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Testing with Self-Driving permit and its dilemma

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Outline

- L4 self-driving car permit(R2L4 project) in Japan
- Self-Driving car legal framework in Europe

Japanese Government project “RoAD to the L4” (R2L4)

Background

Level 4 (L4) autonomous vehicles permit regulation was drafted based on Nov 19th 2021 cabinet decision to overcome COVID 19 and create new economic measure to stimulate the industry (the bill was passed on April, 2022 and execute on April 2023)

Japanese Government project “RoAD to the L4” (R2L4)

Japanese Government’s policy target about autonomous driving(AD) is to launch AD transportation services in **50 locations in 2025** and **100 locations in 2027**.

The roadmap to achieve this goal is “RoAD to the L4 (R2L4).”

- BTW, TIER IV also name “R2L4” project to its own business related to this project.

To achieve this goal, Japanese government already

- supports funding for local governments trying AD services
- makes regulations corresponding to Level 4 AD vehicle and operation

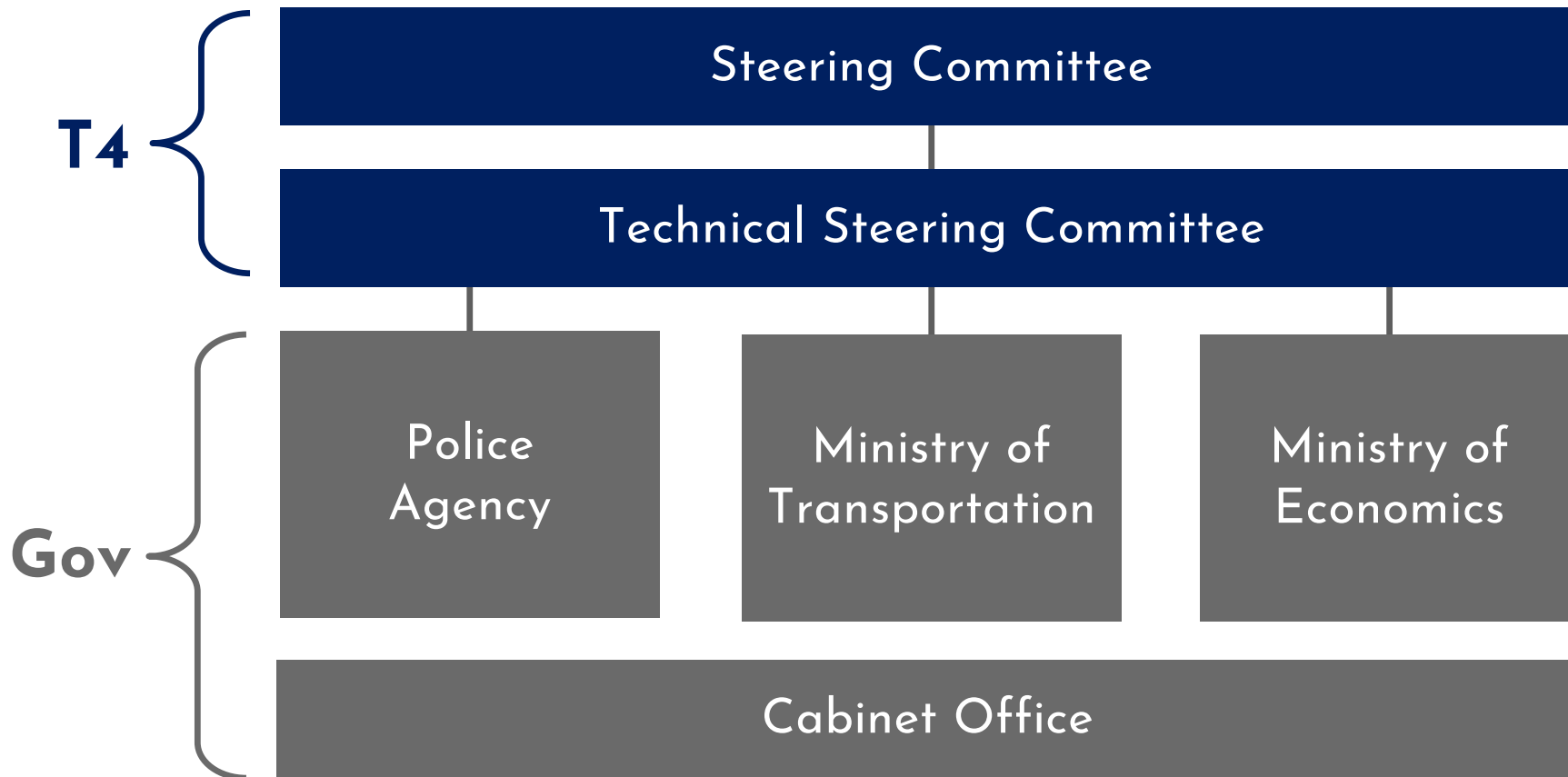
Understanding what L4 really means

- L4 as a regulation means that no human drivers are involved in the operation of vehicles.
- L4 as a service is based on the L4 regulation, but it can involve human drivers who manage the case that the L4 regulation does not hold.
