

SIP-adus Activities Report

—Dynamic Maps—

Cross-Ministerial **S**trategic **I**nnovation **P**romotion Program
Innovation of **A**utomated **D**riving for **U**niversal **S**ervices

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<Translated Version>



What are dynamic maps?

■ Detailed road information

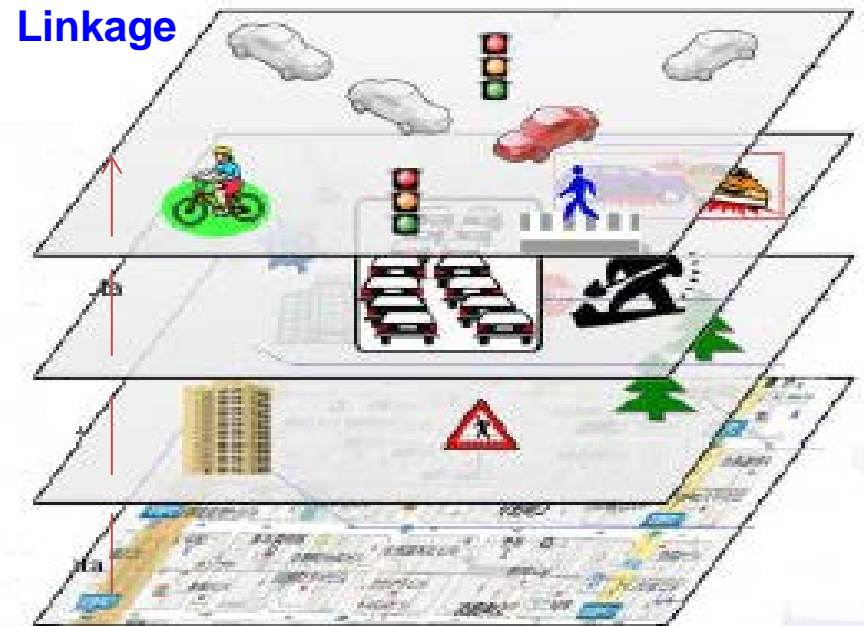
- High-precision maps: lane-level roads, intersections, interchanges (IC)
- Traffic rules
- Landmarks
- Traffic accident hotspots

■ Road traffic conditions

- Congestion information
- Traffic light status
- Road works, accident sites
- Weather
- Parking availability data
- Road surface information (frozen, wet)

■ Other vehicles, motorcycles, pedestrians

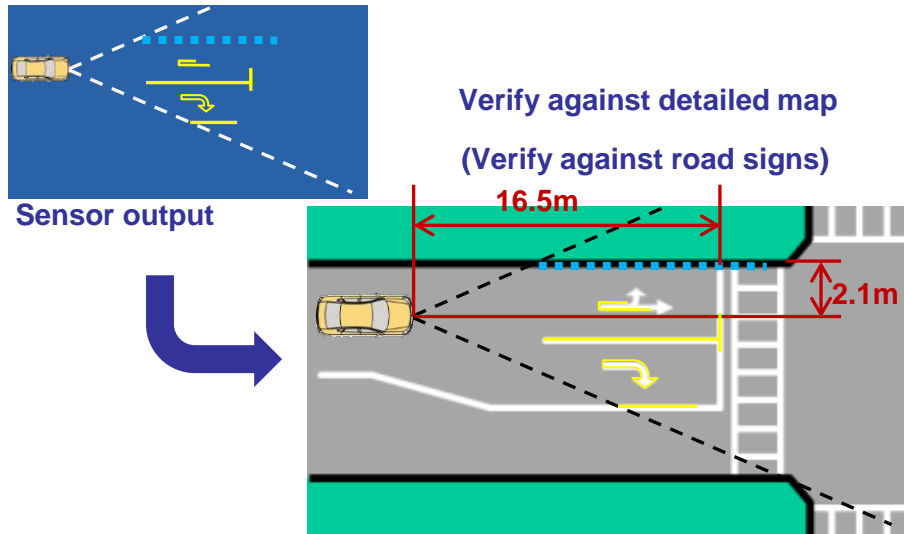
Handling of such data based on temporal and spatial integration



