

Mar 3, 2025

Automotive Edge Computing Consortium

IRIGATE Overview

IRIGATE Outline

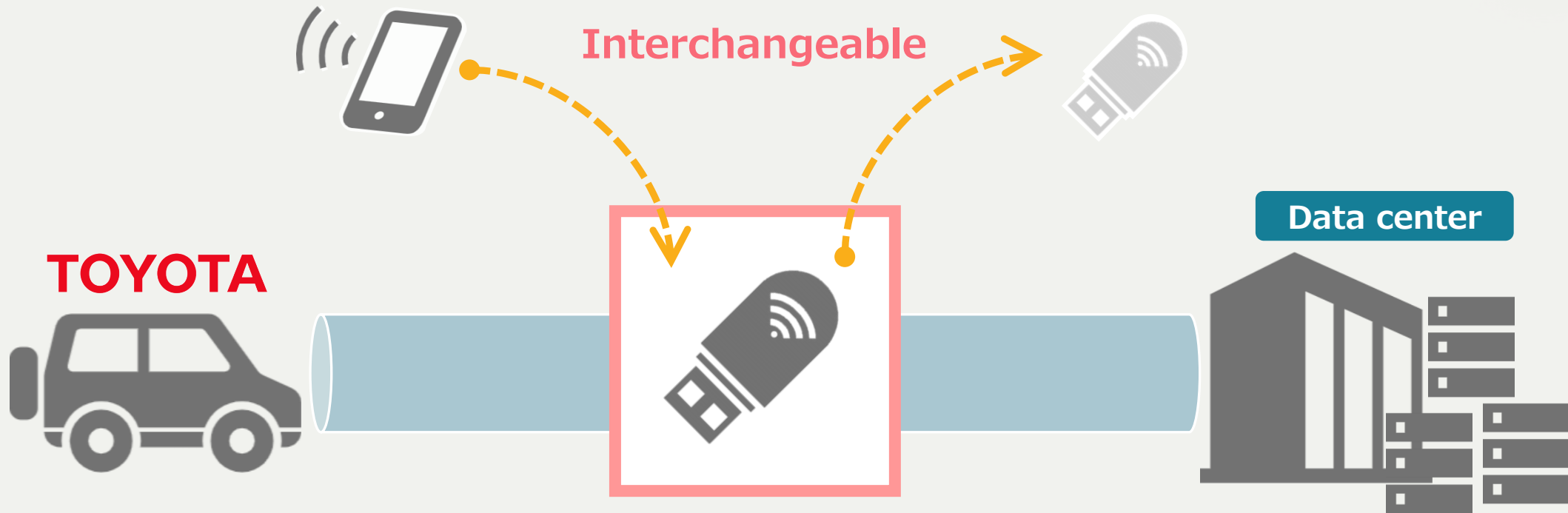


IRIGATE

- Intelligent
- Replaceable
- Interconnections
- GATE

✂ It also play an English word “Irrigate” Water run in a farm

The aim of IRIGATE



TOYOTA

Data center

By being replaceable,
the issues of...