 - ✓ Imagine some L4 service is being operated under the pre-defined operational design domain (ODD). If sudden squalls occur, which is not pre-defined as part of the ODD, the L4 service stops and switches to the L2 service with human drivers monitoring the operation of vehicles from remote place, that is, the driverless operation is still able to continue.

Overview of L4 Regulation

1. Regulation to produce systems for L4 autonomous vehicles.
 - ✓ Led by **Ministry of Transportation**.
 - ✓ Committee Driven and Government Decision Making.
2. Regulation to use roads with L4 autonomous vehicles.
 - ✓ Led by **Police Agency**.
 - ✓ Committee Driven and Government Decision Making.
3. Guideline is provided to satisfy the regulation and solve other problems.
 - ✓ Led by **Ministry of Economics**.
 - ✓ Committee Driven and Government Decision Making.
 - ✓ Government Funded National Projects for Proof of Concept.

Government Organization to Define L4 Regulation



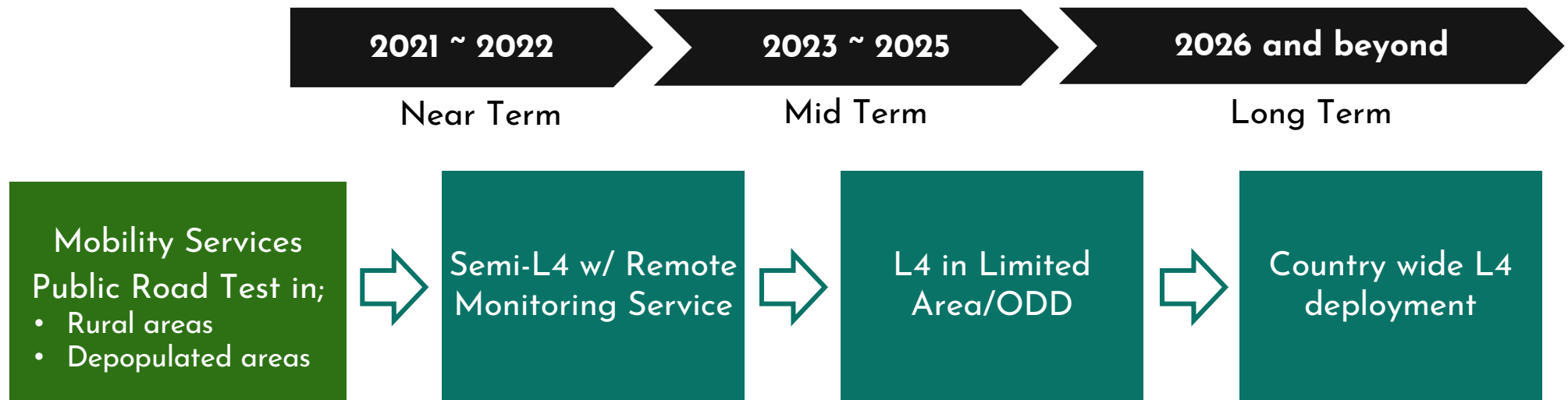
Policy Overview

- This policy includes 4 parts:
 1. Permit for L4 vehicle operation (for limited areas)
 - Permit issuing guideline by PPSC*
 - Follow the rules of 2,3 below and submit the plan to PPSC.
 2. Observance guideline to the permit holder
 - Operation plan submit to PPSC
 - Optional to install remote monitoring system with operator
 - Training program to the operator
 3. Measures when facing the edge cases
 - Obligations of the operator when encounter incident
 4. Administrative disposition and etc.
 - Permit T&C defined by PPSC and Police department



