

# Winter Maintenance Management System goes mobile

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Requirement of road users for a safe and usable road network at all time

Increase of traffic volumes

Need of cost savings



Road Safety

Economy

Environment



Online Communication-  
and Management-  
Technology

modern & efficient  
Winter Service  
Operations



## Weather Service



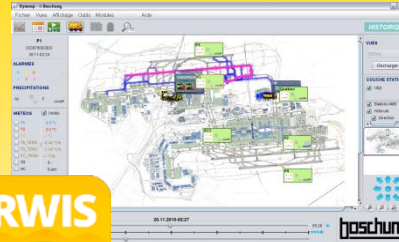
Weather Data and Forecast

## RWIS stations



Weather and Road Surface Data

## Management System

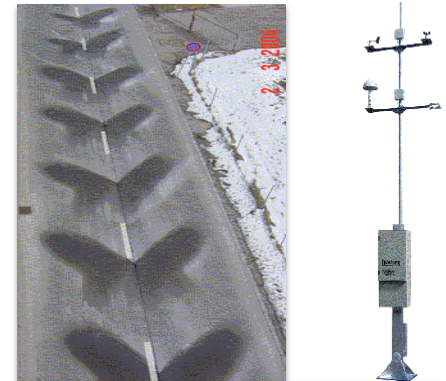


## Maintenance Vehicles



Vehicle Operations Data; AVL

## FAST- Systems



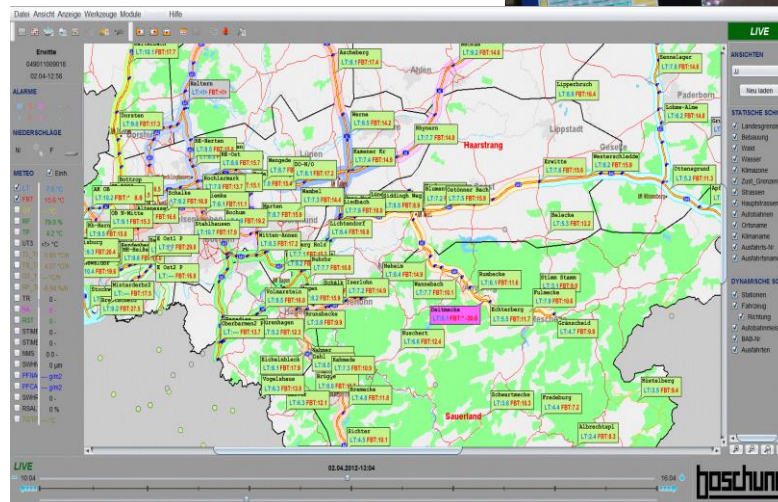
Weather and Road Surface Data

## Traffic Management Systems



Weather and Road Surface Data

# Visualisation and Management in Winter Service Centre:



041031702004  
02.02-05:50:55



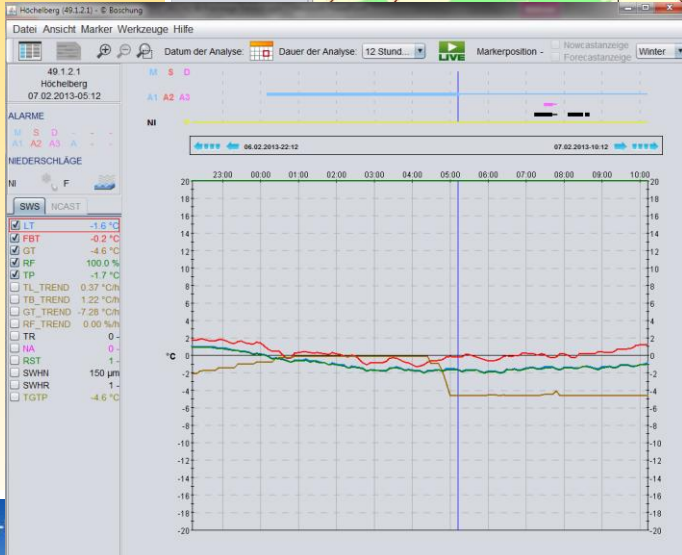
- INFO  Einh.  
 Fahrer Fahrer  
 Entf... 83596 m  
 Gesc... 27 km/h  
 Läng... 7.3526  
 Breit... 46.951  
 Begi... 02.02-02:5  
 Ende 02.02-08:4

- GERÄTE  
 Pflug  
 Streuer  
 Räumen und ...