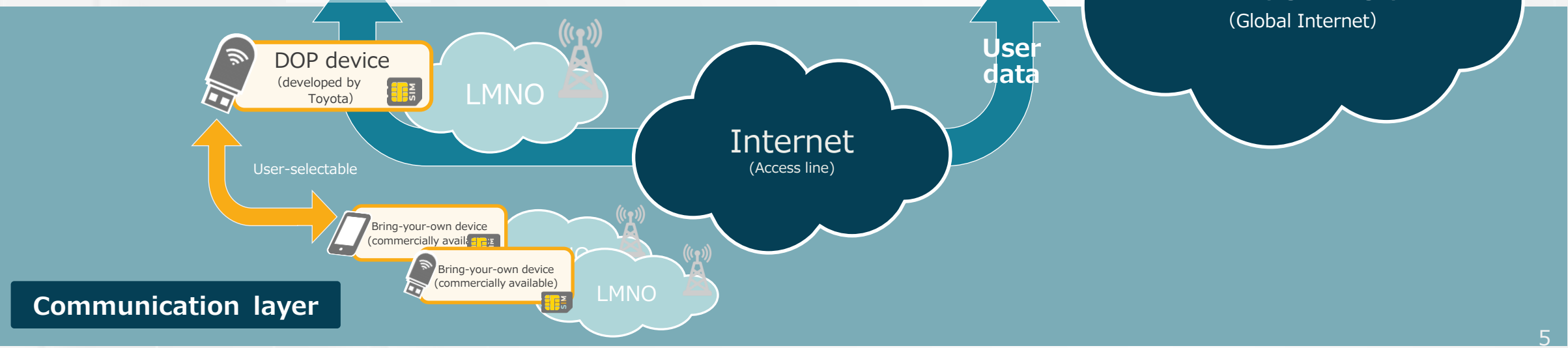
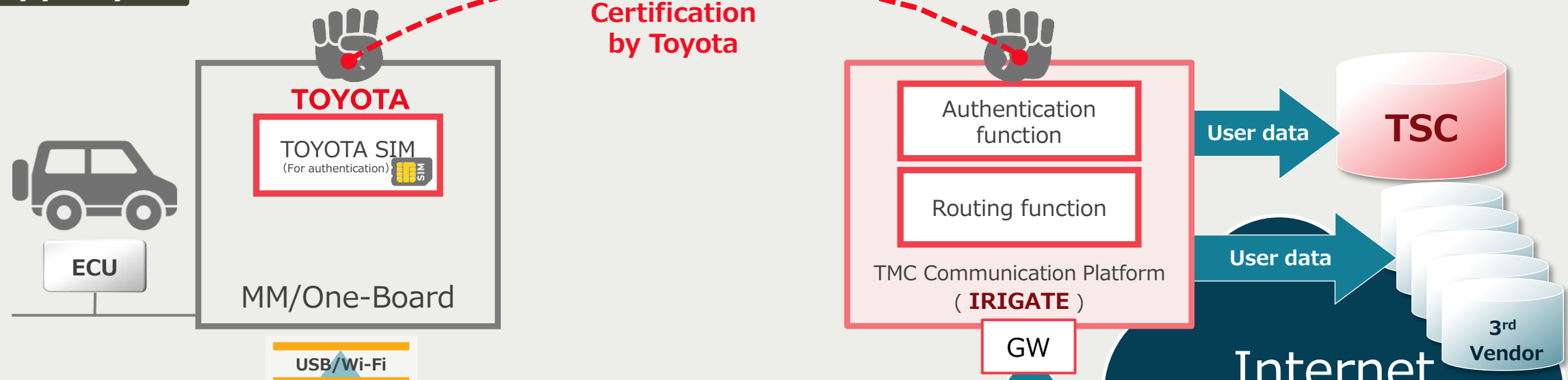
- **Sunset/20-year continuous use**
- **Provide connected service in all countries**