*都道府県公安委員(PPSC): Prefectural Public Safety Commissioner

Scenarios to Deploy AD Services and Social Implementation



Government Target*

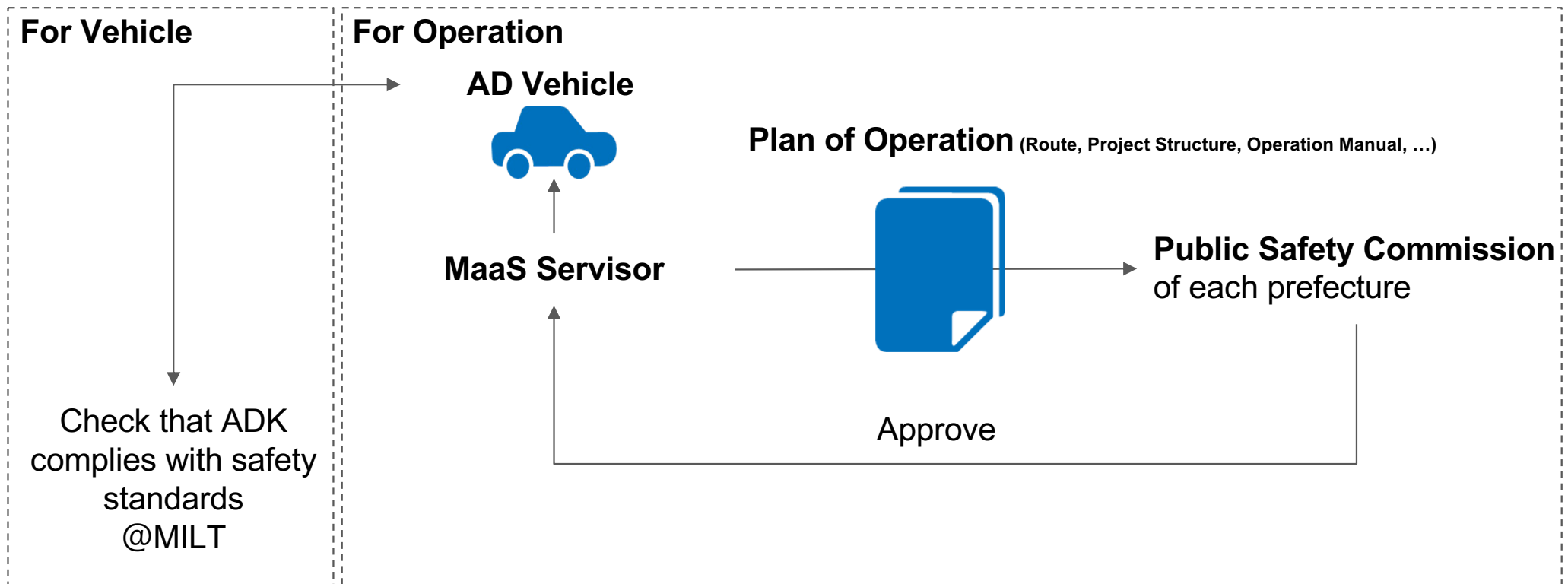
- Achieve pseudo-L4 (L2 in limited areas with remote monitoring) by 2022
- Deploy L4 services country wide (limited areas) by 2025

*Targets were defined by Strategic Headquarters for Promotion of Advanced Information and Telecommunications Network Society under the Prime Minister of Japan and his Cabinet at July 2020

