



**DESTIA**  
TOIMIVAMPI MAAILMA

# DESTIA

Kelikeskuspalvelu osana talvihoitoa

# Employee portrait



- Seppo Kaarto works as a Manager at Destia's Winter Maintenance Management Centre services.
- Seppo has extensive experience with winter maintenance management, acquired over 36 challenging winter seasons
- Seppo has been strongly involved in developing ICT systems to support maintenance.

# Janne Miettinen

- **+15 years experience at FMI**
- **Formerly worked as an aviation meteorologist**
- **7 years of experience of road weather services**
- **Also working in R&D projects developping new services for road maintenance and road users**

**Account Manager**  
**Customer Services**  
**Finnish Meteorological Institute**



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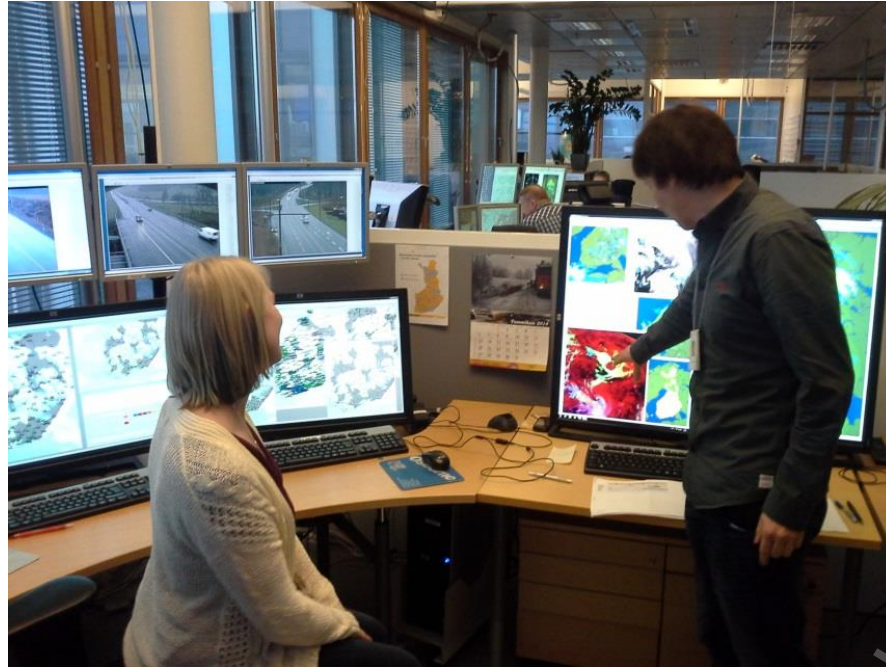