can be **solved**

Architecture of IRIGATE



App layer



What is IRIGATE

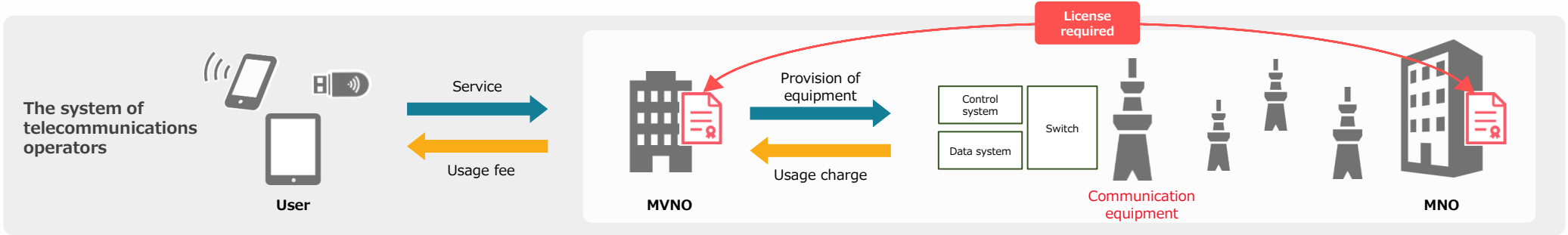
Isolate Connectivity



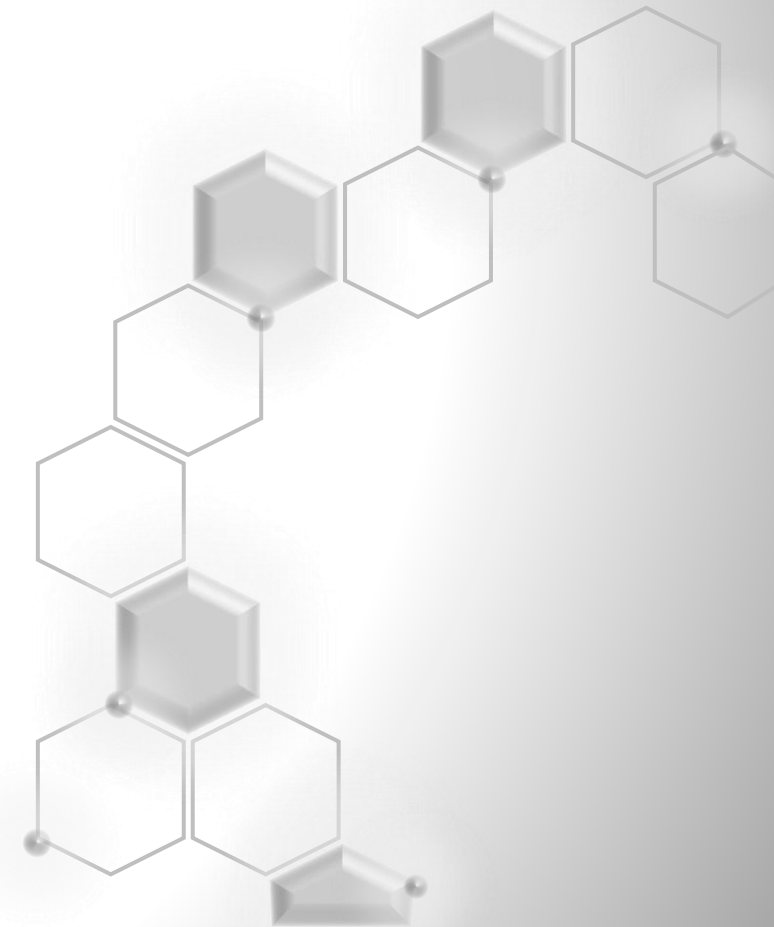
With cloud technology, internalizing **functionalities equivalent to those of telecommunications operators.**

Cellular on Cellular Covering the existing complex system

A system that centrally manages the connection between the vehicle and the cloud by placing a **SIM on the vehicle side** and **cellular infrastructure (5GC) on the cloud side**, and by independently building and operating both.