STREUEN  
 Salz  
 Dichte: 12.00 g/m<sup>3</sup>  
 Breite: 3.50 m  
 Menge: 2157.74 kg



02.02-05:32:49  
 FP  
 ST  
 Salz Dichte : 14.00 g/m<sup>3</sup>  
 Salz Breite : 5.00 m  
 Salz Menge : 757.74 kg



### Kehmaschine - Einsatzbericht



Fahrer: Duro Dorian Fahrzeug: Intern 645  
 Kennzeichen: BE8401 Datum: 13.06.2013

Geräte: Kehr Intern 645 Einsatzzeit: 0:38 Std  
 Einsatzdistanz: 1.8 Km/Std

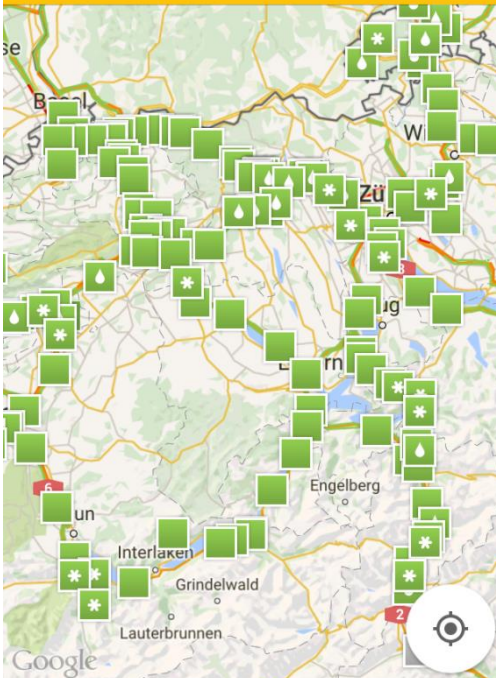
Fahrzeug Einsatzbeginn: 13.06.2013 9:24 Uhr Fahrzeugzeit: 1:00 Std  
 Einsatzende: 13.06.2013 10:25 Uhr Fahrzeugdistanz: 4.0 Km/Std

Uhrzeit	Std.	Straße	Kilometer		Zeit		Geschwindigkeit Km/Std
			Fahrzeug	Kehr Intern 645	Ohne Gerät	Kehr Intern 645	
9:24	0:01	Effingerstrasse	0.203	0.000	0:01:08	0:00:00	10.7
9:25	0:00	Schlosslistrasse	0.247	0.000	0:00:24	0:00:00	37.1
9:26	0:00	Jennerweg	0.066	0.000	0:00:06	0:00:00	39.6
9:26	0:00	Freiburgstrasse	0.096	0.000	0:00:10	0:00:00	34.6
9:26	0:00	Effingerstrasse	0.082	0.000	0:00:14	0:00:00	21.1
9:26	0:00	Nebenstrasse	0.127	0.000	0:00:22	0:00:00	20.8
9:27	0:00	Freiburgstrasse	0.047	0.000	0:00:08	0:00:00	21.2
9:27	0:00	Friedbühstrasse	0.112	0.000	0:00:20	0:00:00	20.2
9:27	0:06	Weyermannsstrasse	0.385	0.112	0:01:35	0:04:37	3.7
9:33	0:03	Bahnstrasse	0.140	0.140	0:00:00	0:03:46	2.2
9:37	0:45	Weyermannsstrasse	2.112	1.542	0:15:50	0:29:56	2.8
10:23	0:01	Friedbühstrasse	0.342	0.000	0:01:47	0:00:00	11.5



SIM fehlt 07:42

10.02.2016 07:41



Filter Favoriten Data

SIM fehlt 07:46

### Station

Details Charts

LETZTE MESSUNG 10.02.2016 07:36

## Station

1 2 3 M D S

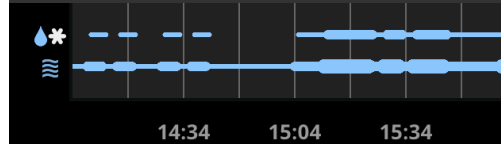
Lufttemperatur	1.0 °C
Fahrbahntemperatur	0.4 °C
Gefrierpunkttemperatur	-0.5 °C
Relative Luftfeuchtigkeit	92.6 %
Taupunkttemperatur	-0.0 °C
Niederschlagsklasse	2

