

Telematics in Korea

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Ministry of Information and Communication

Contents



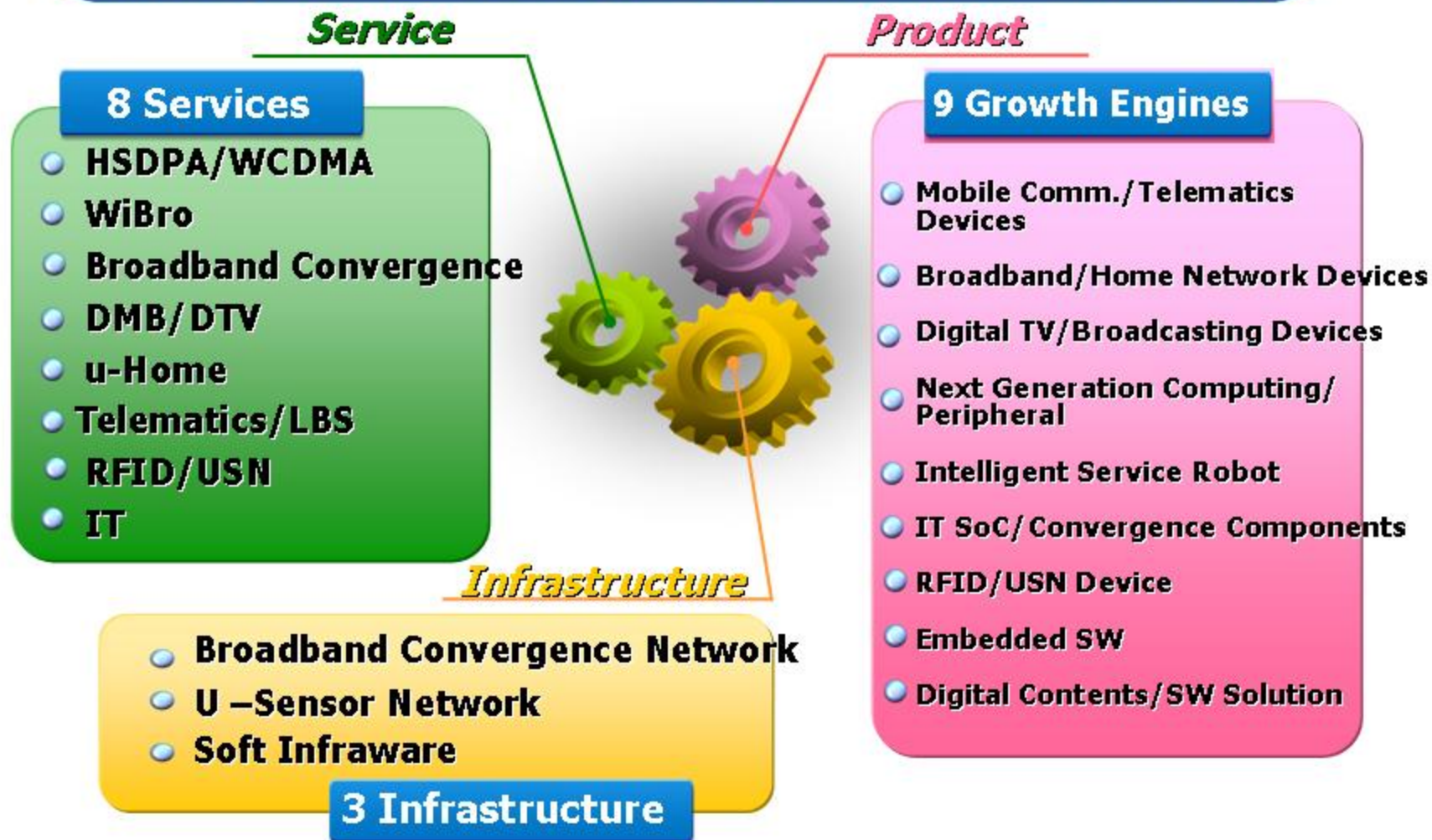
I Introduction

II Current Status

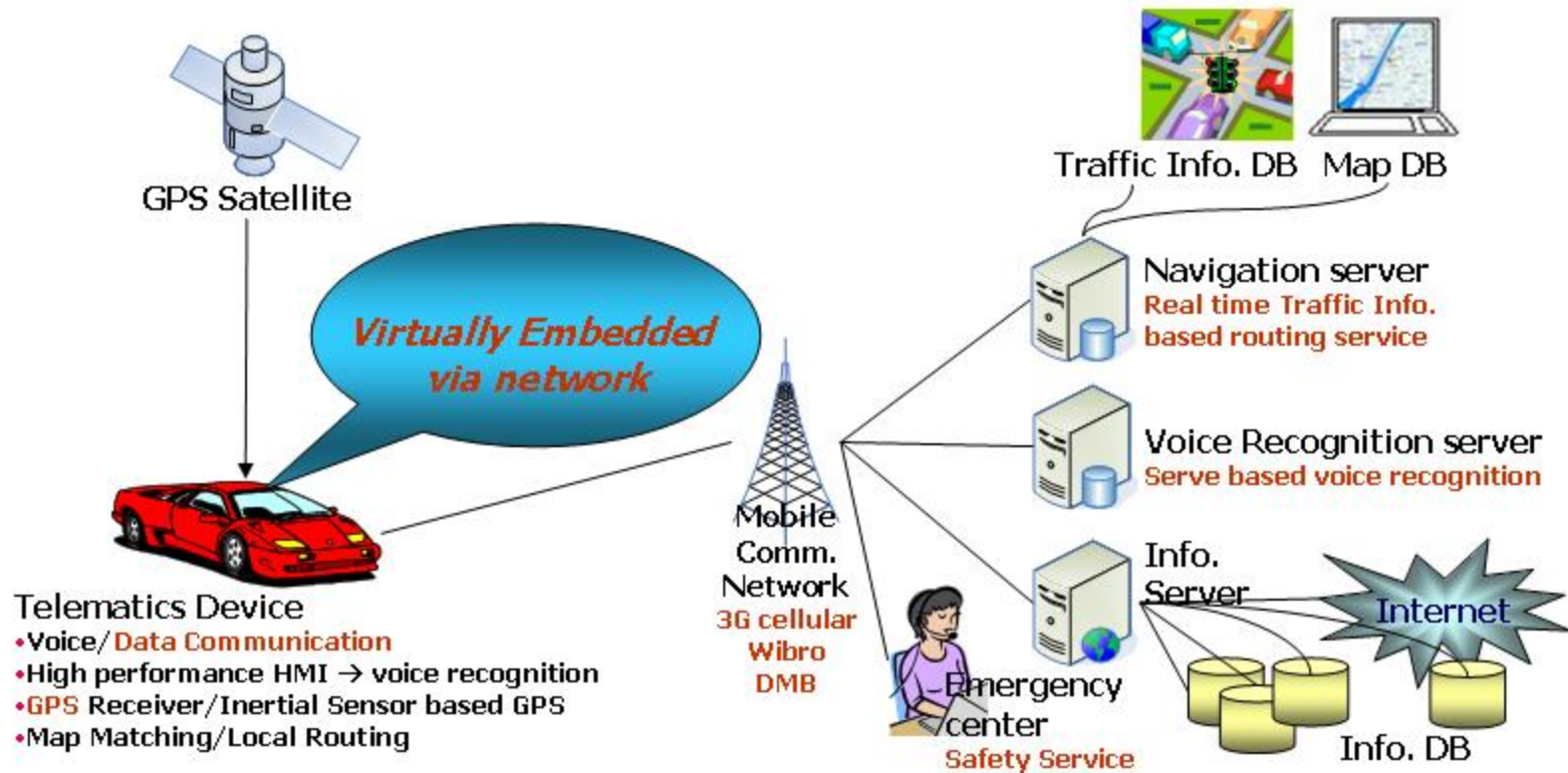
III Vision & Goal

IV Promotions

Creating Next Generation Growth Engine via interoperating IT Service-Infrastructure-Technology



Drivers or passengers would receive all kinds of service from big server outside of vehicle = **Virtually Embedded System**



Telecommunication + Informatics = Telematics

Background (Concept & Classification)



