

EN15518

A European Standard for Road Weather Information Systems (RWIS)

Paper # 0053

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Boschung Mecatronic SA

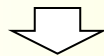
European Committee for
Standardization (CEN)



Technical Committees



Work Groups



Project Work Group

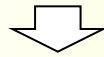
Non profit organization for the
standardization of goods and services
(groups 32 NSB)

Manage the standardization activities
within an area of expertise

Dedicated bodies which deliver
proposed standards to the TC for
approval

Group of experts working on a
specific subject

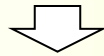
European Committee for
Standardization(CEN)



Technical Comitee
TC337



Work Group
WG1



Project Work Group
PWG5

Winter maintenance and road service
area maintenance equipment
(excluding machinery)

Winter maintenance equipment

Road Weather Information Systems

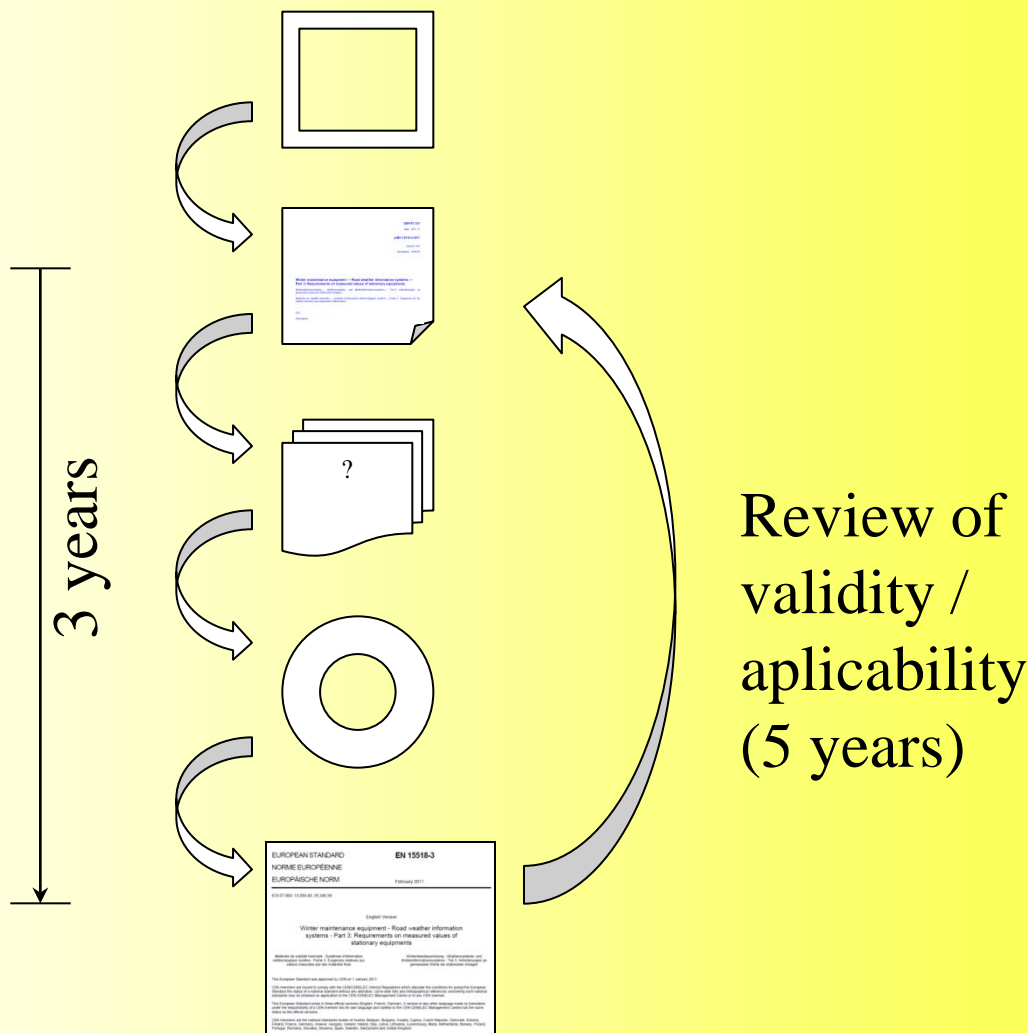
Generation of a Work Item

Drafting of the Standard

CEN Enquiry

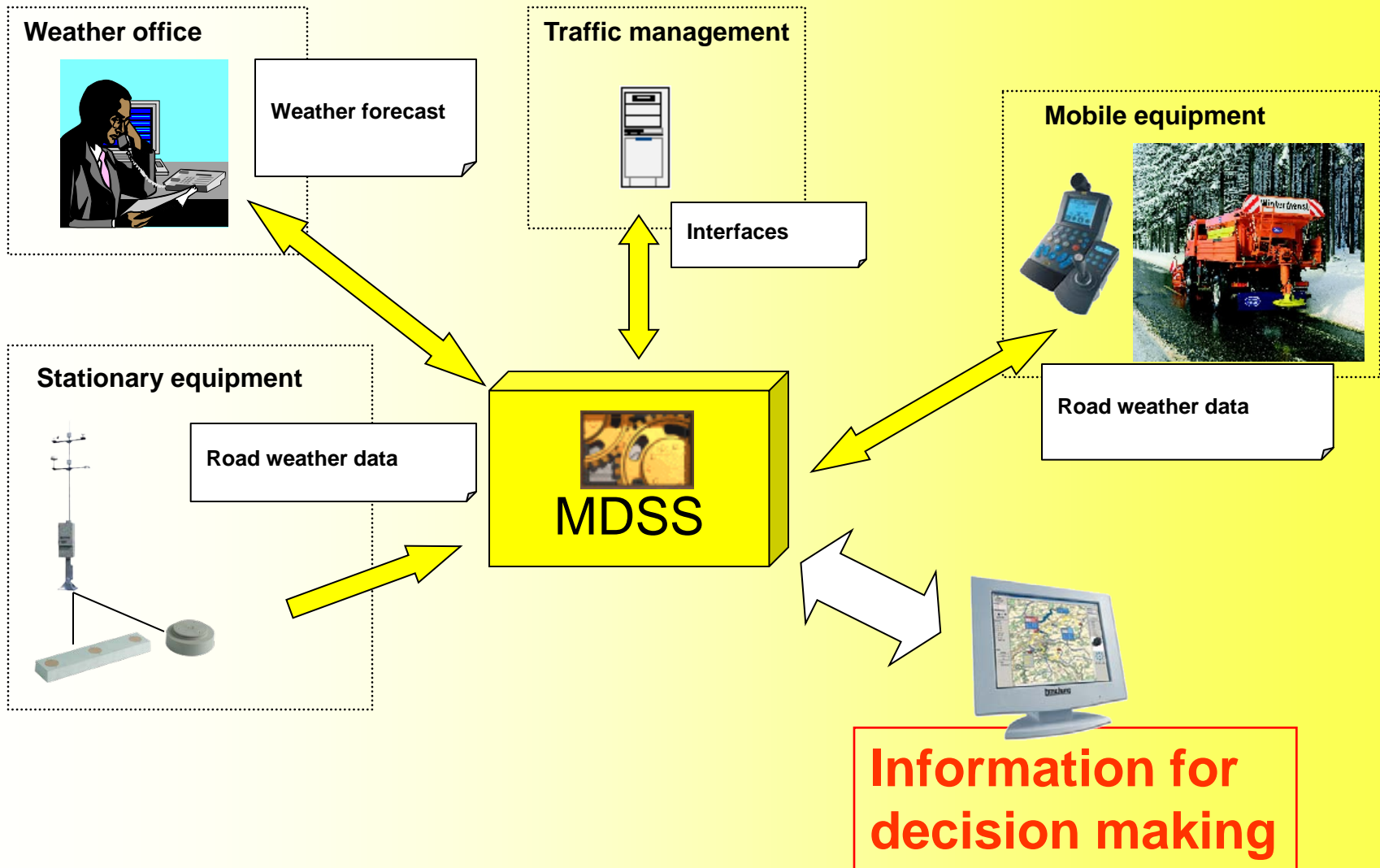
Formal Vote

Implementation as national standard



Review of validity / aplicability (5 years)