SIM fehlt 16:04

### Station

Details Charts

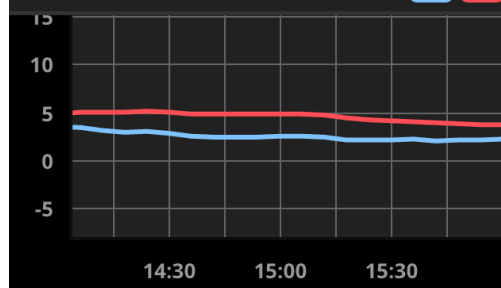
#### NIEDERSCHLAG



14:34 15:04 15:34


#### TEMPERATUR °C

LT FBT



14:30 15:00 15:30

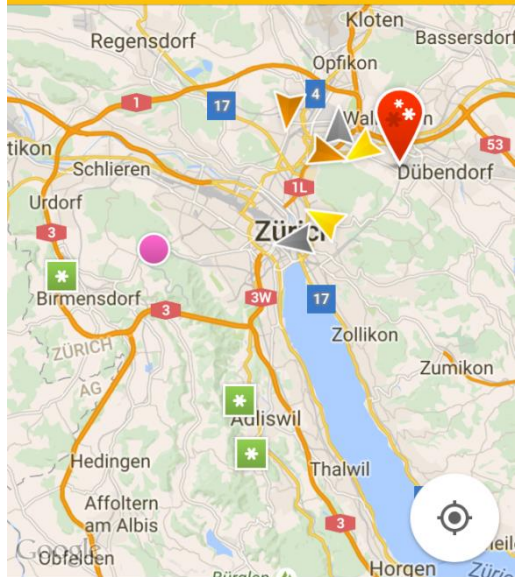
#### LUFTFEUCHTIGKEIT %



100 75



SIM fehlt 07:46 10.02.2016 07:43

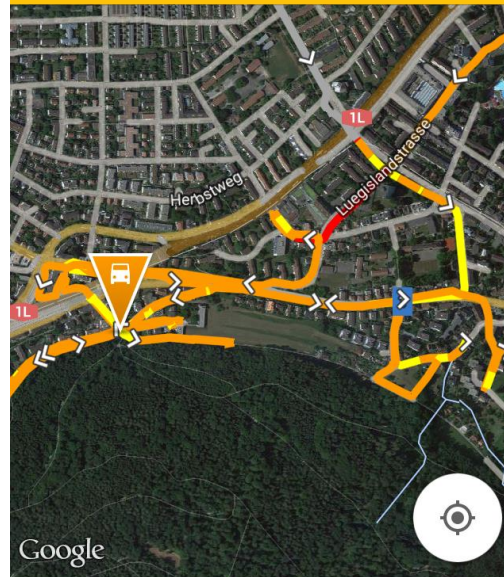