# What is the Winter Maintenance Management Centre ?

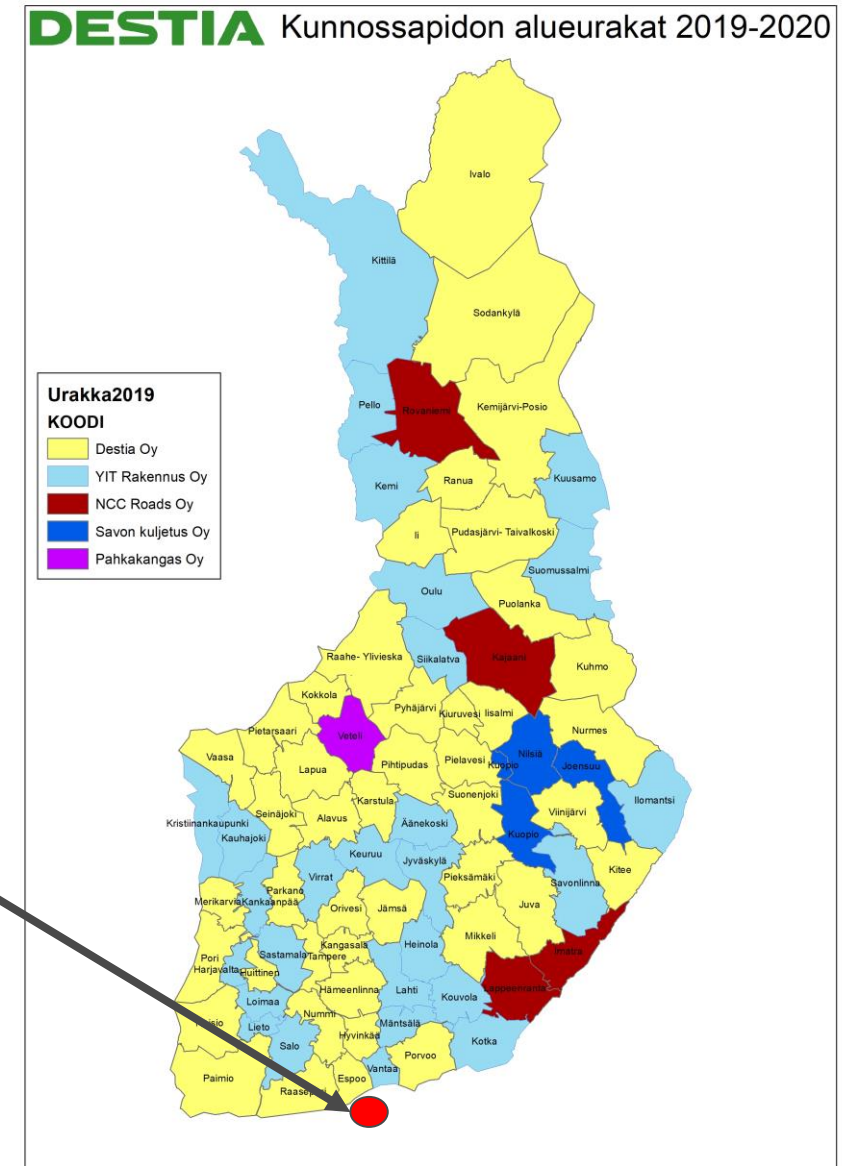
- Winter Maintenance Management Centre assists in controlling winter road maintenance
- Provides winter maintenance management centre services to Destia's maintenance contractors, as well as to cities and other businesses
- Monitors 24h weather changes
- Alerts to take actions and controls the maintenance of main roads according to the agreed guiding model

## Destia Winter Maintenance Management Centre



Destia winter maintenance management Centre at the Finnish Meteorological Institute in Helsinki

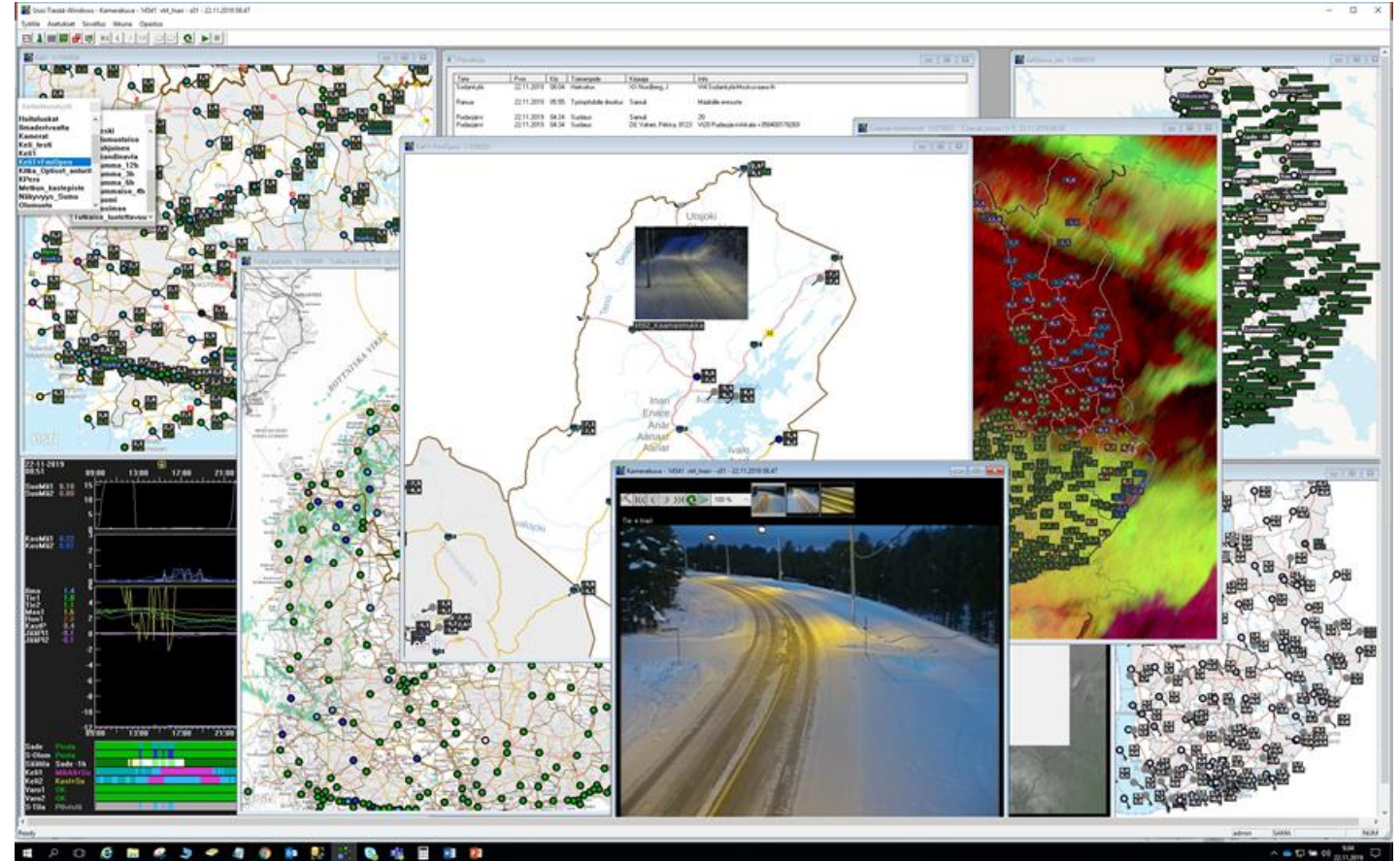
- In cooperation with Destia - Finnish Meteorological Institute for 18 years
- Almost 30 years experience