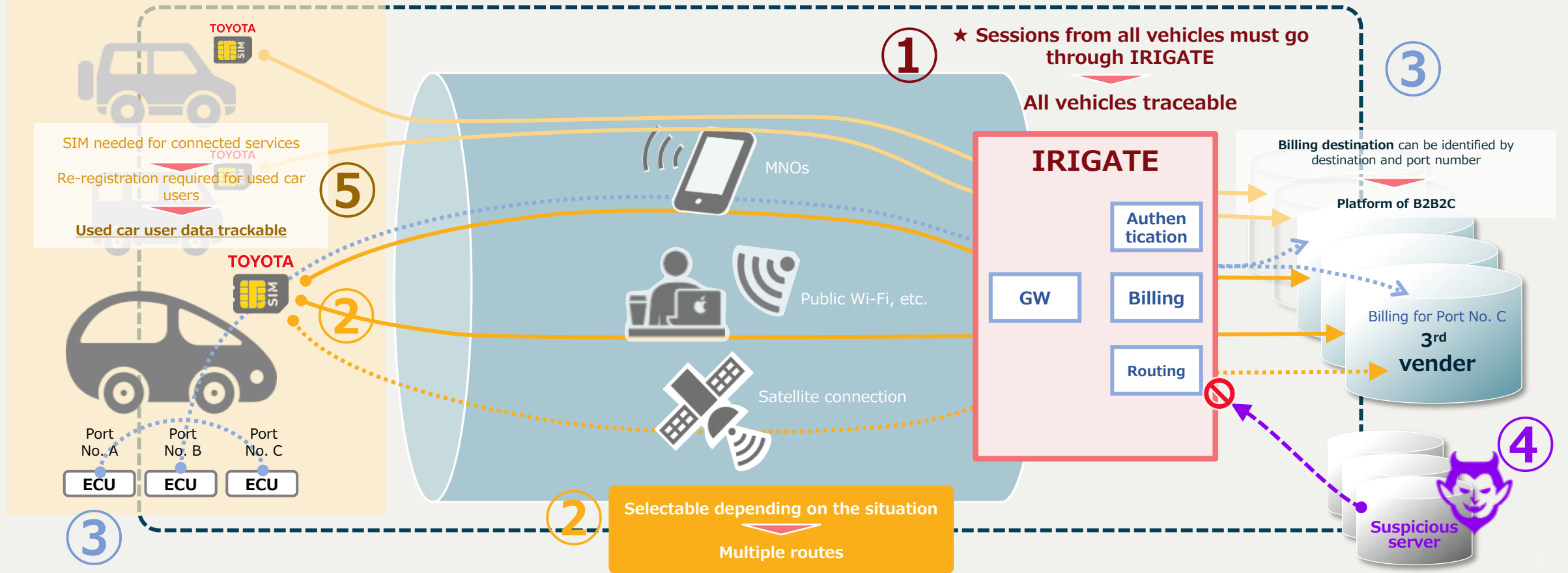
What IRIGATE can do?



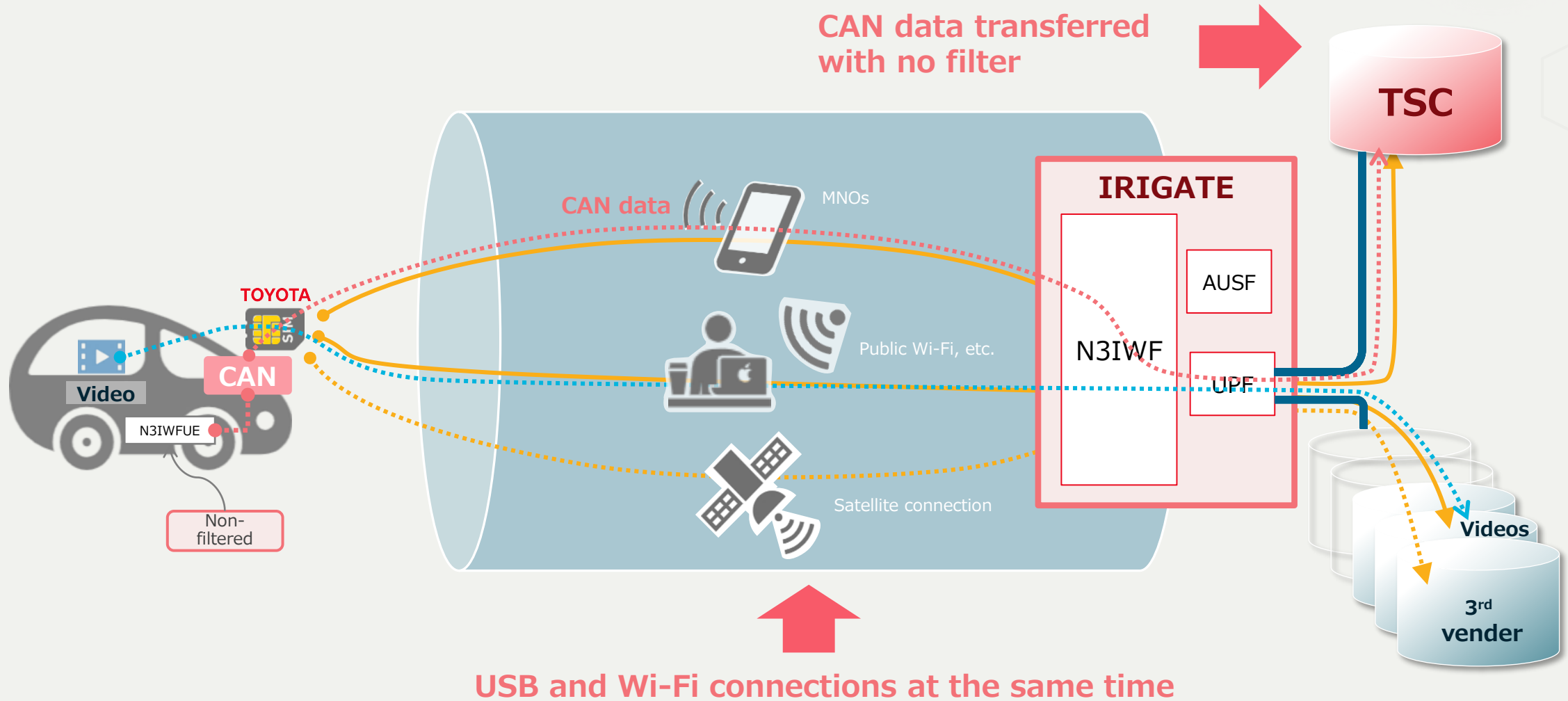
Why we need equivalent functionality as MVNOs