- Realizing Information, Safety, and Entertainment Service by using in-vehicle terminal, GPS, communication technology such as CDMA, Wireless LAN and etc..
- Telematics device
 - Mobile Information Platform
 - New IT Target Technology
 - Pursue In-Vehicle user Convenience



Telematics Service Players



- Create vehicle as a life/cultural space by using GPS and Wireless network
 - Driver → Safe driving, Rescue, Traffic/Route Guidance service and etc..
 - Passenger → Internet, Movie, Game, Multimedia and etc.. Provide Infotainment service

Contents Provider

Telematics Service Provider (TSP)

Mobile Operator

Users

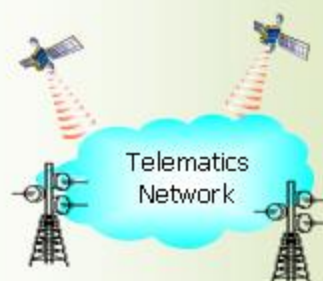
- Traffic Info.
- Geographic Info.
- Tour Info. (POI)
- News, Weather and etc



- Processing aggregated info.
- Providing real time information to users



- CDMA
- WLAN
- DSRC
- DMB
- HSDPA



- Using users' current location info. and provide Telematics service.



Wireless Broadband

- IX EV/DO, HSDPA, 3G, 4G
- WiBro
- DMB
- WLAN

Positioning/Location Information

- GPS, AGPS, Galileo
- TDOA, Hybrid GPS
- INS (Inertia Navigation)
- Seamless (Indoor)

Safety

- Driver distraction
- Collision, Accident Avoidance
- Safe User Interface
- Data protection

Current Status of TSP in Korea



Industry

Service

Business Strategy

AM

- Mobile operators such as SKT, KTF, LGT is leading this market.
- Expecting to create additional revenue

- SKT 'Nate Drive'
- KTF 'K-ways'
- LGT 'ez-Drive'
- Customizing pricing to user's taste
- Dash board on or off type with interoperable w/ LBS

- Based on 40 million mobile subscribers, need to make value added service
- Exploit new profit business model by proving variety kinds of contents with mobility

BM

- Automakers such as Hyundai-Kia, Ssangyong, Renault SamSung are leading this market.
- Safety, Vehicle Managt., Insurance and etc..
- Upgrading CRM service

- Hyundai-Kia: 'Mozen'
- Renault SamSung: 'INS-300/700'
- SsangYong: 'Everway'
- Providing total in-vehicle multimedia service by Connecting vehicle related Service such as oli, insurance and etc..

- Promoting brand differentiated business strategy by expanding vehicle connected CRM service

Role of each player and Profit Structure



	Mobile Operator	Automaker	TSP	Device Manufacture	Contents Provider
Role	<ul style="list-style-type: none"> • Wireless Network infra. • Service 	<ul style="list-style-type: none"> • Telematics System embedded Vehicle 	<ul style="list-style-type: none"> • Telematics Service 	<ul style="list-style-type: none"> • Manufacturing & Providing Device 	<ul style="list-style-type: none"> • Contents
Profit Source	<ul style="list-style-type: none"> • Access Fee • CP Commission 	<ul style="list-style-type: none"> • User Fee 	<ul style="list-style-type: none"> • Telematics service profit 	<ul style="list-style-type: none"> • Production Profit • Tech. usage fee 	<ul style="list-style-type: none"> • Contents Providing Profit.
Necessary Capability	<ul style="list-style-type: none"> • Marketing • Capital 	<ul style="list-style-type: none"> • Marketing 	<ul style="list-style-type: none"> • Marketing 	<ul style="list-style-type: none"> • Production Tech. • Product design tech. • Scale of Economy 	<ul style="list-style-type: none"> • Variation of Contents
Competition Superiority elements	<ul style="list-style-type: none"> • Price and Quality • Size of subscribers • Stability of wireless infra. 	<ul style="list-style-type: none"> • Brand Recognition • Secure Point of contact 	<ul style="list-style-type: none"> • Size of subscribers • Price & Quality 	<ul style="list-style-type: none"> • Price • Quality & Design • Brand Recognition 	<ul style="list-style-type: none"> • Prior occupation Market • Personalization customizing service

- ❑ Due to lack of cooperation between different industries, traffic information system operates inefficiently while standardization is imperfect. These shortcomings lead to expensive terminal and service charges, and eventually delay market activation.