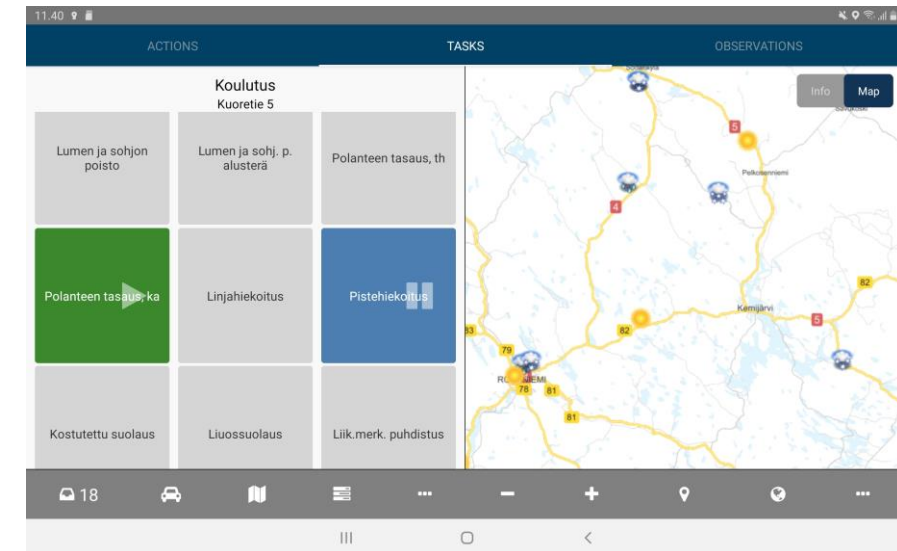
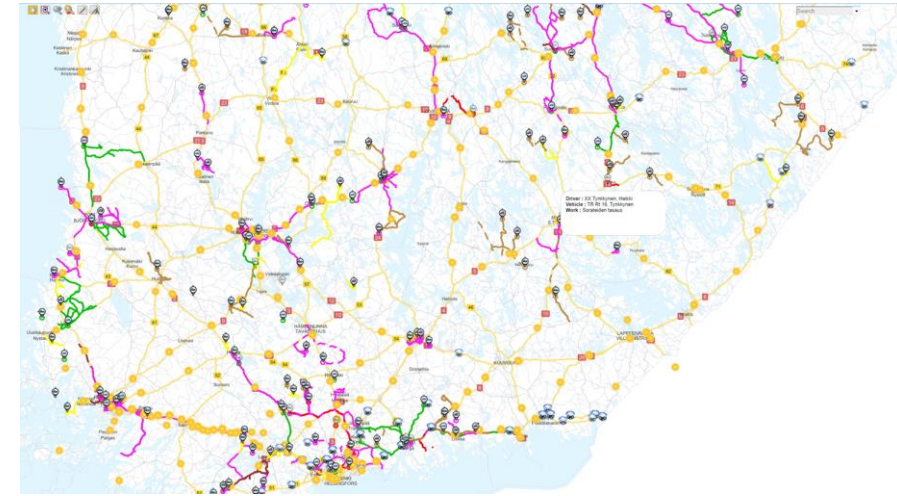
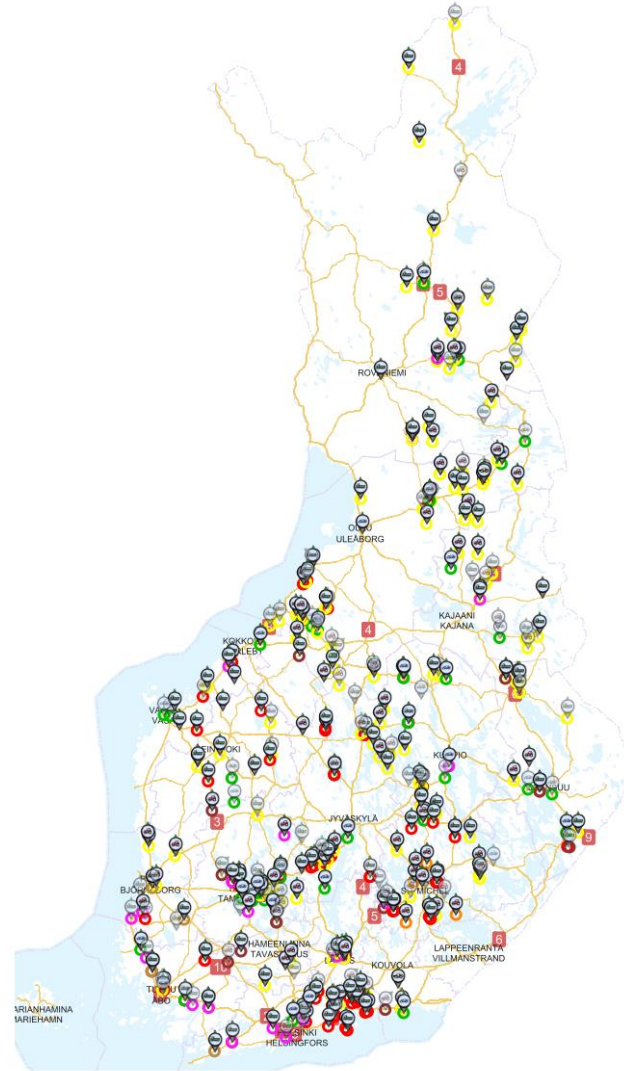
# Road weather information and other oservation

