

Applications of DSRC in Japan

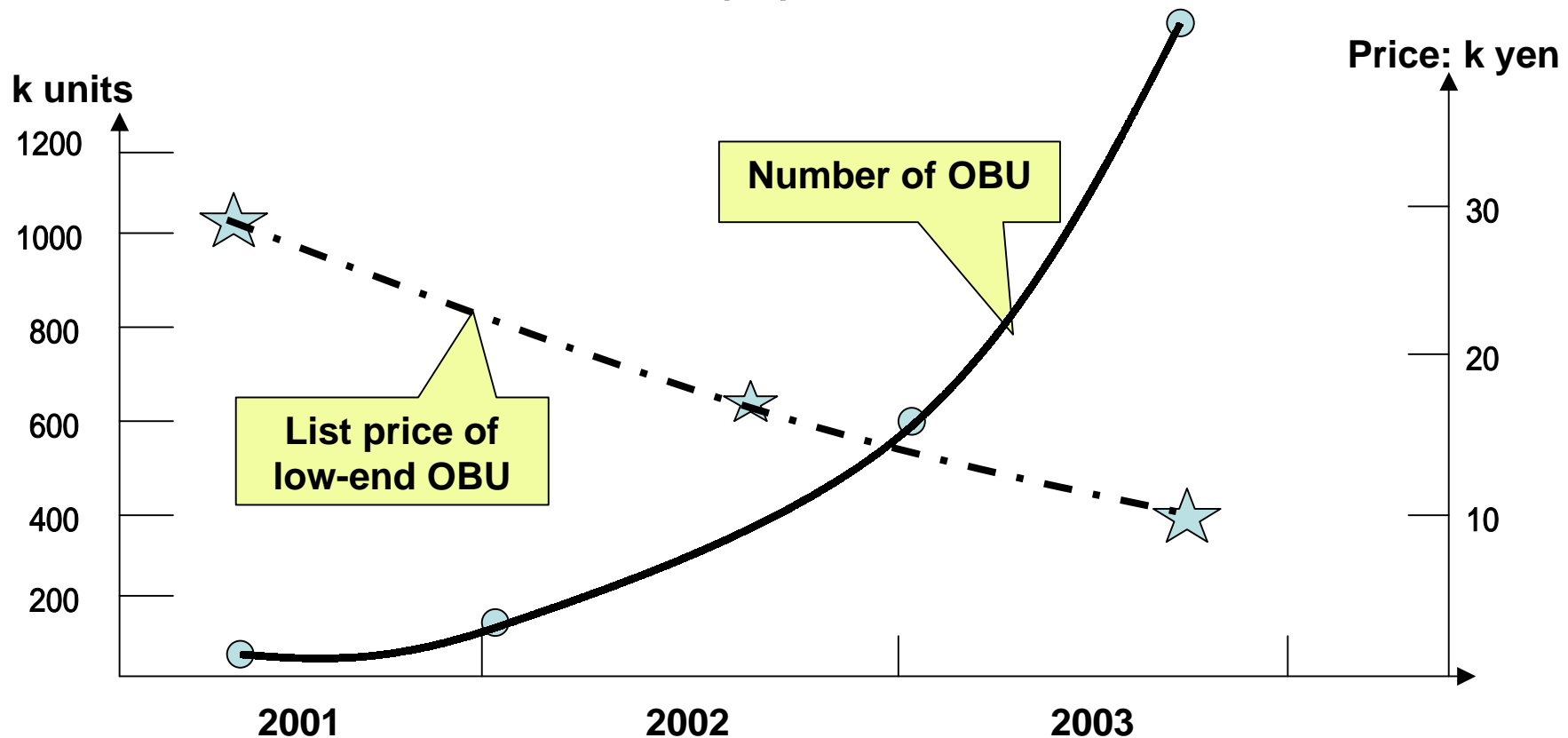
- DSRC applications to Vehicle Safety-

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Diffusion of ETC Systems

- Mar. 2001 --- Operation started at 63 toll gates
- Nov. 2001 --- Operation spread to 616 toll gates
- Jun. 2003 --- On-board equipment exceeded 1,000,000 units



Applications in Private Sectors

- Parking lot control (put into practice using ETC)
- Payment of tolls (specifications/standardization underway)
- Provision of road/traffic information
- Formulation of standards for versatile DSRC applications
 - Standardization of DSRC application sub-layer