**Station** 1 2 3 4 5 6

LT 1.0 °C | FBT 0.4 °C | GT -0.5 °C

Filter Favoriten Data

SIM fehlt 07:52 10.02.2016 07:49



**Fahrzeug** STREUT UND RÄUMT

Gemessen um: 07:34  
0 km/h | 13,1 km

Filter Favoriten Data

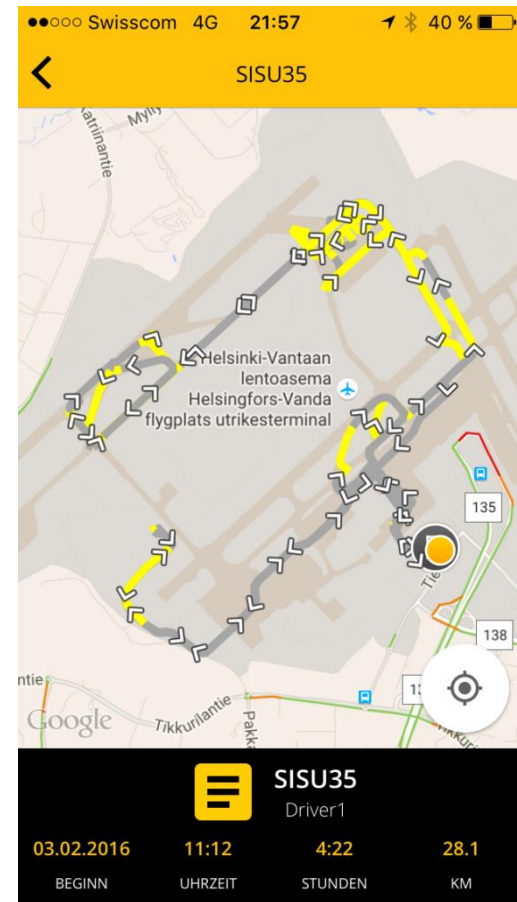
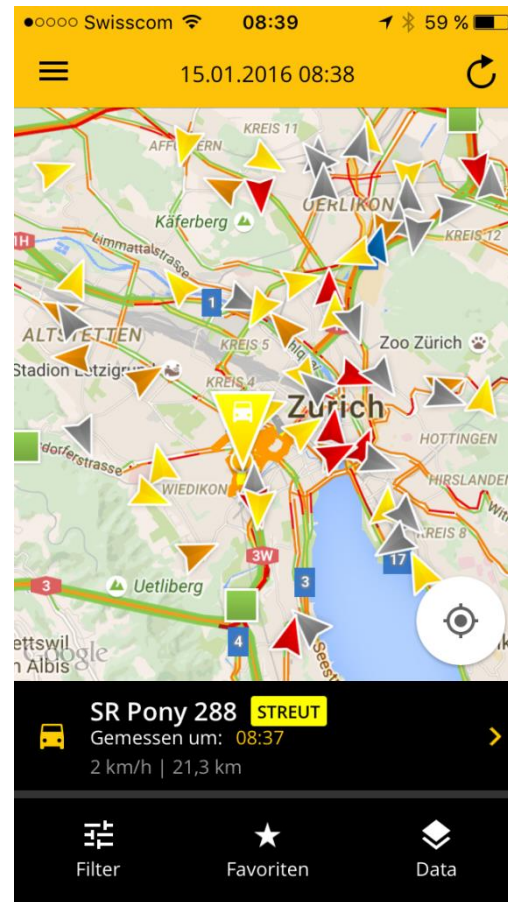
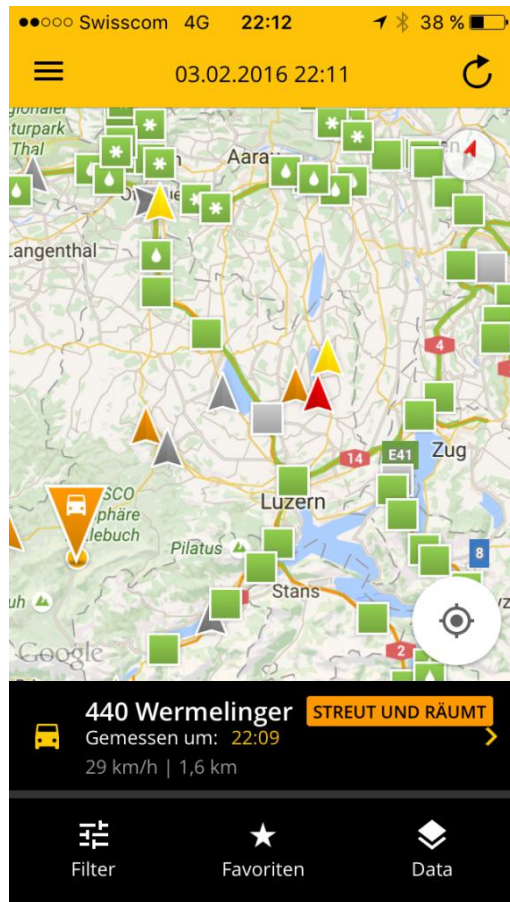
SIM fehlt 07:54 Fahrzeuge