- Road weather observations from around 436 stations
- Road and traffic cameras from about 750 cameras
- Other Weather Stations
- Forecasts to all 436 stations
- 11 weather radars
- Satellite observations
- Mobile observations
- Road user feedback



# Maintenance data collection

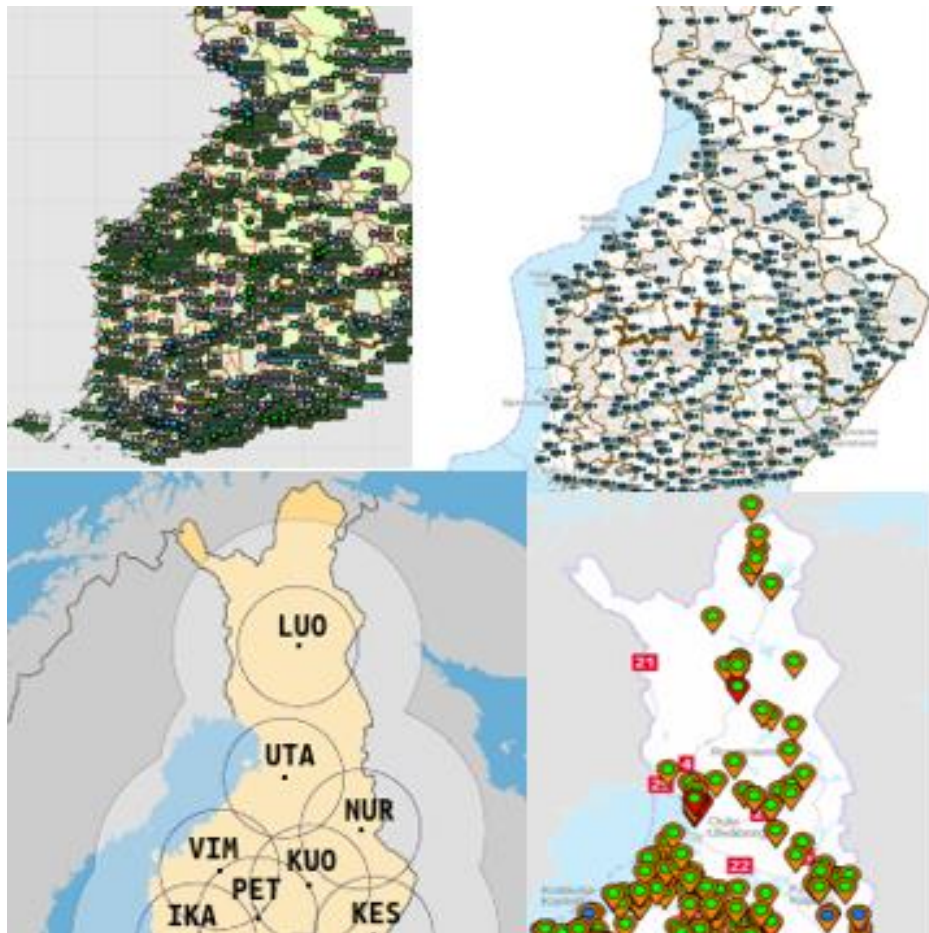
- The data collection from maintenance trucks was started in late 1990's
- The third generation in use
- Complete internal and external reporting
- Every maintenance unit has the monitoring system in use
- 2000 users, 1700 mobile devices