- ① Holding sessions of all vehicles
- ② Multiple routes
- ③ B2B2C
- ④ Blocking suspicious servers
- ⑤ Tracing used car users

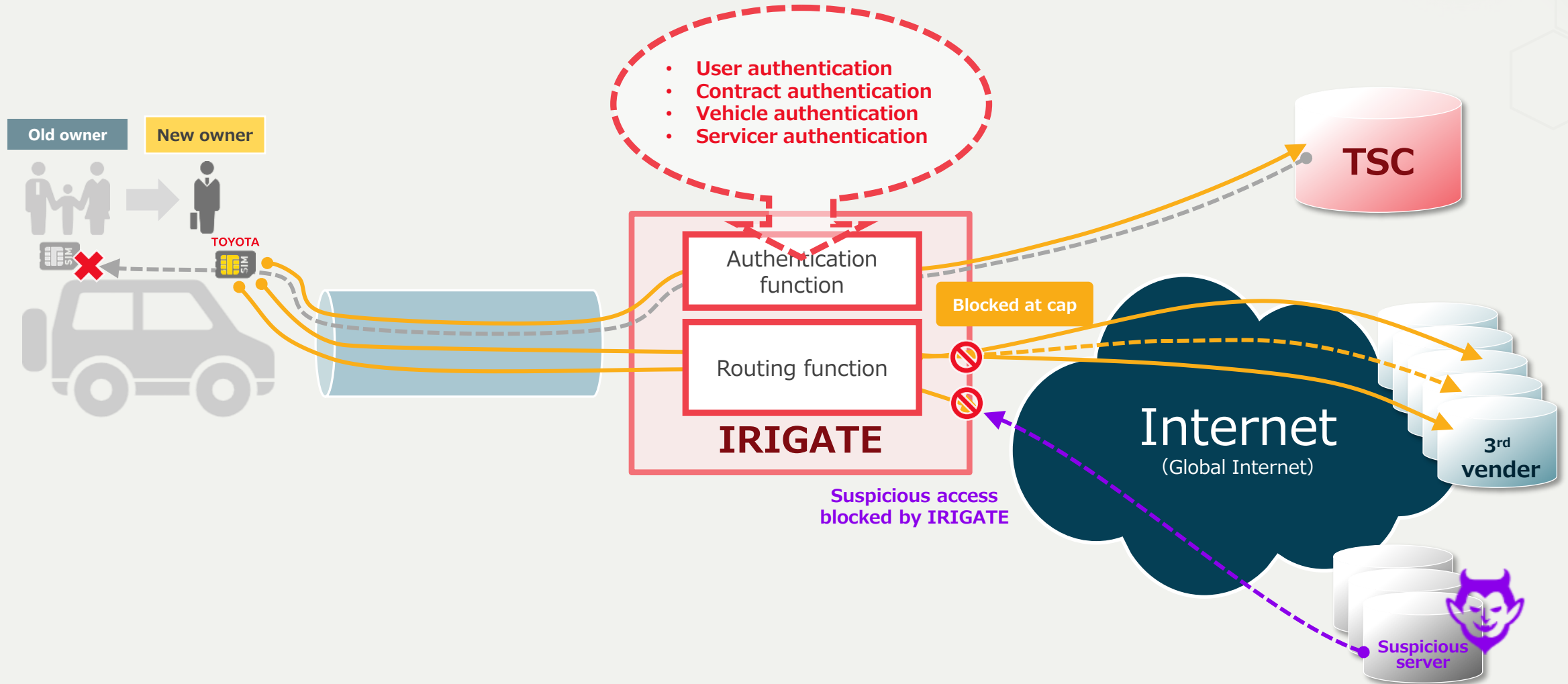
- Access from the car **can be selected** by user **according to the region and period**
- **Multiple lines** can be **connected simultaneously**