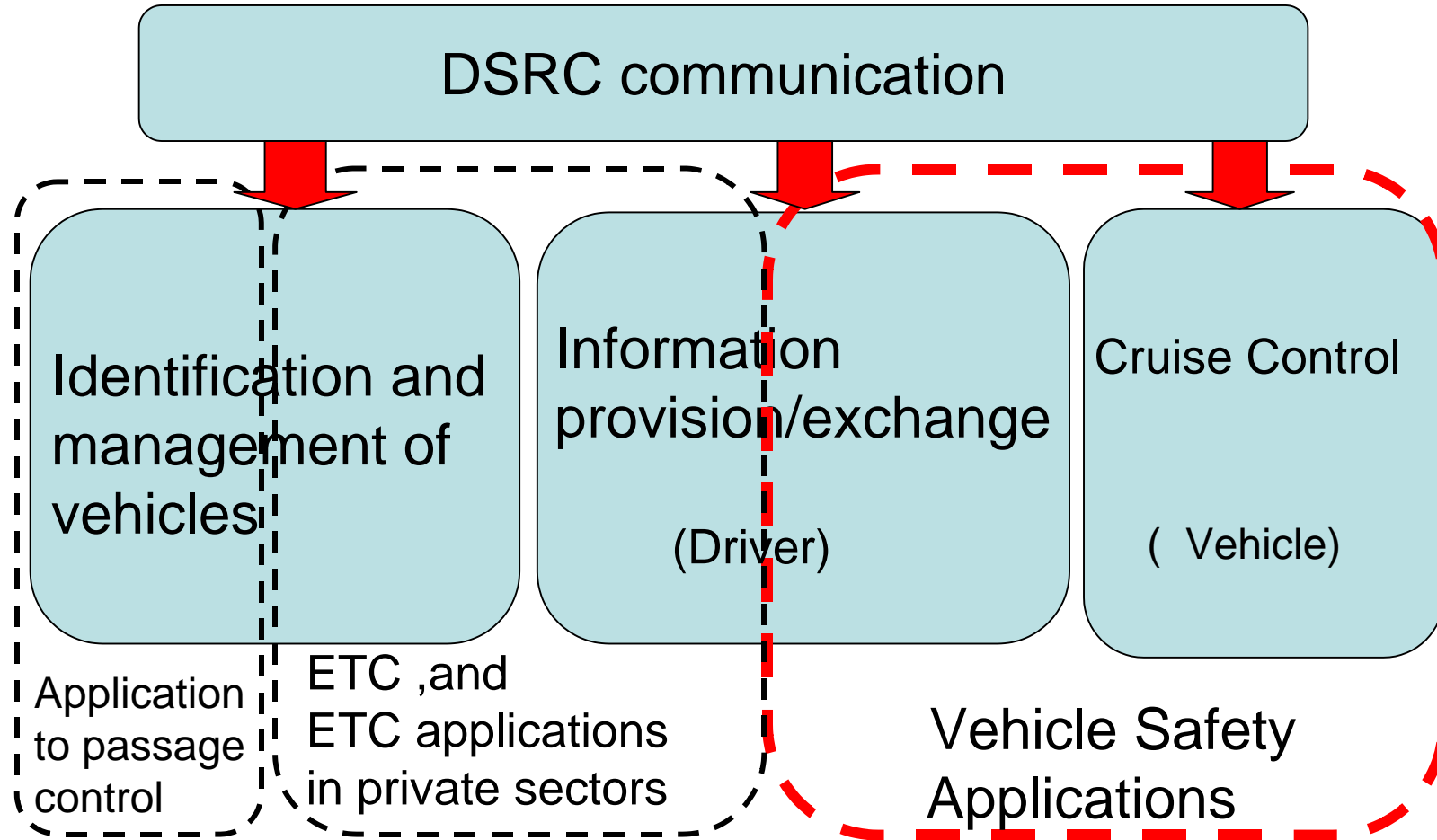
Various applications of ETC are being studied jointly by governmental agencies and private companies.

