Efforts to build dynamic maps and traffic environment information

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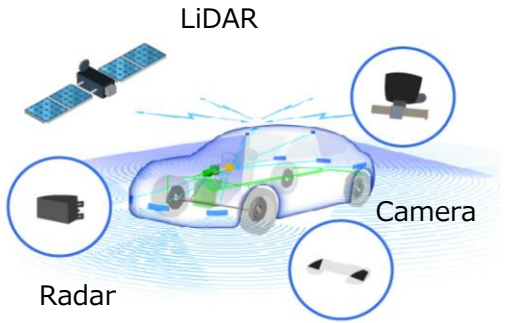
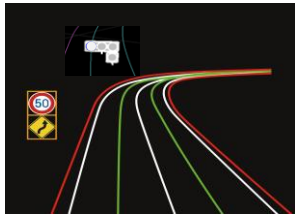
Utilization of information in ADS

In-vehicle sensor information

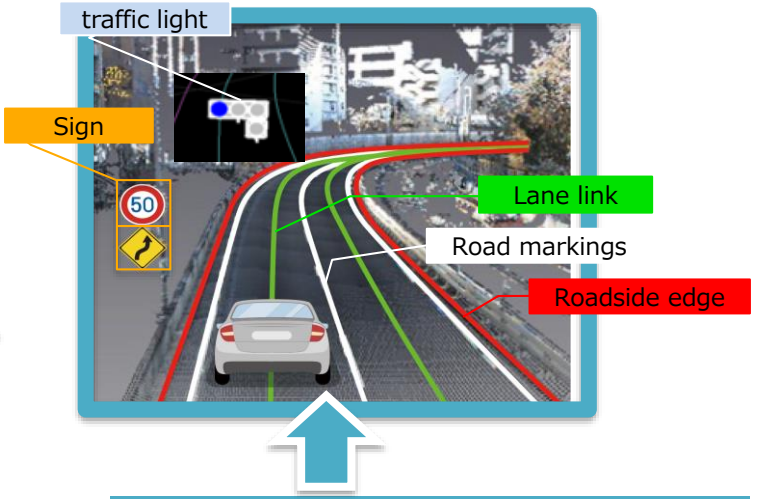


Dynamic map



High-precision 3D map

Traffic environment information obtained by communication



Vehicle position estimation

Acquisition of road structure / traffic rules / signal information, etc.

Route planning

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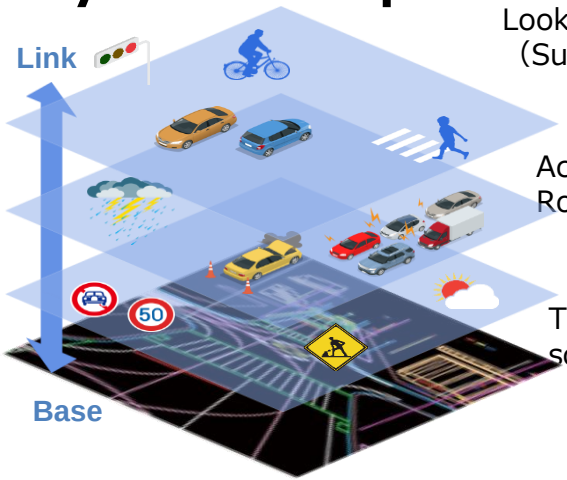
Dynamic map

High-precision 3D map information and traffic environment information (dynamic information, quasi-dynamic information, quasi-static information) owned by various entities and changing over time are used consistently by establishing rules.

Dynamic map



Dynamic info.

Look-ahead information
(Surrounding vehicles, Pedestrian, Signal etc.)

Semi-dynamic info.

Accidents, Traffic jams, Traffic regulations, Road construction, Narrow area weather etc.

Semi-static info.

Traffic regulation schedule, Road construction schedule,Wide area weather forecast etc.

Static info.
=High-precision 3D map info.

Roads, lines, 3D structures etc.

