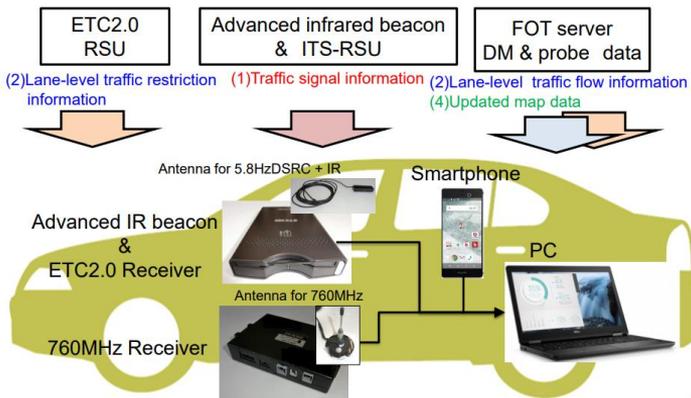


Data for Dynamic Map FOT

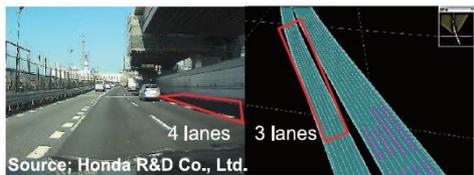


Data	Data: detail	Media
(1)Dynamic	Traffic signal information	Advanced infrared beacon & 760MHz
(2)Semi-dynamic	Lane-level traffic flow information (Probe data)	LTE
	Lane-level traffic restriction information	ETC2.0(5.8GHz)
(3)Semi-static	NA	NA
(4)Static	Map data	DVD
	Updated data	DVD+LTE

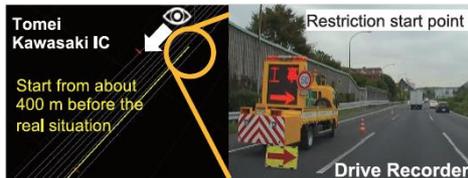
System for Dynamic Map FOT



FOT situations



Change road shape (3 lanes >>4lanes) = Updated Map



Semi-dynamic: Lane-level traffic restriction information



Semi-dynamic: Lane-level traffic flow information



Dynamic: Traffic signal information, vehicle location

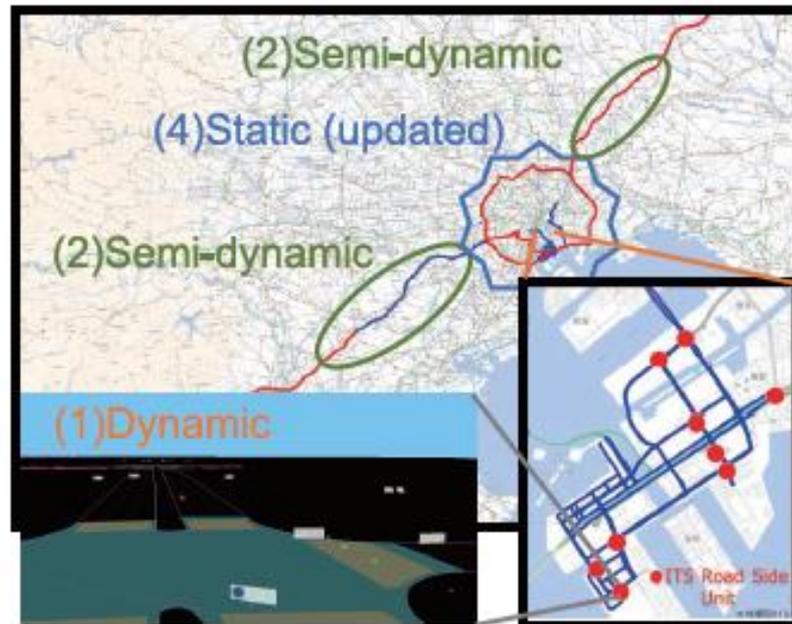
Result of Dynamic Map FOT

✓ The results were opened on SIP-adus website.