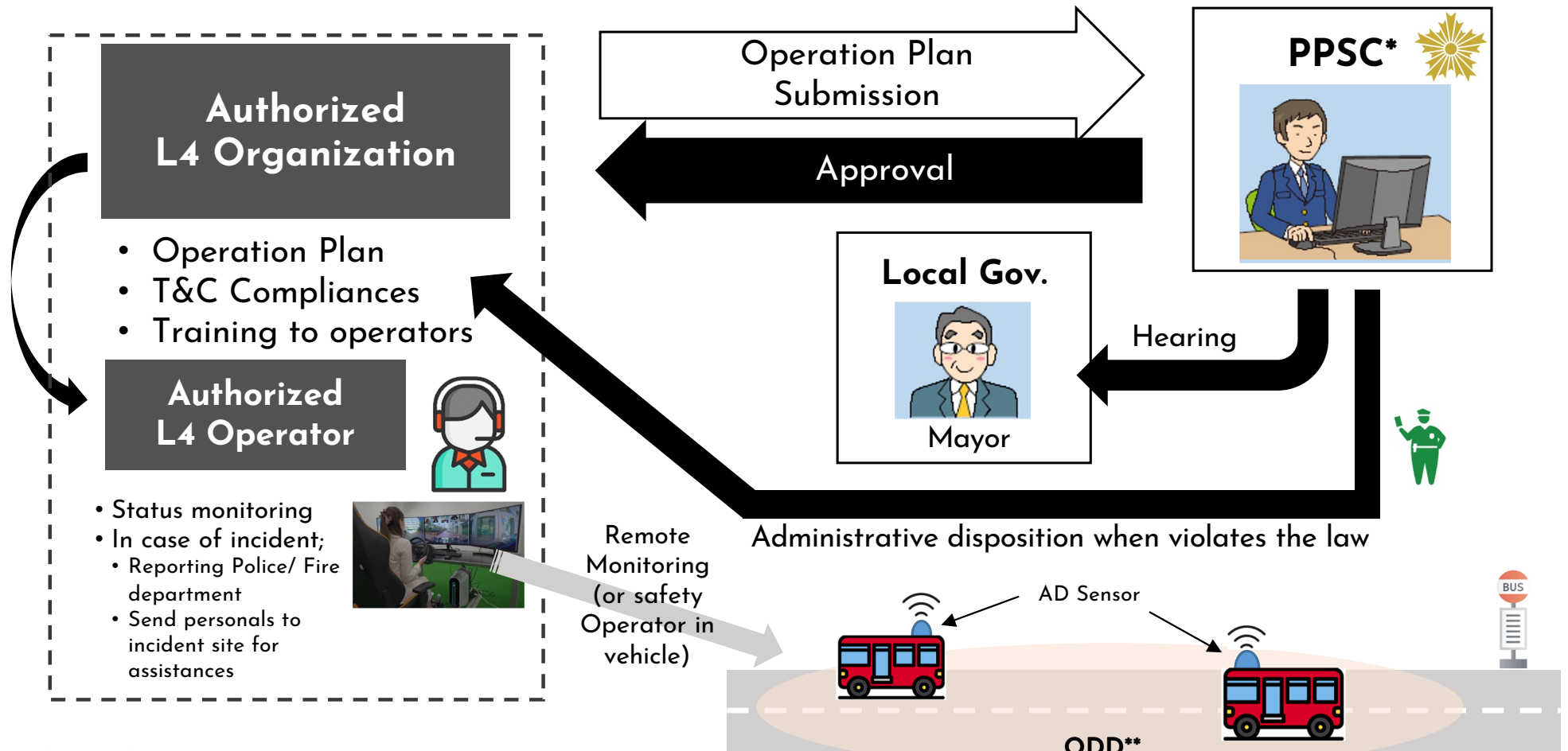
Structure of Lv.4 Certification in Japan