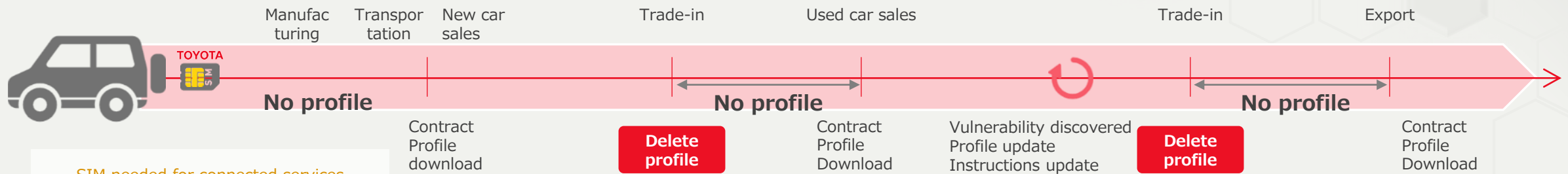
Two simultaneous connections (CAN and video)



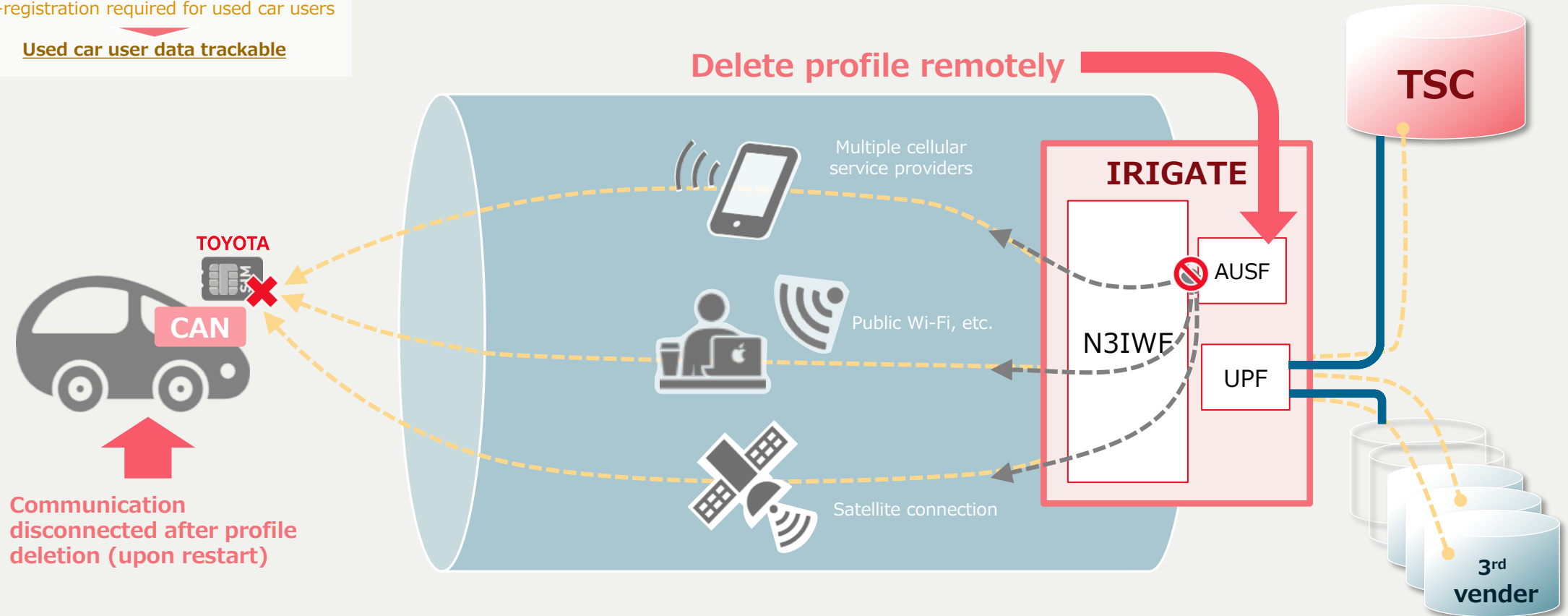
Various SIM-based authentication possible