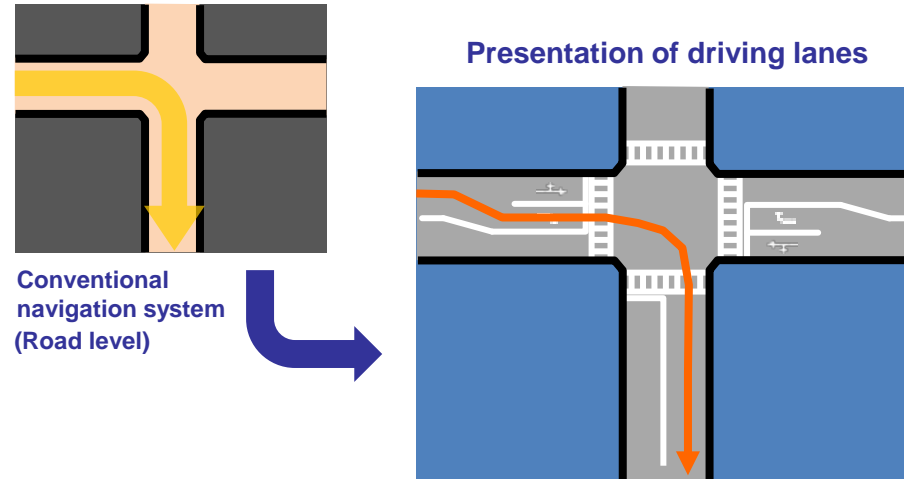
Foundation

Application of dynamic maps to automated driving

Identification of own position



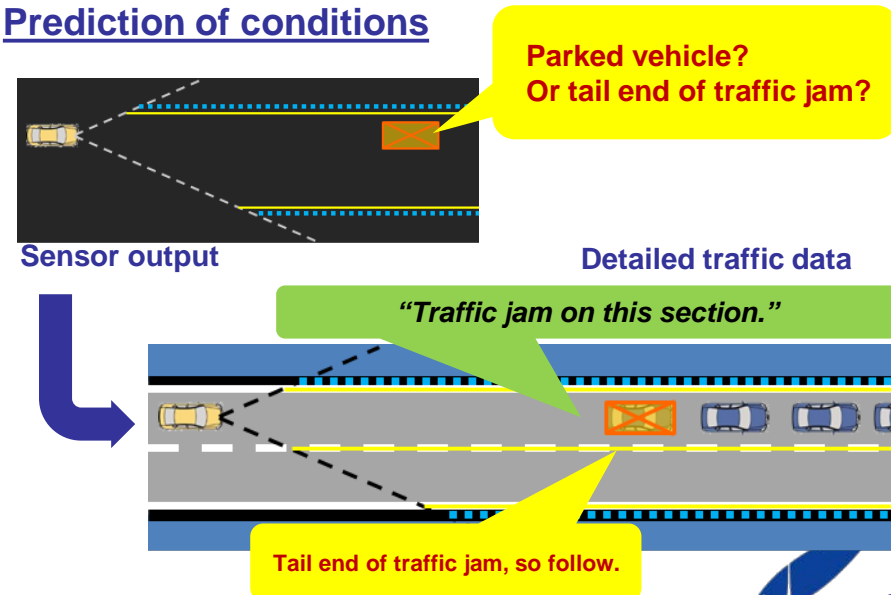
Route guidance at the lane level



Enhanced accuracy of obstacle detection



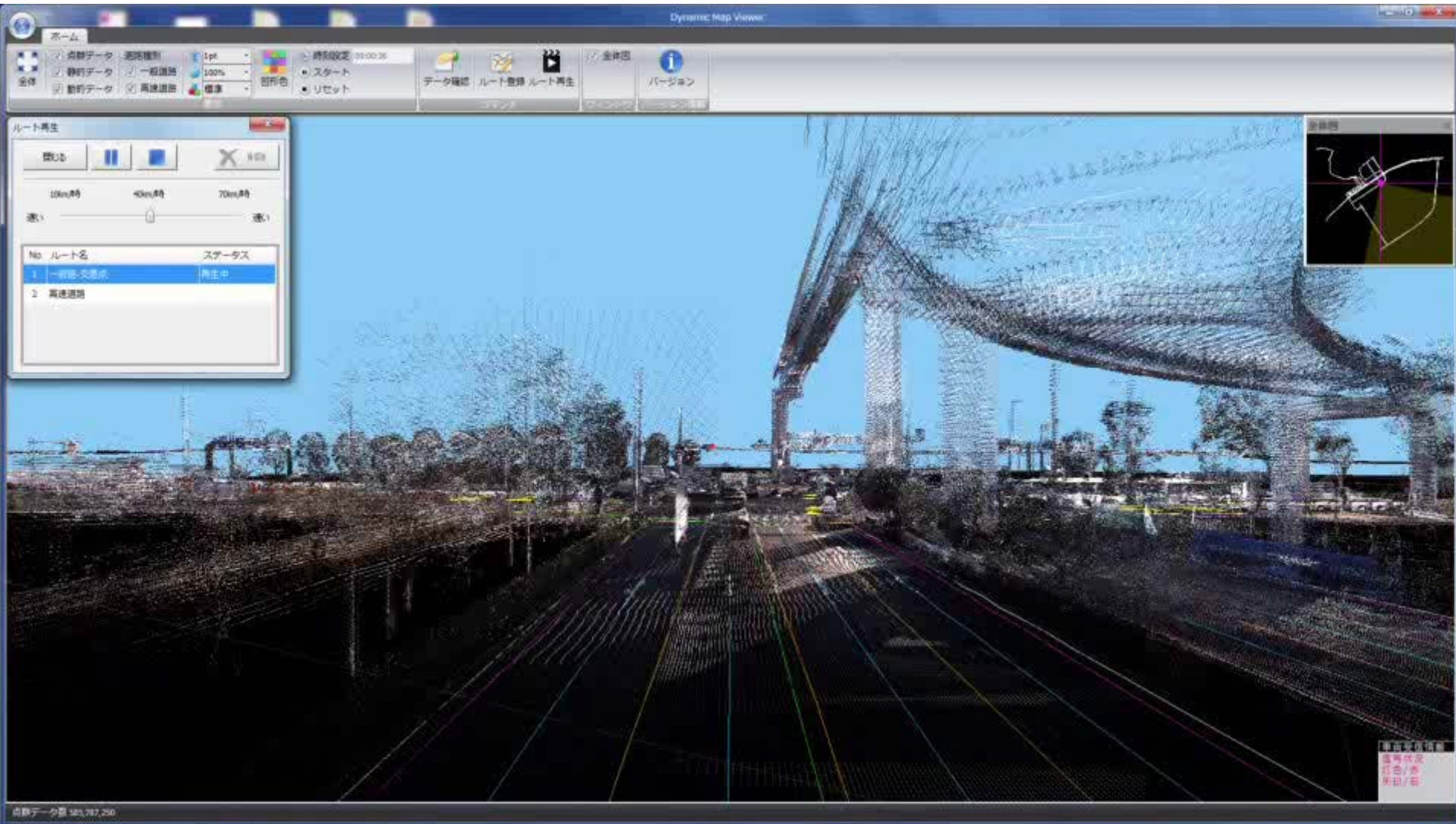
Prediction of conditions



Dynamic map measures

	Development and management of basic maps	Utilization of dynamic data	Utilization of dynamic map data
FY2014	Trial production of lane-level maps		Fleshing out of usage cases
FY2015	Creation of data specifications (proposal) and map data Compilation of outline (proposal)	Examination of road maps (proposal) for probe data utilization and deployment	Trial production of dynamic map data and viewer Requirement definition documents (proposal)
Position of current-year research			
FY2016	<p>(1) Creation of basic maps underpinning dynamic maps</p> <ul style="list-style-type: none"> - Measurement of road terrain - Creation of basic maps <p>(2) Examination of Dynamic Map Center functions</p> <ul style="list-style-type: none"> - Mechanism to update basic maps - Mechanism to aggregate and generate pseudo-dynamic data - Mechanism to provide data to map suppliers <p>(3) Building of Dynamic Map Center functions</p>		<p>(4) Verification of Dynamic Map Center function and maintenance costs</p> <ul style="list-style-type: none"> - Verification of Dynamic Map Center functions - Verification of basic map maintenance costs
FY2017 and beyond	<p>Verification of possibility of nationwide deployment Fleshing out of update scheme Field operation test Standardization Fleshing out of management method</p> <p>Practical use of dynamic maps</p> <p>(1) Showcasing automated driving system in Odaiba district (2) Realizing automated driving system for a wide range of roads</p>		