❑ Market perspective

Chasm appears due to immature in early stage market

- Low service quality
- Expensive terminal and service charges
- Lack of cooperation and experience between different businesses.
- Failure to explore killer application and business model.

❑ Government prospective

Driving force parties lack cooperation and efficient supporting system in between

- Lack of cooperation system between relevant departments
- Insufficient development of original technology, and imperfect supply and demand system
- Lack of standards on Traffic and map/road information.
- Delay in preparing required laws and regulation

Obstacles in expanding Service

Vision

"Make vehicle as the 3rd life space"

Driver's Convenience, Enjoyable to passengers, Vehicle's safety

Goal

- Reach 5 million service users by exploiting the future driving core services.
 - Develop dynamic navigation service based operation support system
 - Realize the maximization of safety and vehicle's management function.
 - Create synergy effect by converging RFID/USN, DMB and etc..

Next Generation driving information service

- Real video based dynamic vehicle navigation service.
- Recognize the status of driver tech. initiation

Realize the real time Vehicle safety service

- Vehicle diagnosis, driving info.
- Safety based tech. development such as Vehicle to vehicle communication.

Enjoyable info. Service

- Seamless based service providing such as Internal & external continuous measurement and etc..

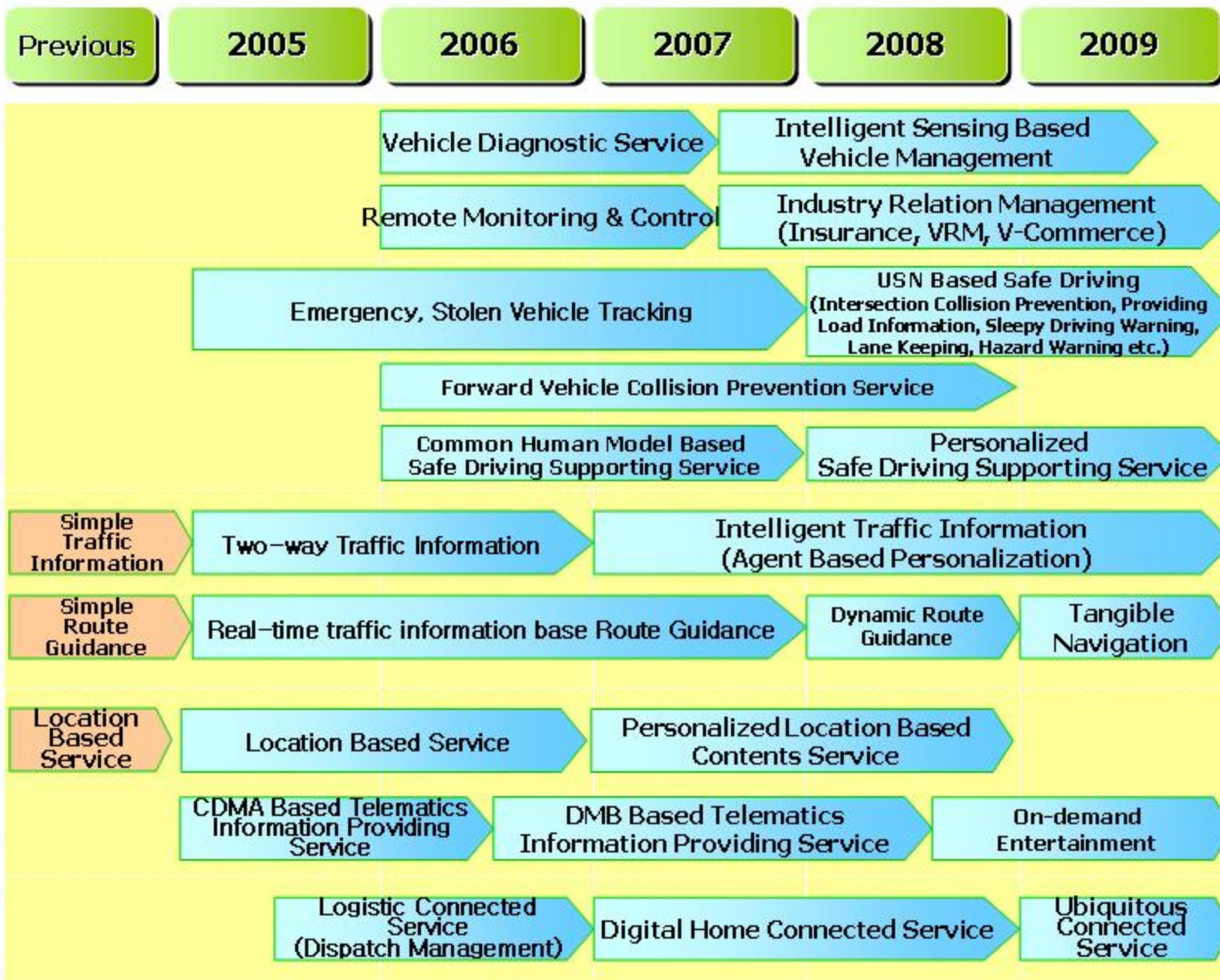
Realize the ubiquitous convergence

- Support Interoperability service with Logistics, Insurance and etc..
- Create new future convergence service such as DMB, RFID/USN, and etc..

Roadmap for Telematics Services



Telematics Main Services



Telematics Tech. Roadmap



2006

2007

2008

2009

2010

2012

Info-tainment

Real time processing of Large size contents tech.	Personalized info. Contents protection tech.	User's status recognized intelligent data procession tech.
Telematics open standard based contents trans coding tech.		
Map Air Update Tech.	High Speed updating system of large sized Contents.	Multiple channel (CDMA/DMB/WiBro) integrated contents collection/distribution tech.
Two ways broadcasting contents distribution tech.	DMB based contents aggregation tech.	