# Digitalisation for winter maintenance

- Lot of information
- Geographically, there are areas where information is scarce
- The quality requirements concerning the maintenance of the main roads are strict.
- Duty officer does not have time to process all the information
- Road conditions have become difficult
- Digitalisation for winter maintenance
  - Automation
  - Snow plough scheduling application
  - Hard Packed Snow Forecast
  - More about Jalonne Oy's Lauri Kettunen presentation on digitalisation of winter maintenance





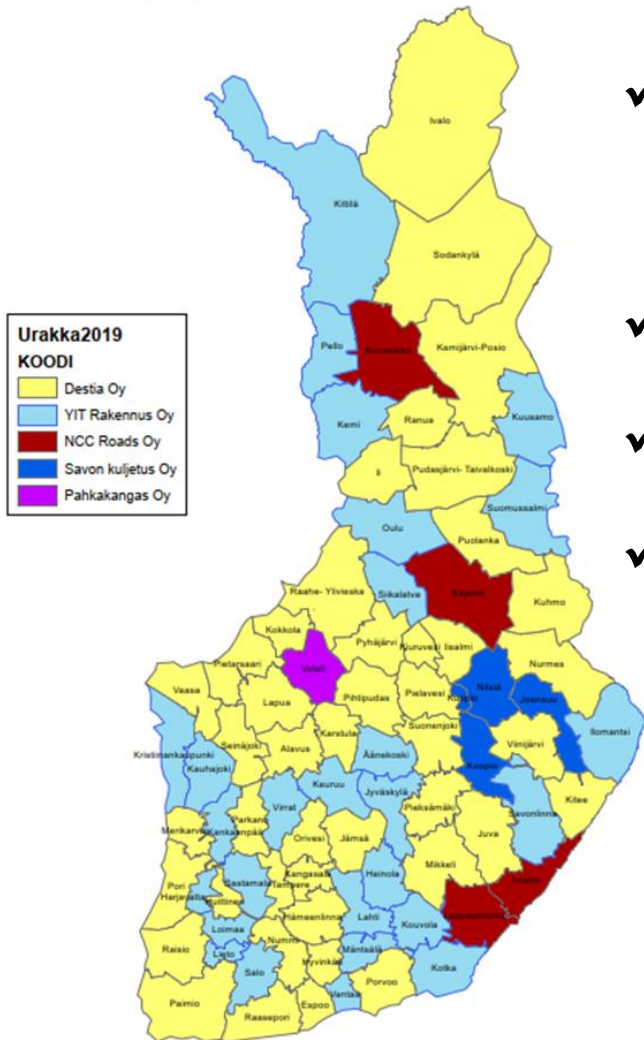
An aerial photograph of a winter forest. A narrow, snow-covered road or path runs vertically through the center of the image. The forest is composed of many evergreen trees, their branches heavily laden with snow. The lighting is soft, creating a serene and cold atmosphere. The text "Scheduling the snowploughs" is overlaid in a large, white, sans-serif font, centered horizontally and partially overlapping the road and the trees on either side.

