# Overview of ITS and Vehicle Safety Communications in the world

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# Outline

1. What is ITS?
2. Vehicle Safety Communications in the world
3. 1st International Seminar & Workshop on Vehicle Safety Communications
4. Conclusion

# 1. What is ITS?

**Questions to be solved**

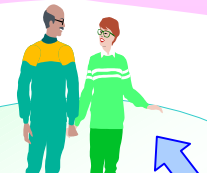
In Japan

**<Environmental Problem>**

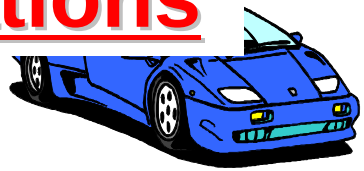
**Reduce $CO_2$:15%**
**Reduce NOx: 30%**

**<Traffic Jam>**
**Loss: About 12Triillion Yen**
**Reduce: 80%**

**<Traffic Accident>**
**Fatality: About 10,000**
**Reduce: 50%**



**Info-communications**



**Advanced Transportations**

**Safety・Smooth・Comfortable・Efficient・Environmental Protection**

**ITS**

# US: TEA 21 ⇒ SAFETEA

Goal: 30% reduction of deaths by 2008

**TEA 21**

IVI: R&D on traffic accident avoidance for each vehicle categories

**SAFETEA**

Recognized necessity of information exchange between vehicles and roadside

**ITS**

**Info-communications**

**ITS America Board Meeting, adopted the goal of zero deaths, zero injuries and zero delay.**

**(August 21, 2003)**

# Europe: e-Safety

- Established by EU
- Planned and Managed by ERTICO as a political activities for development plan for vehicle safety in Europe.
- Target: Reduce 50% of fatal traffic accident by 2010.
- Main projects which influences to communication:

  ADASE: Advanced Drivers Assistance Systems in Europe

  CarTalk:Vehicle to vehicle communication systems for keep safety

  ActMAP: Dynamic updating of on-board digital maps

  ETSI TG37: ITS Communications

# 2. Vehicle Safety Communications in the world

- US：
  - DOT/FCC/ASTM/IEEE/ISO
  - VSCC (Vehicle Safety Communications Consortium)
  - UC Berkeley/ PATH
- Europe：
  - ADASE
- Japan：
  - ITS Info-communications Forum
  - AHSRA
  - JARI(Ex. JSK)
  - ASV
- ITU/ISO
  - ITU-R SG8 WP8A
  - ISO TC204 WG16

# US (1): DOT/FCC/ASTM/IEEE/ISO

- FCC (Federal Communications Commission) allocated 5.85 – 5.925 GHz to ITS with priority safety.
- U.S. DOT funded ASTM to create the standards for 5.9GHz.
- Based on IEEE 802.11a, IEEE 802.11 has decided to start a study group for DSRC.
- Base for ISO TC204 WG16.

# US (2): VSCC

Vehicle Safety Communications Consortium

## Preliminary Detailed Communications Requirements for Selected High-Priority Safety Application Scenarios

- Traffic signal violation warning
- Left turn assistant
- Cooperative forward collision warning
- Lane change warning