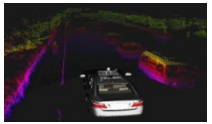
Cooperative area

Additional data

Basic data

Competitive area

Underlying data

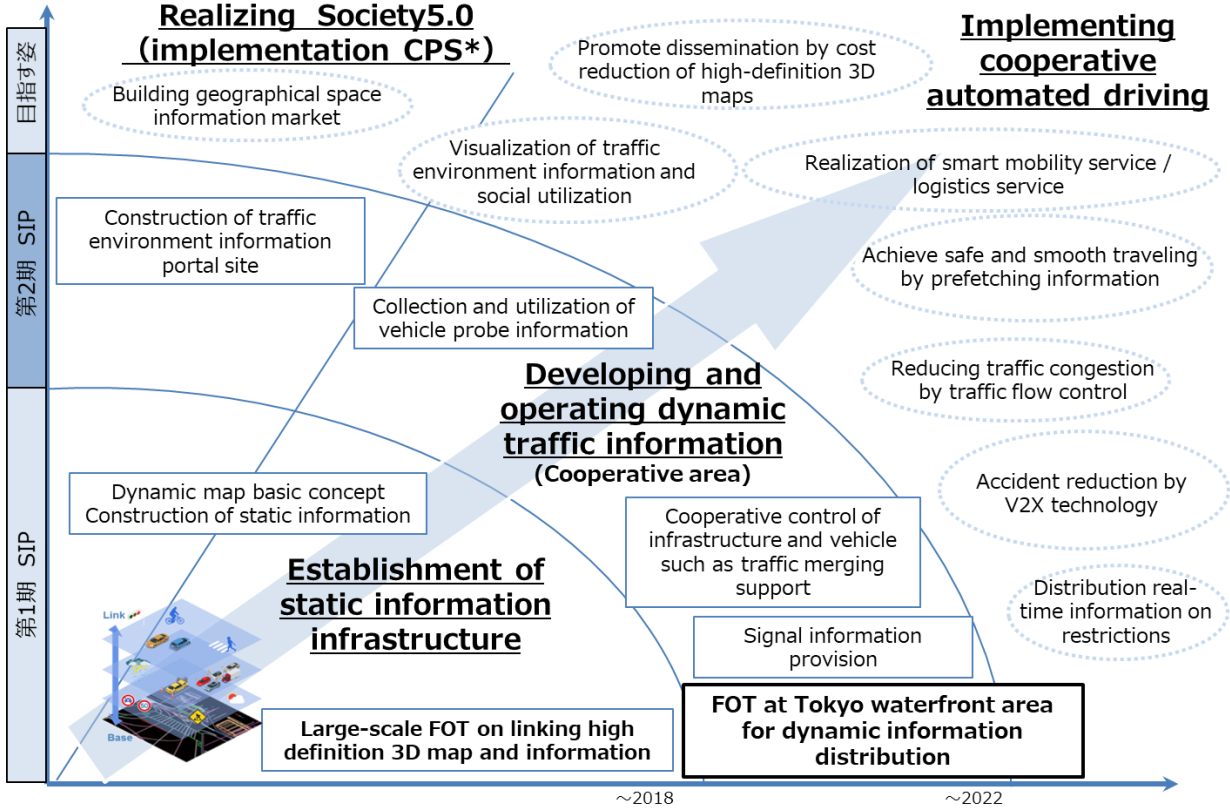


Plot

3D map common infrastructure data

Laser point cloud, Image, Running trajectory etc.

Traffic environment information roadmap



【Scenario for private car】

Ordinary road<L2> By 2020

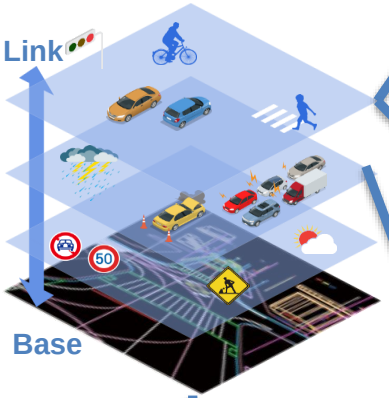
Expressway<L2・L3> By around 2020 → By around 2025 Expressway<L4>

*CPS : Cyber Physical System

Actions to build traffic environment information

- Minimum information required to realize highly automated driving
- Information useful for driver assistance systems and drivers

Building a mechanism for utilization as a collaborative area



Signal information provision

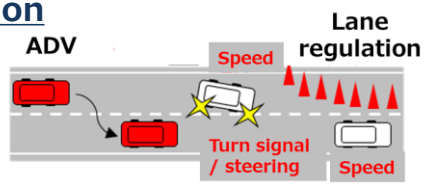
- Formulation of infrastructure functions and technical requirements that contribute to improving the reliability of signal light color recognition and smooth driving

Road vehicle cooperation, merging support, etc.

- Formulation of technical requirements for information generation and distribution functions using infrastructure sensors that contribute to smooth merging

Collection and utilization of private probe information

- Formulation of technical requirements for lane-level traffic environment information generation and distribution functions that contribute to the realization of a comfortable track plan



High-precision 3D map

Commercialization ('19/3~)

Detailed report in this session

Effectiveness verification by Tokyo waterfront area FOT

- Infrastructure installation and information distribution under actual traffic environment
- Internationally open experimental participants

Experiments in three distinctive areas

Tokyo Waterfront City area

- Signal information provision environment from ITS radio roadside unit
- High-precision 3D map linked with signal information etc.

Haneda Airport area

- Signal information provision environment from ITS radio roadside unit
- Magnetic marker
- Temporary bus stop
- Dedicated lane etc.

Metropolitan Expressway

- Providing information on merging support
- Providing ETC gate information
- Providing traffic regulation information by lane etc.

Detailed report in the afternoon session

オレンジ色：臨海副都心地域　緑色：羽田空港地域
青色：羽田空港と臨海副都心等を結ぶ首都高速道路

Future plans

- In order to promote R & D related to information utilization, the FOT environment in the Tokyo waterfront area will be extended until the end of FY2021.
- Based on the results up to FY2020, we plan to build a new traffic environment information and create a mechanism for practical use as the FOT of the Tokyo waterfront area in FY2021.

Thank you