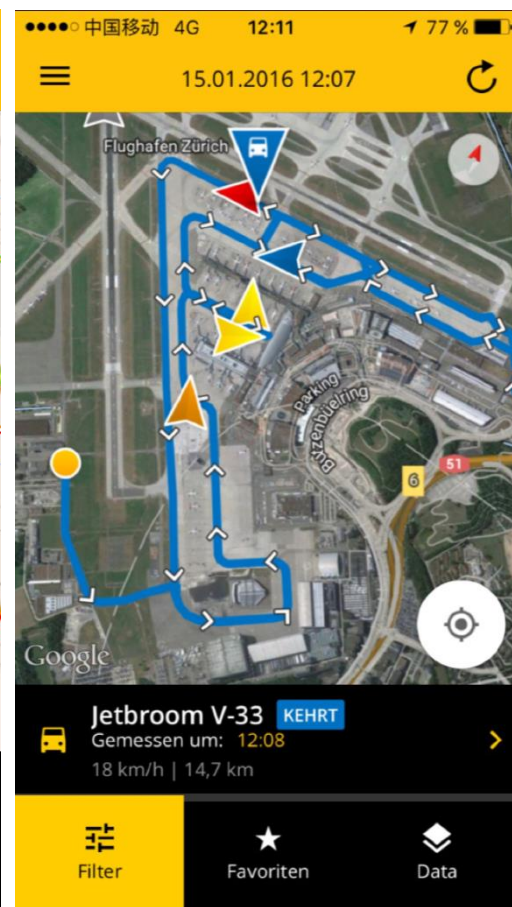
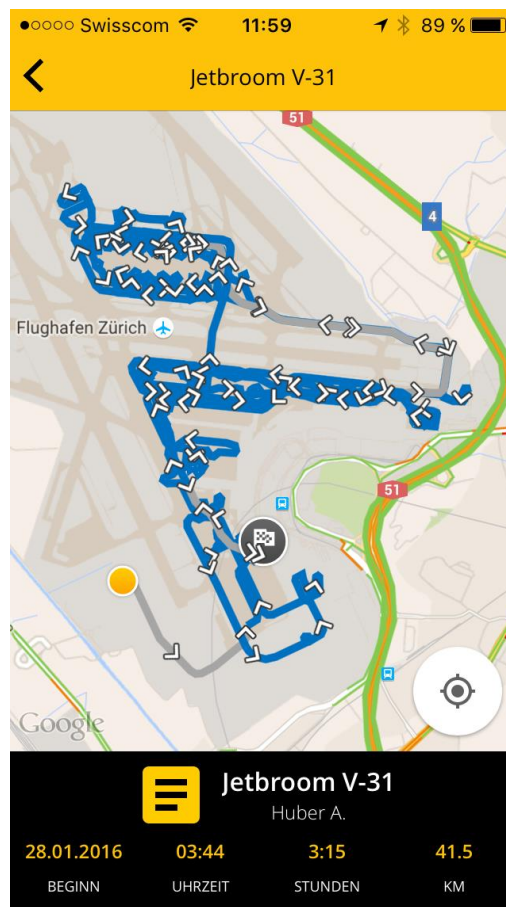
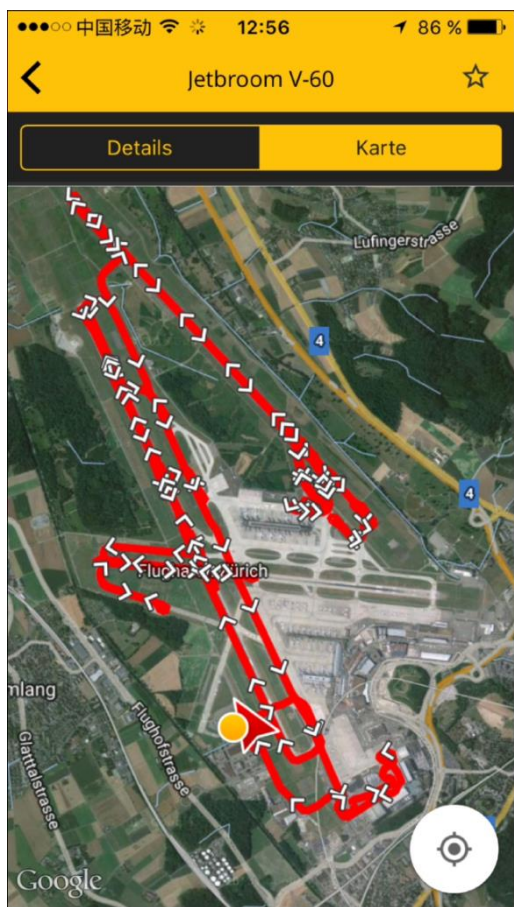
Suchen

**Center**

- Fahrzeug** STREUT  
Bodentemp\_3503 -0,4 °C | 10 km/h | 28,5 km
- Fahrzeug** STREUT  
29 km/h | 14,6 km
- Fahrzeug** STREUT UND RÄUMT  
0 km/h | 13,1 km
- Fahrzeug** LEERFAHRT  
5 km/h | 0,5 km
- Fahrzeug** STREUT UND RÄUMT

Filter Favoriten Sortierung





**Benefit:**

Perfect overview of weather conditions and operation status of the service vehicles (i.e. winter service operation) in a quick and easy way wherever you are !  
Possibility to manage operations dynamically.





**But the RWIS –App will show it!**

**Thank you for your attention!**



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