Dynamic map viewer (results of FY2015 measures)



Additional creation of basic maps (FY2016 measures)



Route No.1



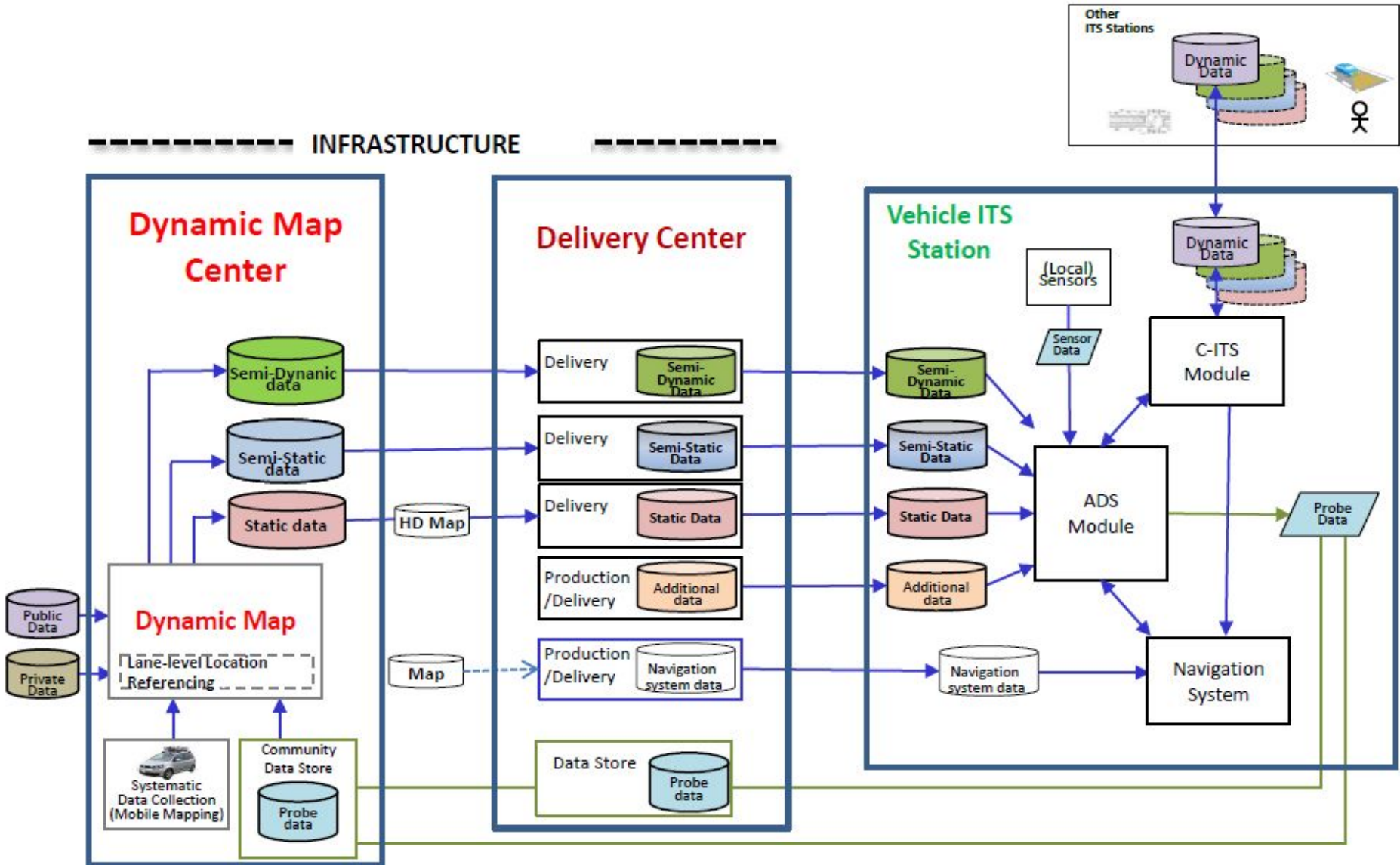
Route No.2



Route No.3

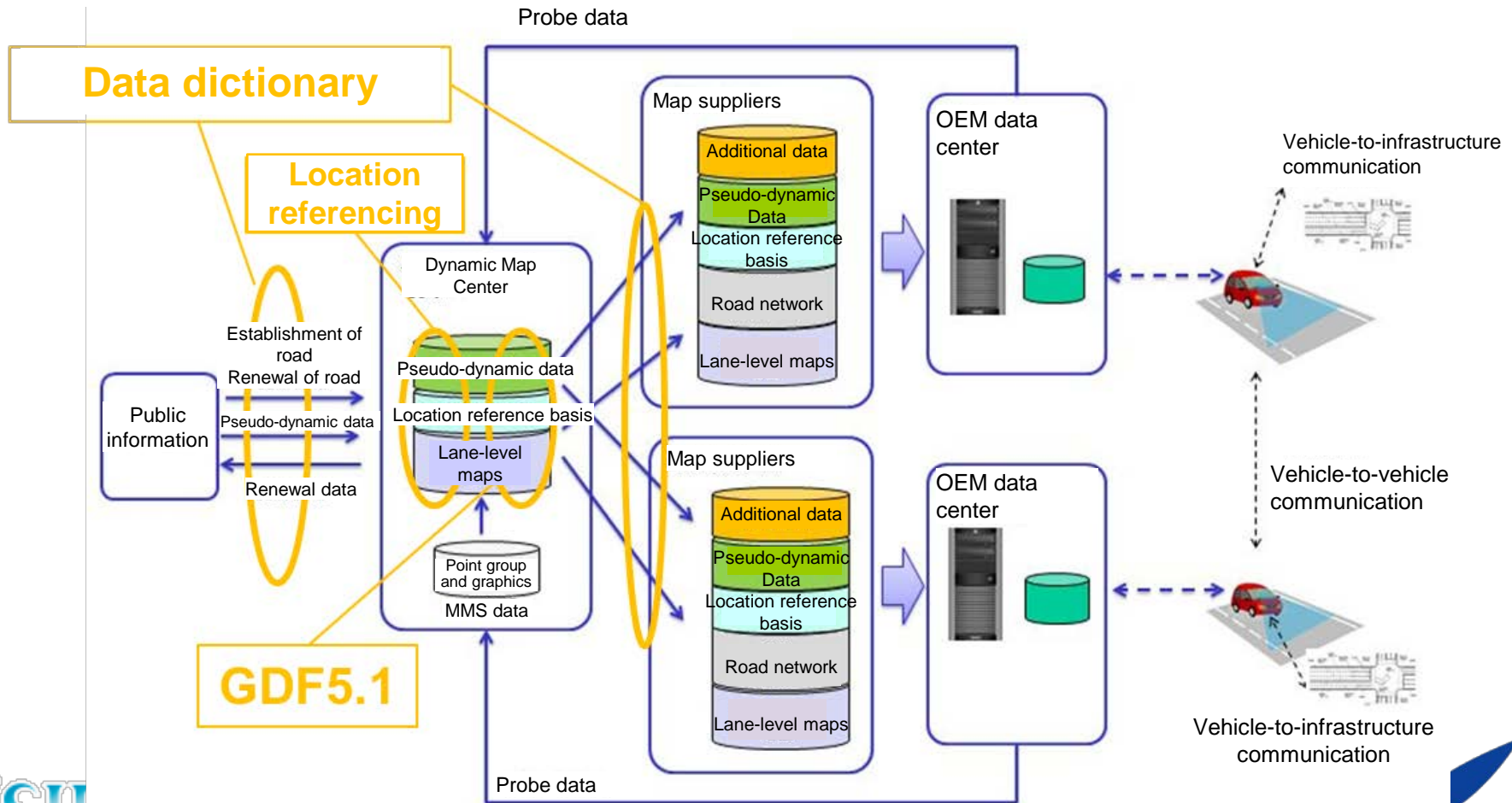
Route (km)	Characteristics
No.1 (200km)	Sharp curves, straight roads, and tunnels on highway
No.2 (40km)	Four-lane sections, concentrated traffic, congested sections
No.3 (20km)	Narrow roads, branching/merging roads, one-way slopes, junctions

Building of Dynamic Map Center functions (FY2016 measures)