◆道路運送車両法
Road Transport
Vehicle Act

◆道路交通法
Road Traffic Act



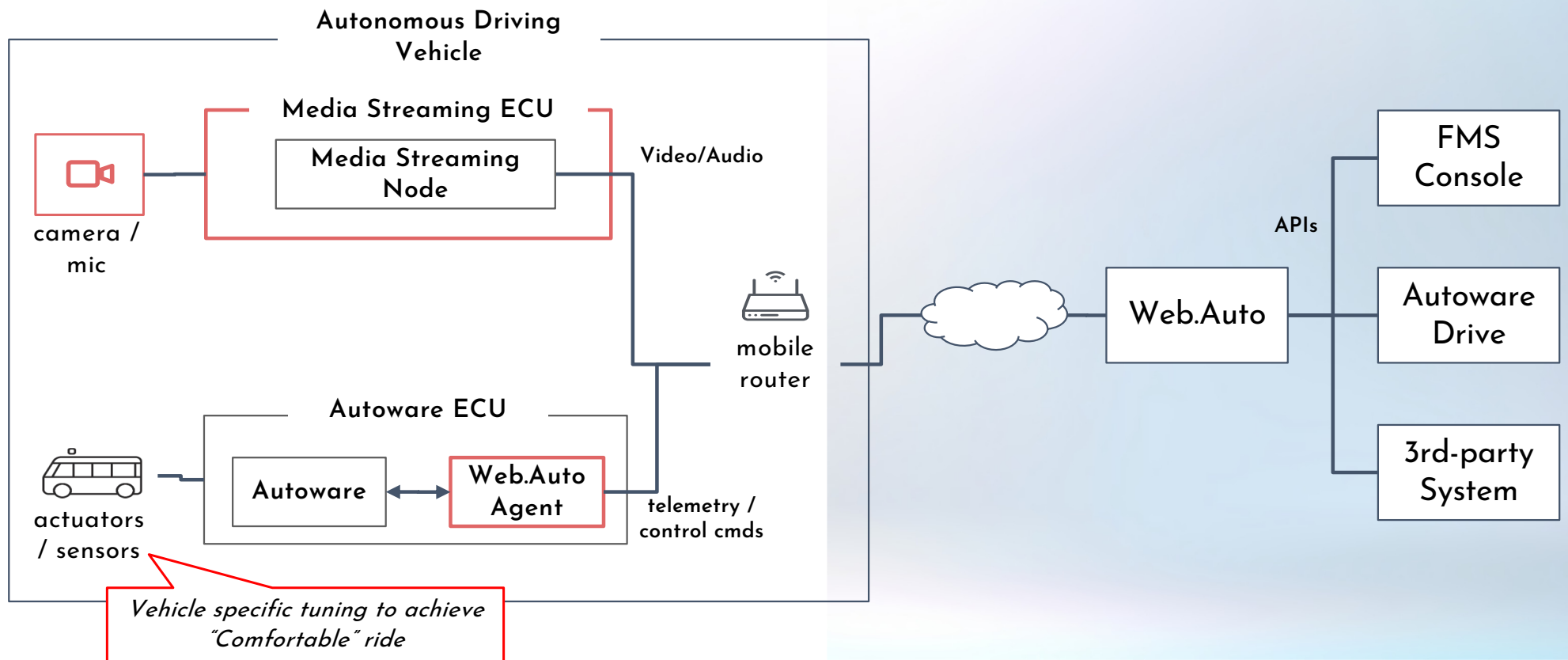
Process Flow to Obtain L4 Operation Permit



*都道府県公安委員(PPSC): Prefectural Public Safety Commissioner

**ODD (Operational Design Domain)

TIER IV Remote Monitoring and Control Solution : Streaming ECU , Camera and Web.Auto Agent.



SHIOJIRI

自動運転タクシー車両



TOKYO



Self-Driving car legal framework in Europe

- ❑ European Union member states are creating a legal basis for developing driverless trucks and buses, that regular use on public roads.
- ❑ The framework targets L4 self-driving vehicles.
- ❑ Germany is the first to legalize the framework(2022).
- ❑ Situation differs for each European country.

Process to get the permit in Germany

- ❑ Reach out to TÜV or similar independent testing institution
- ❑ Describe the technical modifications of the vehicle
- ❑ Develop an FMEA and/or similar failure analysis
- ❑ Define a data quality management system
- ❑ Define organizational guidelines for your R&D-staff
- ❑ Fulfill the requirements from the insurance company

Dilemma

Liability and insurance

- Who is liable in the event of damage?
- What should be covered by the insurance when an accident happens?

Data protection

- Who owns the data, who stores it and who has access?
- Vehicle and data monitoring via monitoring systems will be mandatory, but to what extent?

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Q&A
THANKS !