GPS(L1/L2C)/DR integrated chip	High Speed updating system of large sized Contents.	
	Internal positioning tech. (receiver, Algorithm)	Internal positioning integrated Tech.
	GNSS RF/BB integrated SoC	GNSS based internal/external consecutive positioning Tech.
Open LBS platform	internal/external consecutive positioning Tech based LBS platform	USN based GeoWeb Service Platform

Next Generation Driving

Actual feeling navigation tech	HUD based actual feeling navigation tech.	USN based self driving navigation Tech.
Traffic Info. integration/distribution tech.	Situation recognized dynamic route info. Transaction/sending tech	USN based road/traffic status/sending and integration tech.

Next Generation Safety

Driving safety sensor tech	Blackbox	Vehicle/driving info. Integration management system
Vehicle diagnosis system	Driver Recognized system	
Vehicle network tech	Vehicle Platform Control tech.	Integrated safety service platform tech.
Safety driving service API/PAN comm. Platform tech.	Different type PAN comm. Platform Tech.	
Vehicle comm. Tech.	GPS/sensor integrated vehicle comm. Tech.	High quality sensor integrated multi-home comm. Tech.
Multi-home & routing tech.	Sensor based multi home & routing tech.	

Convergence & Infra.

DSRC	Road comm. Tech. by using WAVE/USN	
Billing, Authentication Tech.	Vehicle Recognized and info. Protection tech.	
Vehicle locus info. & saving management tech.	Vehicle driving info (ECU/locus) Mining tech.	Connection with other industries telematics platform
ECU Connected info. acquisition tech.		
Connection with other industries service application protocol processing tech.		

Enjoyable Service

- Establish variety contents providing basement such as UCC and etc. by acquisition of Internal/external Seamless location based service support tech.
- Open LBS platform tech. acquisition, internal/external consecutive positioning tech. development

Convenient Service

- For personalized customization and intelligent telematics realization, convenient service of telematics tech. development is necessary
- Initiating tech. to have User customizing service such as real time dynamic traffic info., Actual feeling vehicle navigation, 5 senses Support Terminal interface and tec..

Safety Service

- Providing safe driving service
By using vehicle & driver info.
Development tech.
- Vehicle comm. Vehicle & customer relationship magt. System and etc..

