Safe, comfortable and eco-friendly, Smart Connected Society

- Big data
- Traffic Management Centre
- Data sharing between public and private
- Traffic Management for CASE
- Telematics Centre
- Energy Management for EV
- Navi-APP for EV (OBU, Smartphone, etc.)
- Wrong-way detection
- Safety Support with V2X technologies
- V2X system (Radio unit, Pedestrian detector)
Traffic management with probe vehicle data

Overview

- Machine Learning-based Traffic Information Prediction and Signal Control using Real Time Probe Data
- Traffic Assessment and adjustment of signal control plans on Statistical Data Analysis

Features

- Effective fusion of probe data and detectors data
- Complementation of missing data and prediction of traffic information on AI/Machine Learning

*1 RSU: Road Side Unit
*2 OBU: On-Board Unit
Traffic information for automated vehicle

Overview

Providing information that helps automated vehicle make path plans.

1. Collecting probe data and image data
2. Providing traffic information
3. Making a path plan

Features

In our cloud system, we have 3 main algorithms.

1. Making traffic jam information more reliable

2. Identifying traffic conditions from probe data

3. Recognition of driving lane using image data
Traffic Control System

Overview
• Large-scale traffic management system that ensures safe and smooth road traffic
• Cutting-edge central control algorithm manages about 8,000 intersections

Features
• Provide total system solutions from center system to terminal devices, and engineering services
• The systems have been employed in many facilities including the Traffic Control Center of Tokyo Metropolitan Police Department, which is one of the largest center in the world

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* ITS-WC 2014 Detroit
Energy management solutions for EV

Overview

Personal Info. (behavior, etc.)
Weather Info.
Power Plant Info.
Traffic Info.
Vehicle Info.

Features

EV Range Map
EV Charge Route Guidance

To solve the EV’s range anxiety by providing EV range map, recommended EV route and charging plan with better accuracy using AI technology. This solution is useful for ridesharing or fleet vehicle also.
AI-based Predictive EV Range Map

Overview

Our high precision range map tells you exactly how far you can get from the origin.

Features

- The range varies depending on the road gradient, road congestion, temperature and vehicle characteristics.

Comparison of prediction and actual consumption

- Ave. 88.4% Accuracy

Battery Level
- Over 2,500wh
- 2,000wh~2,500wh
- 1,500wh~2,000wh
- 1,000wh~1,500wh
- 500wh~1,000wh
- Under 500wh
Easy Charge On-the-Go Route Guidance

**Overview**

Our EV route guidance tells drivers everything they need to know to get to the destination without anxiety.

**Features**

- Our EV route guidance tells drivers everything they need to know to get to the destination without anxiety.

- All they need to do is to input where they want to go, and the software will calculate the most cost-efficient route with a recommended plan of where and when to quick-charge on the way.

- When you go up the hill, the battery % declines quickly, but when you go down the hill, it increases due to the regeneration.

- Builds trust with the EV drivers by showing the reason behind its calculation.
OVGIP (Open Vehicle-Grid Integrated Platform)

**Overview**
An integrated platform that connects energy infrastructure and EVs to provide EV smart charging, renewable energy management and other new services

**Features**
- Controlled charging through both telematics and EVSE (charging stations)
- OpenADR 2.0b for the utility connection
- Sumitomo is the IT solution developer and program co-coordinator of OVGIP
V2X Solutions

Overview

- Infrastructure equipment (Road Side Unit, Vehicle detector and Pedestrian detector)
- On-Board Unit
  * 760MHz band is assigned as ITS safety dedicated band in Japan

Applications

- V2I
  - Inform signal change
  - Support right turn
- V2V
  - Inform the car is approaching rapidly
  - Support blind corner accident

Features

- We have a lot of experiences in system requirement definition, FOT and implementation as a V2X systems developer.

*We are sure that we can be of assistance to cellular-V2X applications.
Radar for detecting Pedestrians and Vehicles

Overview

Pedestrians detector optimized for roadside modules. Operating for warning drivers with V2X radio in 5 prefectures in Japan.

Features

- Not affected by changes of weather and day/night
- Large cover area (40m x 9m) installed on existing polls and arms
- High accuracy

Technology

- Transmits 24GHz radio waves and analyze reflected waves
- Distinguished Antenna designing
- Dedicated algorithm for roadside modules

Operation in Japan
Radar for detecting Pedestrians and Vehicles

Overview
New developing radar detector for pedestrians and vehicles.
Adopting our antenna and logic technologies on our low cost platform.
(76GHz band)

Features
- Low power consumption
  (Solar and battery operation)
- Small size and cost effective
- Optimized cover area
- High accuracy

System

Example of application

Entrance assist system for highways

Radar detector

V2X communication

Vehicle detection

Warning Adjusting speed
Wrong-way Detection Device

Overview

・The device realizes less false detection and highly accurate wrong-way driving detection.

Features

・Real-time wrong-way detection and Traffic volume measurement in one device.
・Low false detection rate by pulse signal processing technology dealing with various traffic flows.
・Effectively utilize the pulse signal of existing two detection zone vehicle sensors.

*) This is an example of a configuration for centralized processing. A configuration that completes within each controller cabinet is also possible.