Participants: 22 participants



Test area: over 758km of Map data



* Participants of the FOT for Dynamic Map or HMI

SERVICE

Provided Service / Current Development Status

As at the end of March 2019, we have completed the initial preparation of data for 29,205 km of expressways and highways across Japan and provide the data for a fee.

To deal with newly extended or altered roads, we have started preparing updated data.
For ordinary roads, we assume that data preparation starts from densely populated areas.

Expressways and Highways Across Japan

We have completed the initial preparation of data for 29,205 km (link length) of expressways and highways across the country, and have begun providing this data for a fee since the end of March 2019. This data is now being used for highly accurate navigation, ADAS and automated driving applications by OEMs in and outside Japan. (The data is provided via map data providers.)

We have also started preparing data for expressways and highways opened after our initial data preparation set, and this data will enter the market at the end of September 2019 (for expressways opened before the end of March 2019). We will also progressively update data for newly extended or repaired roads.



Total: 29,205 km

- ✓ Created a company (DMP) to produce base map.
- ✓ Start providing map data for expressways and highways from Mar. 2019. (total 29,205km)
- ✓ Automated vehicle with DMP data have been released from 2019.

<https://www.dynamic-maps.co.jp/en/index.html>

Test Participants:

For a wide variety of people including overseas OEM, parts and system suppliers, universities, research organizations and venture companies.

Period:**1st stage field operational test (2019 to 2020)**

- **Field tests of necessary cooperative infrastructure technologies** to achieve level 4 autonomous driving on freeways and ordinary roads.

2nd stage field operational test (2021 to 2022)

- **Modifications to the cooperative infrastructure technologies** that came to light in the 1st stage FOT
- **Field operational testing for new R&D issues** in preparation to establish a test environment for the legacy cooperative infrastructure system

Schedule

FY2018	FY2019	FY2020	FY2021	FY2022
★ Start of SIP Phase Two ★ Participant recruitment	First stage FOT		Second stage FOT	
	Test Preparation	FOT Tokyo Olympics and Paralympics	Test Preparation	FOT

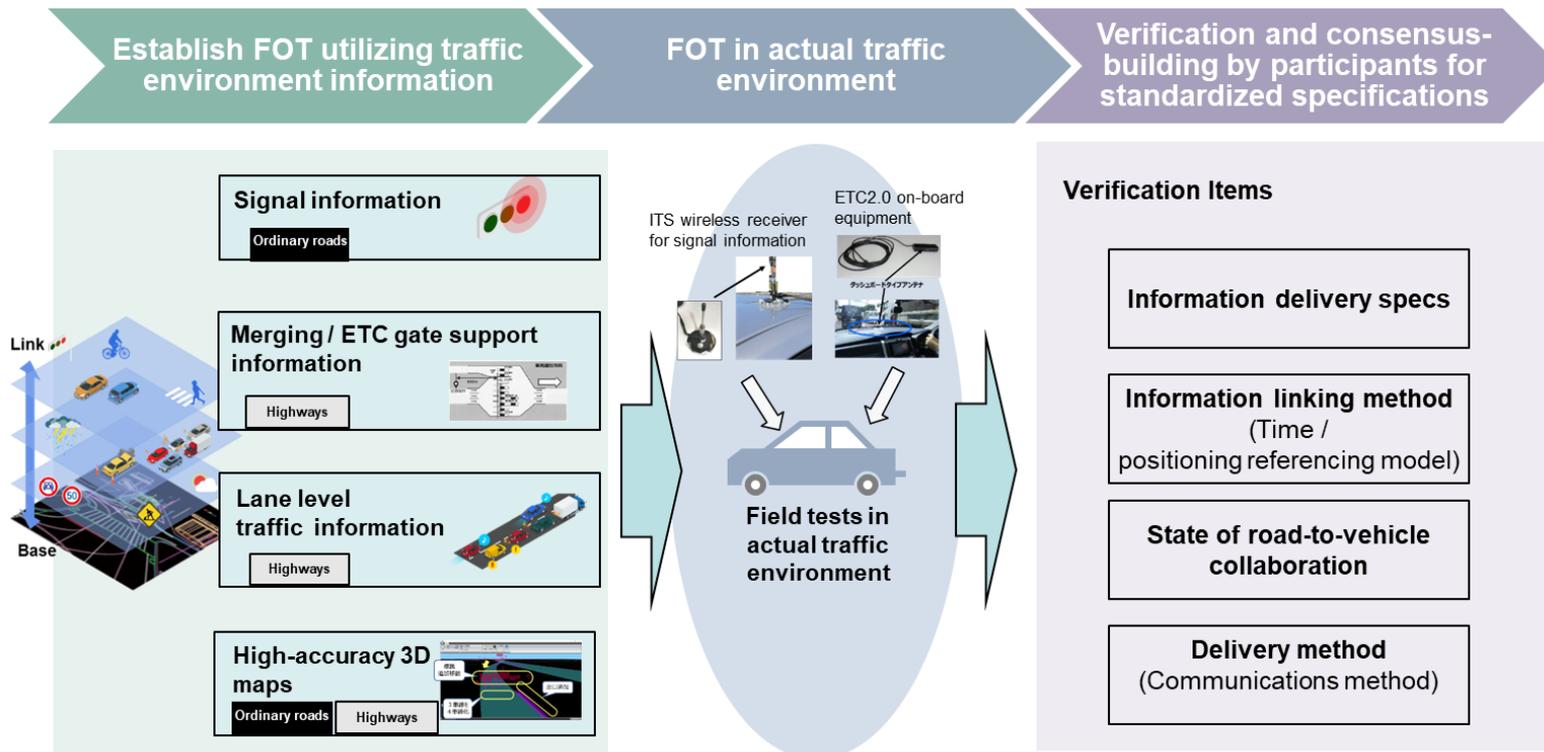
*There is the possibility the FOT will not take place during the Tokyo Olympics and Paralympics.

