



Road Side Weather Information System (RWIS)

A Road Weather Information System (RWIS) is comprised of Environmental Sensor Stations (ESS) in the field, a communication system for data transfer, and central systems to collect field data from numerous ESS. These stations measure atmospheric, pavement and/or water level conditions. Central RWIS hardware and software are used to process observations from ESS to develop now casts or forecasts, and display or disseminate road weather information in a format that can be easily interpreted by a manager. RWIS data are used by road operators and maintainers to support decision making.

This component provides the surface transportation user the road conditions impacted by the weather conditions. The traveler learns about the existing conditions and warns him to take the safety measures. So this is the dynamic information system to keep the travelers informed about the latest road conditions.

Weather-activated warning systems are used to detect adverse weather conditions and provide warning and

information to drivers on how to alter their behaviour to improve road safety. Adverse weather conditions include fog, heavy rain and strong winds on the road. Systems should generally be installed where there is a history of weather-related incidents on existing roads, or where analysis indicates a higher safety risk on new roads. Road sections such as bridges that are more vulnerable to adverse weather conditions may particularly benefit from such systems.

Where adverse weather conditions are localized the detection and warning system is placed upstream of the affected area. This will allow sufficient time for Commuters to modify their behaviour ahead of the hazard. ITS is designed to ensure the desired level of reliability during adverse weather conditions. The design of weather-activated systems is considered if VMS is installed (or planned) for the motorway for other purposes and whether it can be used for multiple functions to minimize the need for additional roadside devices.

Automatic weather station designed for meteorological data acquisition and transmission to data center.

RWIS Features

- Modular integration
- Harsh environment design (IP66, Ik20, 25°C/+60°C)
- Integrated timing synchronization (GPS, RTC or Data COM)
- Local or distance maintenance access
- Low power consumption and economic function mode to preserve sensible data acquisition
- Data Transmission every minute
- Centralized platform able to monitor several hundreds of stations.

RWIS Components

- RWIS Central Management System
- 4G Mobile Internet
- Solar System with Dry Batteries for Power Supply

RWIS Benefits

- Real-time road weather information for Travelers
- Savings road maintenance costs
- Reduced environmental pollution
- Safer roads
 - Fog Prediction
- Weather Forecasting
 - Trip Planning

RWIS Product Hardware

Automatic Weather Station	Mercury Box: 8 sensor input Communication module GPRS
Temperature & Humidity	Range: 0 to 100%, Accuracy: $\pm 2\%$ (0-90%) and $\pm 3\%$ (90-100%), Resolution: 1%, Range: -40 to +80°C, Accuracy: $\pm 0.2^\circ\text{C}$, Resolution: 0.1°C
Rain Gauge	Catchment Area: 400 cm ² , Resolution: 0.5 mm
Wind	Speed Range: 0 to 60 m/s, Accuracy: $\pm 2\%$ at 12m/s, Resolution: 0.01m/s, Direction Range: 0 to 359°, Accuracy: $\pm 2^\circ$ at 12m/s, Resolution: 0.01m/s
Visibility	Range: 10m to 7,500m, Measurement Error: 10.0% at 7,500m
Fixing Kit of Sensors	Mounting Arm for Sensor
Mast	Mast $\varnothing 90\text{mm}$, Height 3m

Road Weather Management 2x Each 25 KM



Safety Systems



Atmospheric Conditions

Road weather management activities include road weather information systems (RWIS), winter maintenance technologies, and coordination of operations within and between state DOTs. ITS applications assist with the monitoring and forecasting of roadway and atmospheric conditions, dissemination of weather-related information to travelers, weather-related traffic control measures such as variable speed limits, and both fixed and mobile winter maintenance activities.