Applications to Vehicle Safety

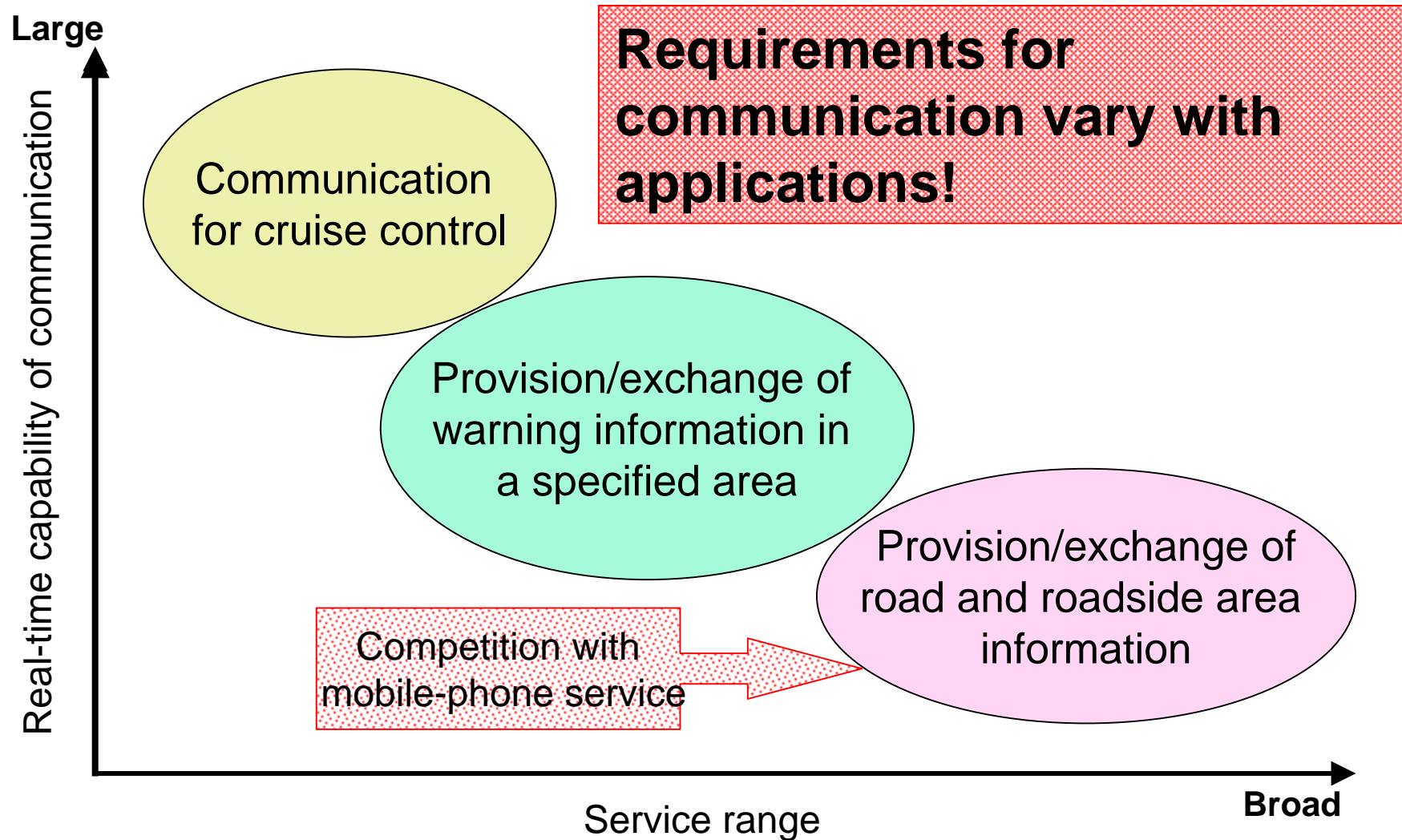
- Warning information provision (road-vehicle communication)
- Cooperative driving (inter-vehicle communication)
- Continuous communications using handover capability (road-vehicle communication)
- Safety drive assistance systems (inter-vehicle communication)

Many tests are underway to achieve highly reliable communications.

Classification by Application



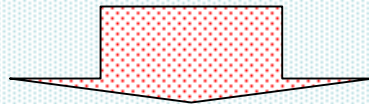
Communication for Vehicle Safety



Issues on VSC(Vehicle Safety Communication)

- Clarification of requirements for inter-vehicle and road-vehicle communications
- Clarification of relation among diffusion rate, serviceability, and communication reliability (especially for inter-vehicle communications)
- Who is responsible for providing services? (governmental agencies or private entities?)

These issues have an influence on standardization activities.



ITS Center of JARI is establishing the concept and reference model of inter-vehicle communication in order to formulate the idea of standardization.

Movements Concerning VSC at Related Parties

Practical use

AHSRA: Improvement of road infrastructure, ASV: Implementation in vehicles

Standardization

Support ISO/TC204

-WG14,15,16-(JAR/ITS-C)

ITU

Study of Japanese standards
(ITS-Forum ARIB)

Application/message data

Communication protocols
(2nd - 7th layer)

Platform VS. each protocol

Physical layer (5.8GHz)

- Information provision by road-vehicle communication (ARIB/AHSRA)
- Cooperative driving assistance by inter-vehicle communication (JSK)
- Drive assistance by inter-vehicle communication (ASV)

Technology development