SLOVENSKI STANDARD
SIST EN 15518-1:2011

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Oprema za zimska vzdrževalna dela - Cestni vremensko-informacijski sistemi - 1. del: Splošne definicije in oprema

Winter maintenance equipment - Road weather information systems - Part 1: Global definitions and components

Winterdienstausrüstung - Straßenzustands- und Wetterinformationssysteme - Teil 1: Allgemeine Definitionen und Komponenten

Matériels de viabilité hivernale - Systèmes d'information météorologique routière - Partie 1: Définitions globales et composants

Ta slovenski standard je istoveten z: **EN 15518-1:2011**

ICS:

07.060	Geologija. Meteorologija. Hidrologija	Geology. Meteorology. Hydrology
13.030.40	Naprave in oprema za odstranjevanje in obdelavo odpadkov	Installations and equipment for waste disposal and treatment
35.240.99	Uporabniške rešitve IT na drugih področjih	IT applications in other fields

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English Version

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Foreword

This document (EN 15518-1:2011) has been prepared by Technical Committee CEN/TC 337 “Winter maintenance and road service area maintenance equipment”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2011, and conflicting national standards shall be withdrawn at the latest by August 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

EN 15518, *Winter maintenance equipment — Road weather information systems*, comprises of the following parts:

— *Part 1: Global definitions and components*

— *Part 2: Road weather — Recommended observation and forecast*

— *Part 3: Requirements on measured values of stationary equipments*

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Introduction

Road Weather Information Systems (RWIS) are complex structures used for road maintenance decision support, which feature as a rule the following components: meteorological sensors and instruments, transmission technology, computer systems for processing, representation and storing of information, road weather forecasts and alarms, in relation to traffic control and traffic information systems and more.

With a set terminology for the components and the meteorological expressions, an attempt is made to counteract a diversity of terms and designations for identical phenomena.

1 Scope

This European Standard defines the "Road Weather Information Systems" (RWIS) concept for public roads and traffic surfaces.

This standard applies to the acquisition of data on weather-related road and environment conditions as well as their forecast.

This information is typically used for road maintenance and can serve other systems like traffic management, road users information, data models, etc.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Not applicable.

3 Global definition and components

3.1 Description of concept

A Road Weather Information System (RWIS) can be defined as a combination of technologies that uses historic and current climatological data to develop road and weather information (for example, nowcasts and forecasts) to aid in roadway-related decision making.

The three main elements of RWIS are:

— environmental sensor tools (fixed or mobile) to collect data;

— models and other advanced processing systems to develop forecasts and tailor the information into an easily understood format;

— dissemination platforms on which to display the tailored information.