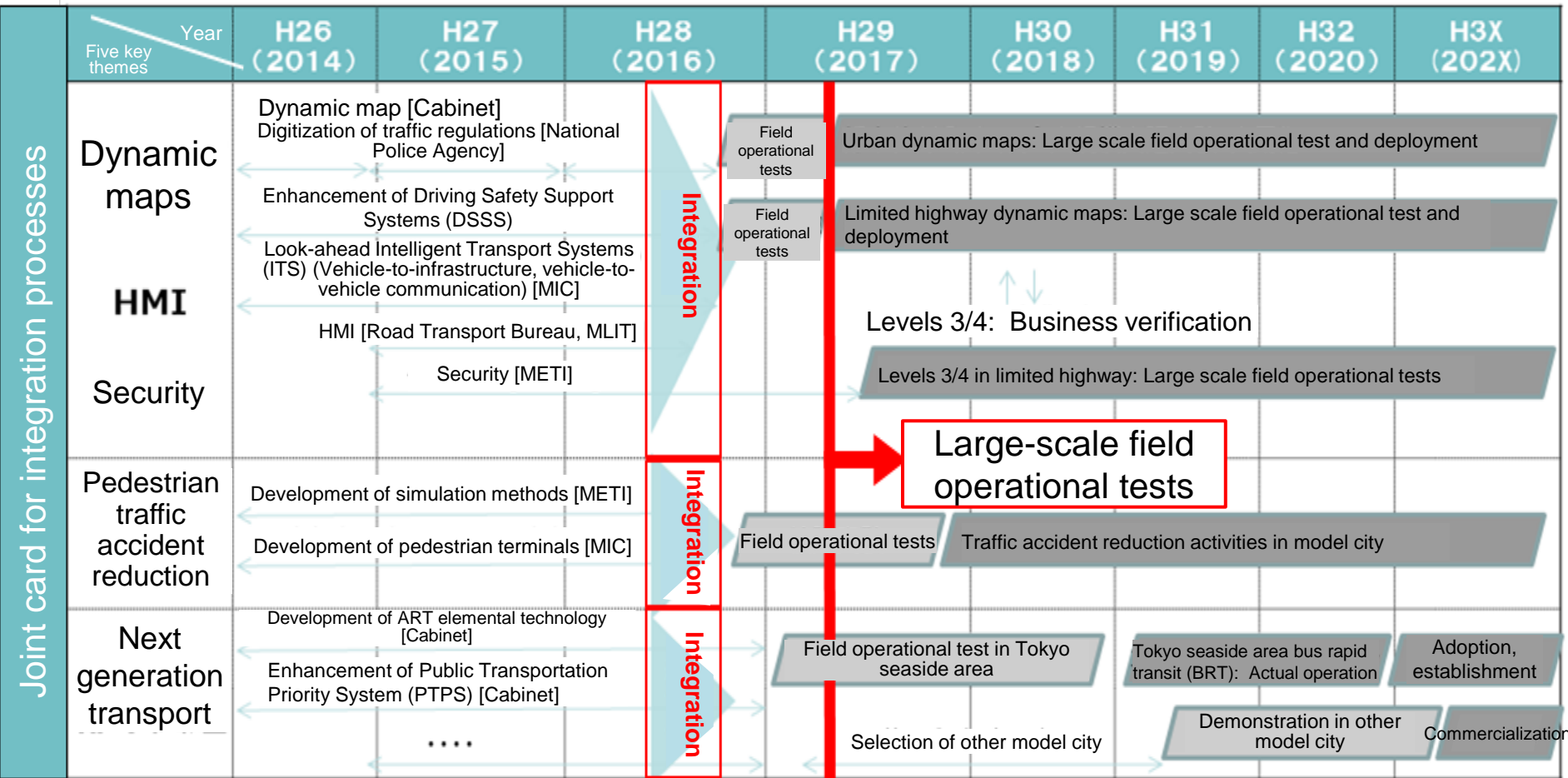


ISO TC204 standardization activities (FY2016 measures)

1. **GDF5.1**: Interchangeable file format for map data in environment with multiple map providers
2. Temporal and spatial dictionary
3. Promote ISO standardization for lane-level position referencing method



Large-scale field operational tests (FY2017-)



Thank you for your attention.