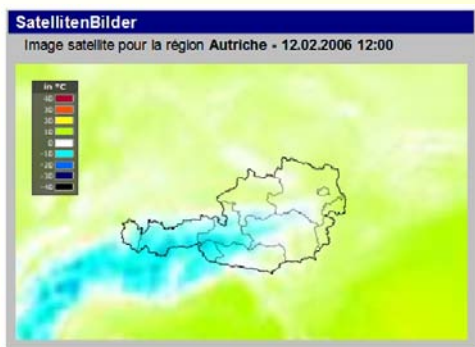
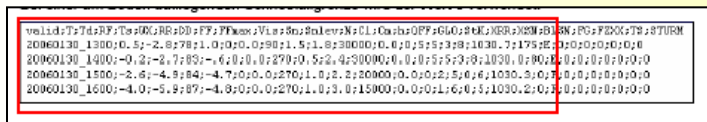
- Provide uniform requirements on the various components (independantly from the manufacturer)
 - ➔ The end user knows exactly what he is receiving from the system
- Define official test procedures
 - ➔ The performance of the components are proven (independantly from the manufacturer)





**Status EN15518-1:
published (2011)**

Only recommendations !



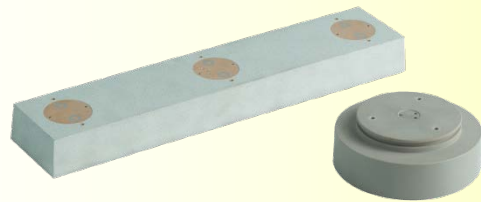
- Text bulletins (approx. 3 to 7 days)
- Numerical forecast (min. 24 hours)
- Radar and satellite pictures
- Weather alarms



**Status EN15518-2:
published (2011)**



- Definition of terms and concepts
- Determination of basic and optional parameters for a standard road weather station
- Accuracy requirements