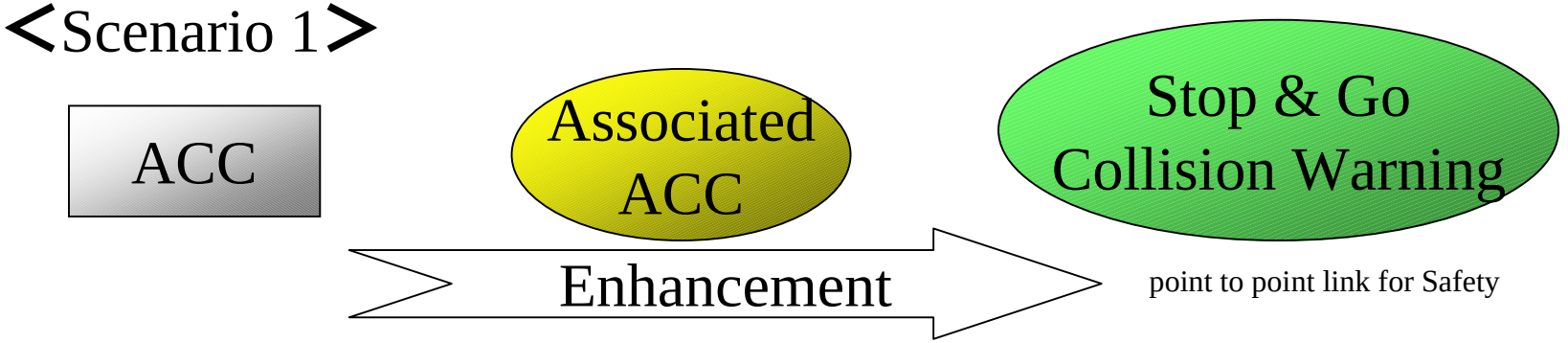
# Europe: ADASE 2

- **ADASE 2 (Advanced Driver Assistance Systems in Europe)** will be instrumental to ease the introduction and implementation of active safety systems by
  - harmonizing and communicating these functions,
  - identifying technological needs and focusing on essentials,
  - preparing architectures, roadmaps, and standards.

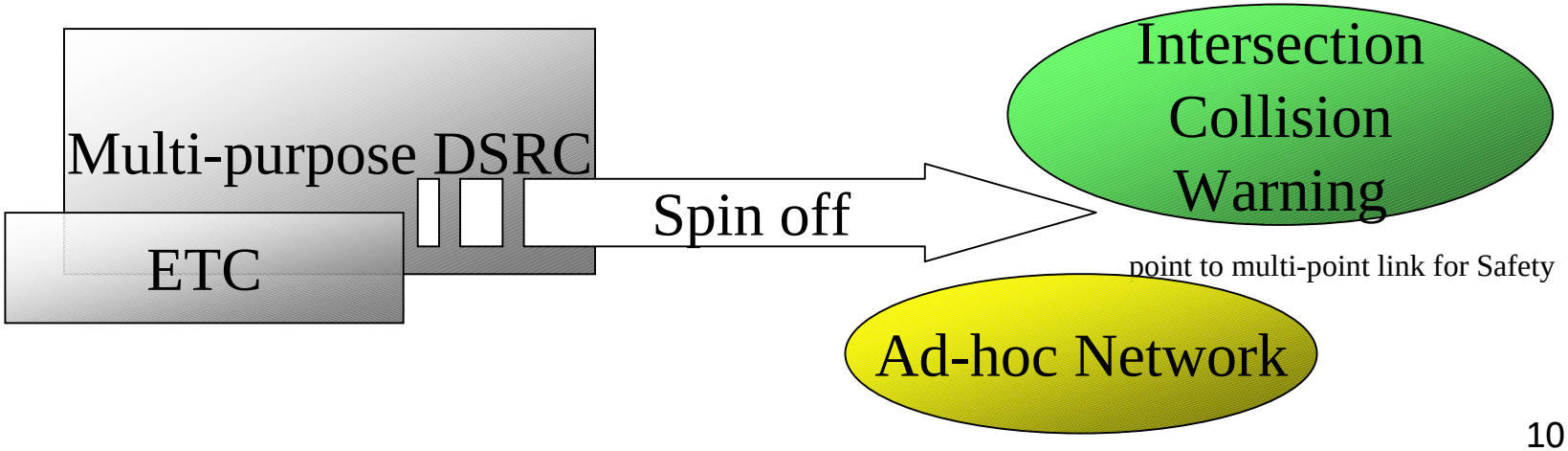
# Japan (1): ITS Info-communications Forum