Remote profile deletion (Trace users)



SIM needed for connected services
 Re-registration required for used car users
Used car user data trackable



Lifecycle

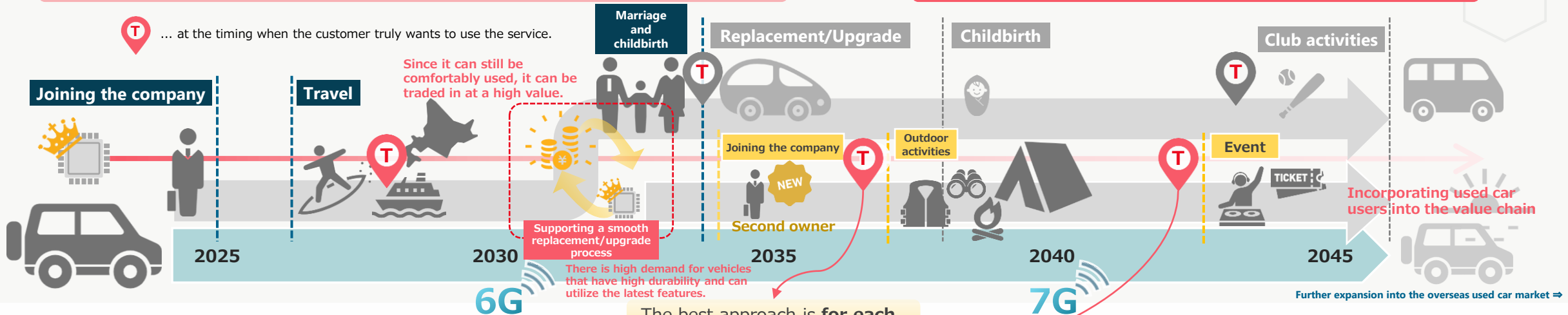


Car lifecycle - 20-year service continuity

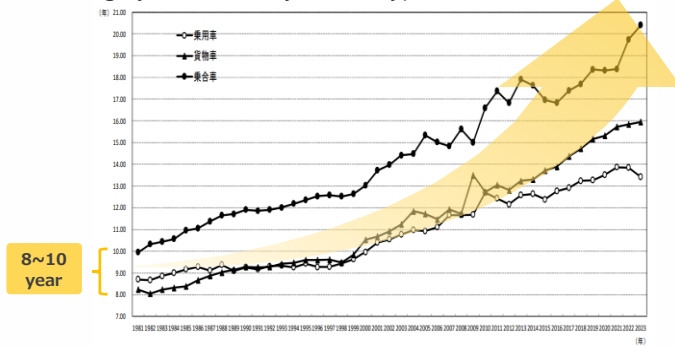
Presupposition: The lifecycle of cars is long compared to the speed of technological innovation in the ICT industry.

The new car buyers incur initial costs of embedded features in the vehicle even if they do not use them.

Can avoid the mismatch of new car users paying for unused features.



Average years of use by vehicle type trend table (Reiwa 5th year)



* Automobile Inspection & Registration Information Association
 [The Trends in Vehicle Ownership in Japan]

The best approach is for each user to bear the cost of the functions they use.

In the Japanese market, there is a growing trend of exporting used cars to overseas markets, where they are further utilized for extended periods.

The ability to adapt to changes in usage areas or sunset is the key to providing stable and continuous services.