AISAN TECHNOLOGY CO.,LTD.
Valeo Co., Ltd.
SB Drive Corp.
Epitomical Limited
Kanazawa University
Continental Automotive Corporation
Saitama Institute of Technology
JTECT CORPORATION
SUZUKI MOTOR CORPORATION
SUBARU CORPORATION
Sompo Japan Nipponkoa Insurance Inc.
DAIHATSU MOTOR CO., LTD.
Chubu University
Tier IV, Inc

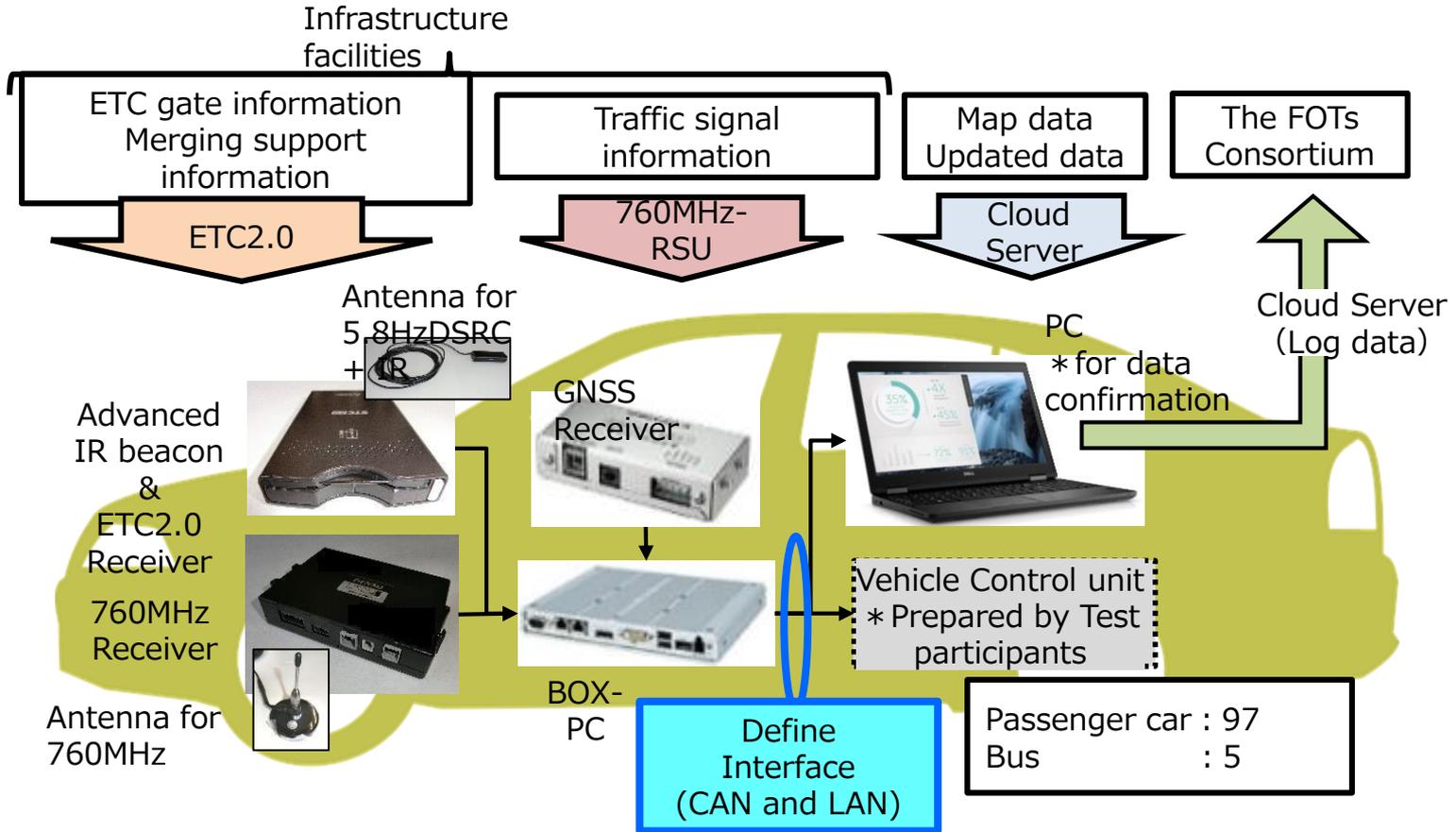
TOYOTA MOTOR CORPORATION
Nagoya University
NISSAN MOTOR CO.,LTD.
BMW Group
Hino Motors, Ltd.
Field auto Inc.
Volkswagen Group
Bosch Corporation
Honda Motor Co., Ltd.
Mazda Motor Corporation
MITSUBISHI MOTORS CORPORATION
Mitsubishi Electric Corporation
Meijo University
Mercedes-Benz Co., Ltd.
Advanced Smart Mobility Co., Ltd.

Objective:

The purpose of the FOT and consensus-building is to create standardized specifications for how information is delivered, how to link information and information delivery specifications by establishing a test environment utilizing traffic environment information.



*The technological topics may increase/decrease according to R&D progress



✓ FOT re-scheduling

- FOT will continue till the end of Feb. 2021 (2 month extension)
- Test-ride event will be planed in 2021 (postponed from 2020)
- FOT plan for 2021 will be released by the end of 2020

✓ **ISO**

- Deeply contributed the related items on ISO/TC204/WG3
 - ✓ ISO/20524-1 and 2: Geographic Data Files 5.1
 - ✓ ISO/17572-4: Precise Relative Location Referencing
 - ✓ TS/22726-1 and 2: Dynamic Data and Map DB Specification for Connected and Automated Driving System Aps and others,

✓ **OADF (Open AutoDrive Forum), the industrial standards forum**

- participate as a Steering Committee member

✓ **Hiroyuki Inahata**

- CEO, Dynamic Map Platform Co.,Ltd.

✓ **Yoshiaki Tsuda**

- Mitsubishi Electric Corp.

✓ **Matthias Unbehau**

- Executive Director, Traveller Information Services Association (TISA) ASBL

✓ **Jean-Charles Pandazis**

- ADASIS & SENSORIS Coordinator, ERTICO - ITS Europe