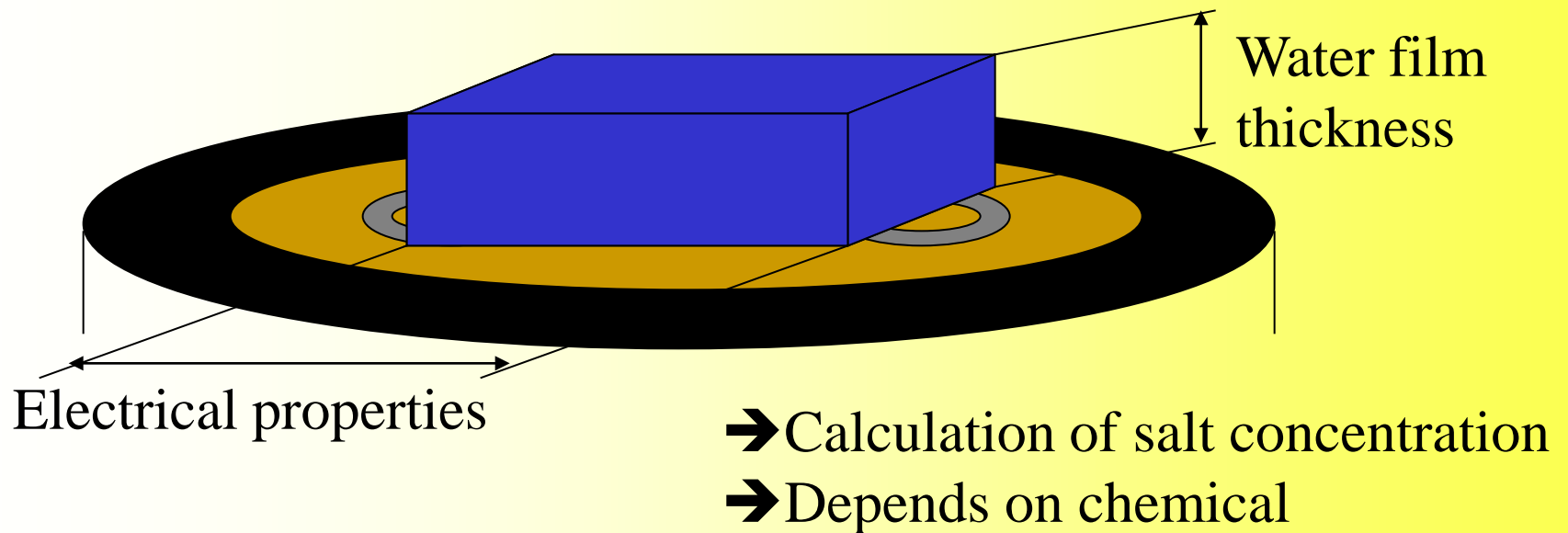


Characterization of pavement status

- **Dry**
- **Moist** (from 0.01mm to 0.2mm of liquid)
- **Wet** (from 0.2 mm to 2mm of liquid)
- **Streaming water** (>2mm of liquid)
- **Slippery** (presence of partly or wholly solidified aqueous solution over the sensor)

Freezing point temp.: two classes of accuracy

1. Calculated



Accuracy :

0°C to -2.5°C : $\pm 0.5^{\circ}\text{C}$

-2.5°C to -30°C : $\pm 20\%$

Freezing point temp.: two classes of accuracy

2. Measured



- **Cooling** of a part of the sensor's surface
- Exact **measurement** of the freezing point temperature
- **Independant** of chemical

Accuracy :

0°C to -15°C : ± 0.5°C

-15°C to -30°C : ±1.5°C



**Status EN15518-3:
published (2011)**

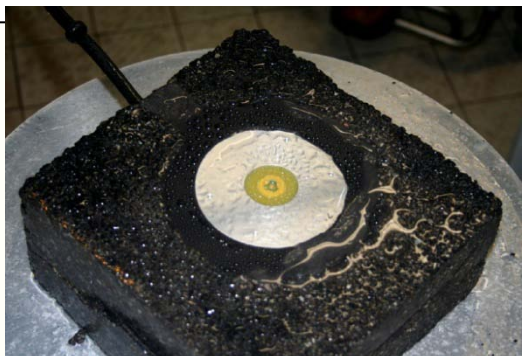
- Shall be published as a Technical Specification (→ Gather experience before finalization as a standard)
- European laboratories can already provide certification reports

The **ARCTIS** active pavement sensor of Boschung is to date the only certified sensor in the class « **measured freezing point temperature** »

bast Prüferbericht 50/07/09

Bericht Nr. 50/07/09
über die
Prüfung einer Bodensonde für die Gefrieretemperatur

Sondenbezeichnung: **ARCTIS**
Seriennummer: 04142



Der Sensor erfüllt damit die Genauigkeitsanforderungen des Entwurfs der DIN EN 15518-3 für den Parameter „Gefrieretemperatur“.

Bergisch Gladbach, 17.5.2010



Dipl.-Ing. Lehmann
Regierungsrat z. A.
Leiter des Referates
„Verkehrstechnik, Straßenbetrieb“