## - Example - V2V Deployment Scenarios

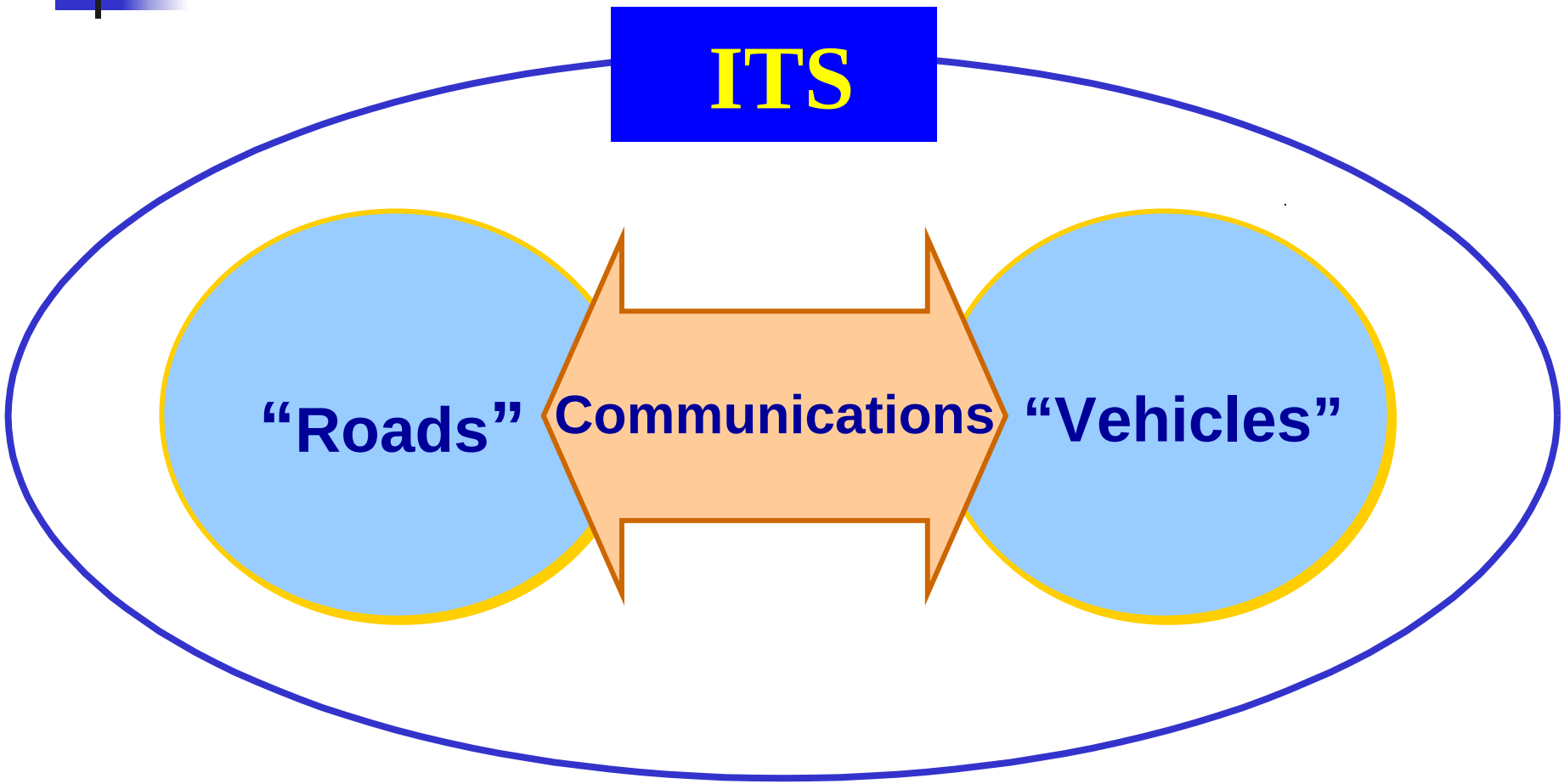
<Scenario 1>



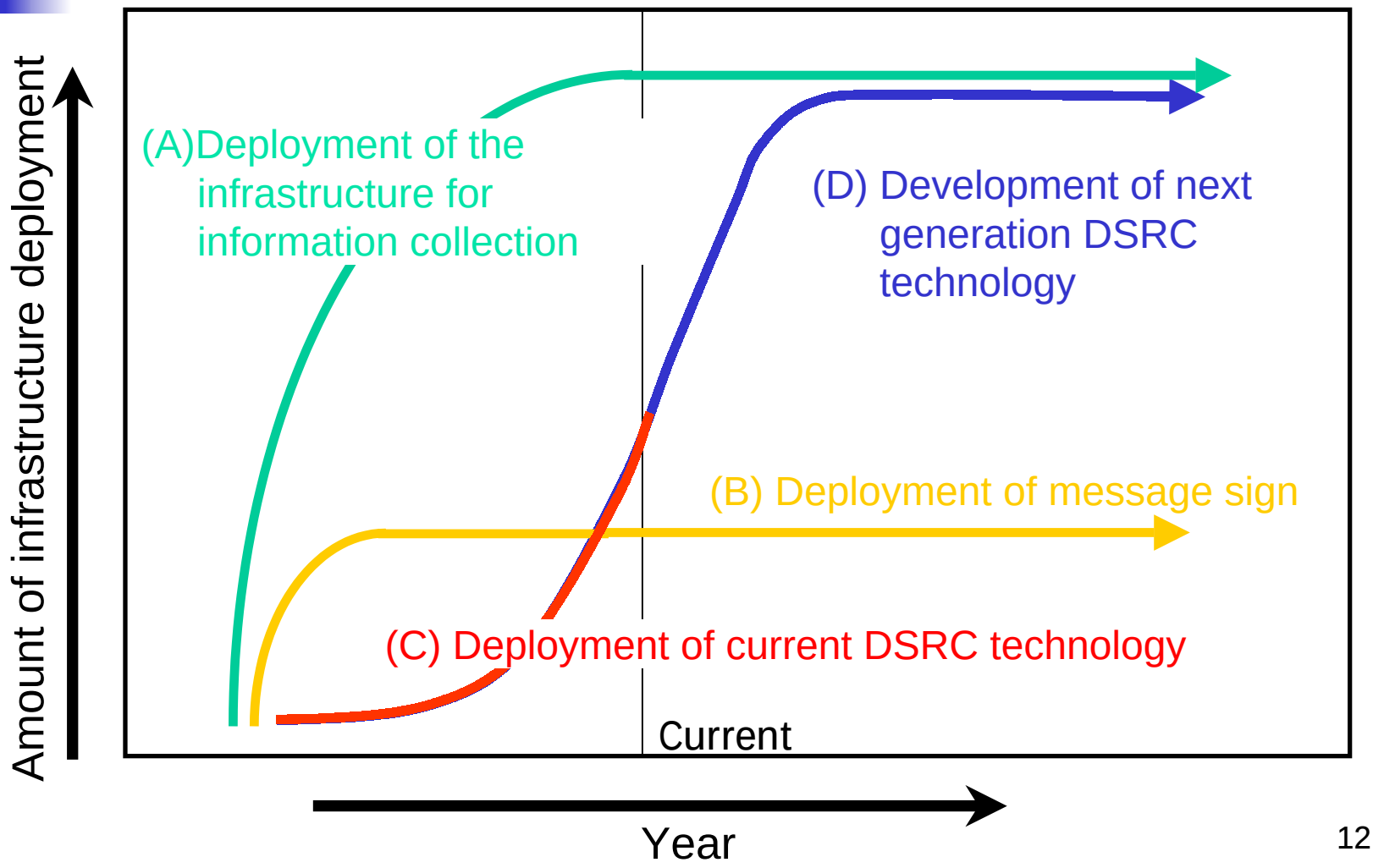

<Scenario 2>



# Japan (2): Road-Vehicle Cooperation



# Japan (3): AHSRA Deployment Plan



# Japan (4): JARI ITS-Center

**Study Activities on Inter-vehicle Communication**
**by JARI ITS-Center (ex-JSK)**

## (1)Feasibility Study

- **Cooperative Driving using IVC**

## (2)Standardization Study

**Support ISO/TC204 activities**

- **Construct "Concept Reference Model for IVC"**
  ⇨ **Status: Drafting for Proposal**
- **Experimental Study on Intersection Collision Warning using IVC**
  ⇨ **Status: Basic data acquisition for Proposal**

*JARI: Japan Automobile Research Institute*
*JSK: Association of Electronic Technology for Automobile Traffic and Driving*

# 3. 1st International Seminar and workshop on VSC

**1. Objectives**

- Sharing information on Vehicle Safety Communications (VSC) at international level
- Contribute for early deployment of Vehicle Safety Applications

**2. Workshop Agenda**

- Objective of Vehicle Safety Communications
- Understanding of Applications using Vehicle Safety Communications
- Communications for Vehicle Safety
- Communications for Vehicle Safety (Field tests)
- Global Standards on ITS radio communications

# 4. Conclusion

**Toward the future ITS･VSC deployment**

- Joint VSC development of Europe-US-Japan
- VSC Information distribution from Japan to the world
- VSC Standards Development
- Request vehicle manufacturers to join for this VSC development program
- Cost & Benefit