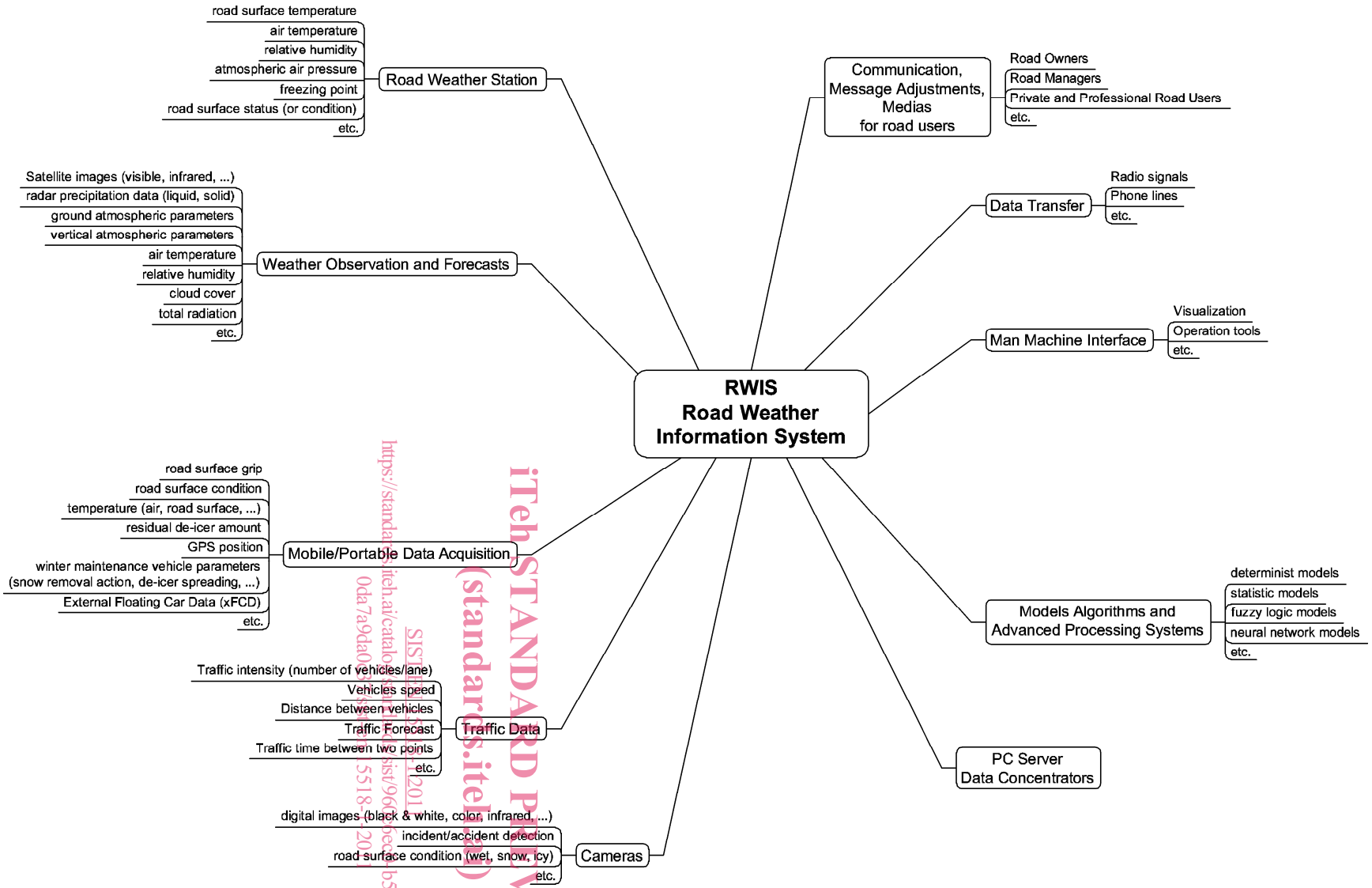

Figure 1 — Components of a RWIS system

3.2 Description of components

3.2.1 Road weather station

Road weather stations are the components of RWIS which provide the environmental data. Many types of data can be collected, the most common being (non exhaustive list):

— weather − air temperature, amount and type of precipitation, visibility, dew point, relative humidity, and wind speed and direction, and cloud cover;

— road condition − pavement temperature, subsurface temperature, surface condition (dry, wet or frozen), amount of de-icing chemical on the roadway, and freezing point of the road surface.

These data are collected by sensors placed at the roadside or in the roadway itself. Remote processing units (RPUs) placed along the roadway contain some or all of the road and weather sensors. In some cases, the pavement sensors are located apart from the RPU, with several pavement sensors capable of being linked to one RPU. However, these RPUs are usually connected to a central server for further data processing.

3.2.2 Weather observation and forecast

The raw data are used directly or in coordination with a service provider to prepare nowcasts or forecasts. Both can be used to predict site-specific weather and pavement conditions and to support maintenance operations.

3.2.3 Mobile or portable data acquisition systems

Mobile data acquisition systems monitor atmospheric parameters and road conditions at the time and position of the mobile.

Portable data acquisition systems monitor atmospheric parameters and road conditions at a given time and position.

These data are complementary to stationary road weather stations.

3.2.4 Traffic data

The traffic volume, typology, characteristics could be taken into account for the analysis of RWIS data and models. On the other hand, the analysis of RWIS raw or processed data could be included in road management tools.

3.2.5 Cameras

The analysis of raw or processed images, depending on the spectra, could be included in road management tools, such as monitoring road surface condition (snow, de-icing application control, etc.), or traffic volume.

3.2.6 PC, servers, data concentrators

Local and/or central processing units ensure collection, storage, processing and distribution of the data.

Several communication mechanisms can be used for information collection and distribution, like Internet, Intranet, satellite, dial-up lines, etc.

3.2.7 Models, algorithms

The models and algorithms aggregate and process data from different sources, according to the specifications of the final user (road managers, forecasters, and road users).