Bergisch Gladbach, 17.5.10



Dipl.-Ing. Badelt
Oberregierungsrat
Prüfungsleiter

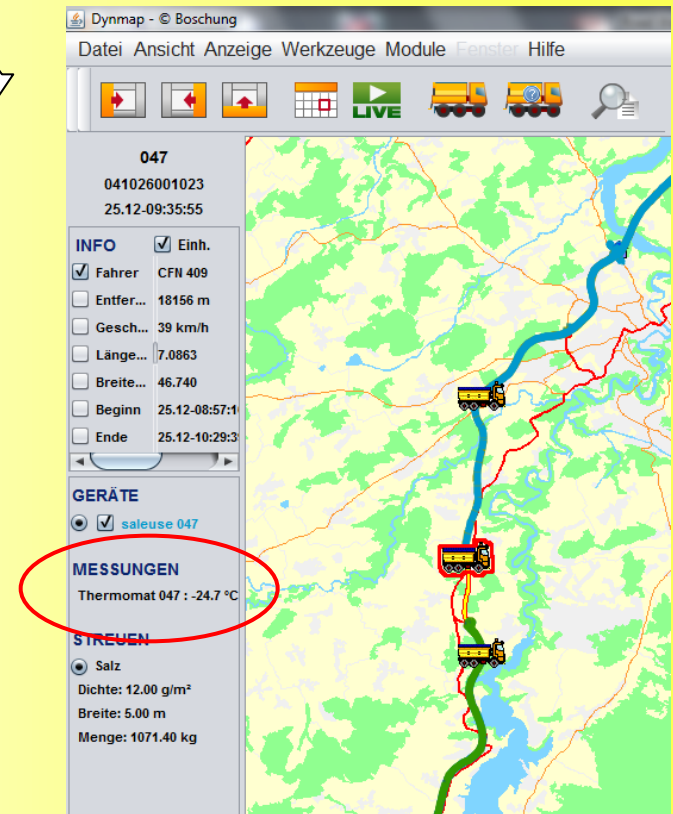


**Status EN15518-4:
under formal vote**

Requirements on road weather measurements performed from mobile platforms



Example : the **Thermomat** from Küpper-Weisser (Pavement temperature measurement)





**Statut EN15518-5:
under work**

- EN15518-6 : Test procedures for mobile equipments
- EN15518-7 : Requirements on measured values of portable equipments
- EN15518-8 : Test methods for portable equipments
- EN15518-9 : Description and requirement on themal mapping
- EN15518-10 : Data interface with other systems



Complete Road Weather Information System



The screenshot shows the Dynmap software interface. The main map displays the A12 highway near Fribourg, Switzerland, with a truck icon and a weather station icon. The interface includes several panels:

- Top Left:** "A12 - Fribourg" with coordinates 41.0 2.89. A "Bulletin" section for 23.11-16:20 shows current conditions: LT: 2.5 °C, FBT: 1.0 °C, RF: 91.0 %, WG: 2.2 km, WGS: 4.5 km, WR: NO -, SNeu: --- cm, LD: 1028 ht, TP: 1.3 °C, SIW: 0 m.
- Bottom Left:** "Forecast" section for 23.11-17:00 with parameters: F_CODE: 000004, B_CODE: 000004, MDSS_CO: 000003, F_FBT_MI: 1.0 °C, B_FBT_MI: 1.0.
- Bottom Left (Legend):** DANGER LEVEL 3 (red), DANGER LEVEL 2 (orange), DANGER LEVEL 1 (yellow), NO DANGER (green), NO INFO (black).
- Bottom Center:** "LIVE" status and a time slider for 23.11.2011-16:24, with a "Météo" forecast bar showing conditions for +3h, +12h, +24h, +36h, +48h, and +60h.
- Bottom Right:** "boschung" logo.
- Right Panel:** "LIVE" status, "ANSICHTEN" (Swiss_forecast), "COUCHE STATIQUE" (Boundaries, Water, Forest, Buildup, Meteorological, Other_roads, Mainroads), and "COUCHE DYNAMIQUE" (Stations AMS, Véhicule, Direction, Route forecast, Niveau de danger, TL, TR).

Mobile equipments

Stationary equipments

Weather forecast



Complete Road Weather Information System



The screenshot shows the Dynmap software interface. The main map displays the A12 road with a truck icon and a weather station icon. The left panel shows a weather bulletin for Fribourg with data: LT: 2.5 °C, FBT: 1.0 °C, RF: 91.0 %, WG: 2.2 km, WGS: 4.5 km, WR: NO -, SNeu: --- cm, LD: 1028 ht, TP: 1.3 °C, SIW: 0 m. Below this is a forecast section with parameters like F_CODE, B_CODE, MDSS_CO, F_FBT_MI, and B_FBT_MI. A danger level legend is also present. The right panel has a 'LIVE' indicator and two layers: 'ANSICHTEN' (Swiss_forecast) and 'COUCHE STATIQUE' (Boundaries, Water, Forest, Buildup, Meteorological, Other_roads, Mainroads). Below that is 'COUCHE DYNAMIQUE' (Stations AMS, Véhicule, Direction, Route forecast, Niveau de danger, TL, TR). At the bottom, there is a 'LIVE' status bar with a timeline from 13:24 to 19:24 and a forecast bar for +3h, +12h, +24h, +36h, +48h, and +60h. The forecast bar shows color-coded indicators for different weather conditions. The bottom right corner features the 'boschung' logo and the time 16:25.

Mobile equipments

Stationary equipments

Weather forecast

Thank you for your attention !