Convergence Service

- Create synergy effect by developing convergence tech. among insurance, Logistics, and etc..
- RFID/USN, DMB and etc..
- Post office, delivery, insurance

From B2C Service Model

Due to the increasing of service fee burden to individual service user,
Lack of profit service model in telematics industry

Standard interoperability,
Insurance, Logistics interoperability, tech. development

Convergence pilot Business promotion
(Post office, Private sector and etc..)

Commercialization
(delivery, post office, insurance)

Extend to B2B Service Structure

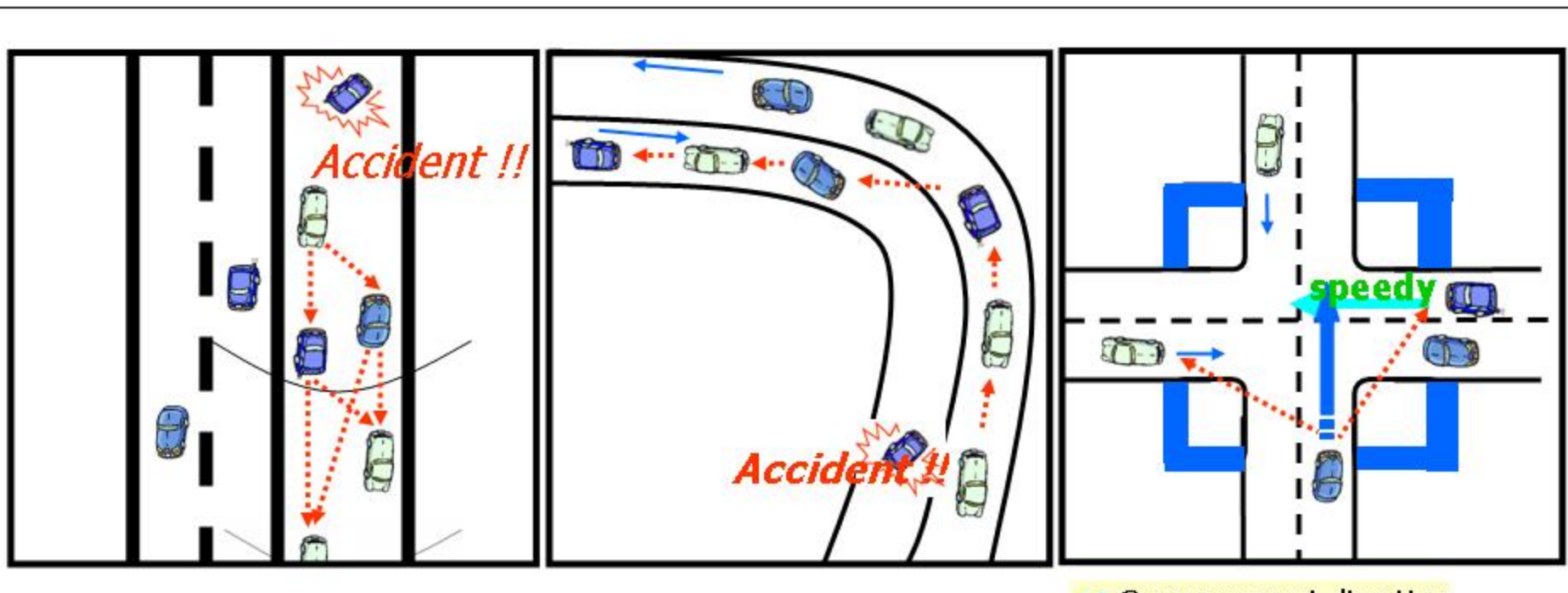
Scheming Telematics service industry revitalization via excavating and connecting to B2B and new business industries such as Insurance, logistics and etc..

An aerial photograph of a tropical island, likely a small atoll or island, surrounded by clear blue water. The island is covered in lush green vegetation and has a white sandy beach. The sky is bright blue with some light clouds. The text "Thank you." is overlaid in the center in a dark blue font.

Thank you.

● Ad Hoc Network for Collision Avoidance

- Network for vehicle with no help from the control center
- **Bilateral Inter-vehicle Communication**



- Car movement direction
- Packet movement direction