# Scheduling the snowploughs



# CHALLENGES

- ✓ Majority of maintenance contracts
  - 44/79
- ✓ Variety of maintenance classes
- ✓ Limited time and resources
- ✓ High quality



## Talvihoitoluokka

- (Ise) Liukkaudentorjunta ilman toimenpideaika
- (Is) Normaalisti aina paljaana
- (I) Normaalisti paljaana
- (Ib) Pääosin suolattava, ajoittain hieman liukas
- (Ic) Pääosin hiekoitettava, ohut lumipolanne sallittu
- (II) Pääosin lumipintainen
- (III) Pääosin lumipintainen, pisin toimenpideaika





An aerial photograph of a winter landscape. A dense forest of evergreen trees, heavily laden with snow, covers the upper two-thirds of the image. Below the forest, a wide, snow-covered clearing or road stretches horizontally across the middle. Two cars, one red and one white, are visible on the road. The lower third of the image shows a snowy field with scattered small evergreen trees and patches of bare ground. The overall scene is serene and wintry.

# Developping the solutions

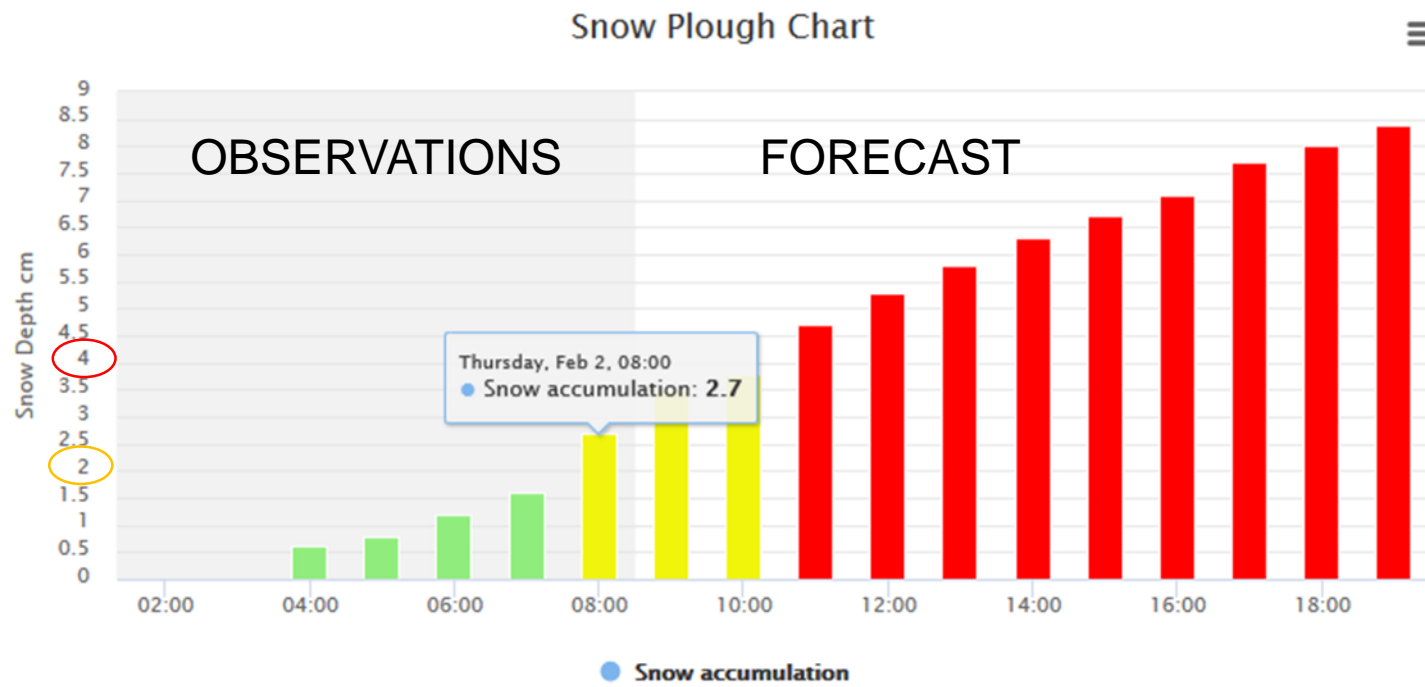
13.2.2020



# SNOW PLOUGH SCHEDULING APPLICATION

9 am forecast

MAXIMUM  
VALUE  
TRESHOLD  
VALUE



**Talvikunnossapito**

Viimeisin toimenpide suolaus 22.11. klo. 07:15

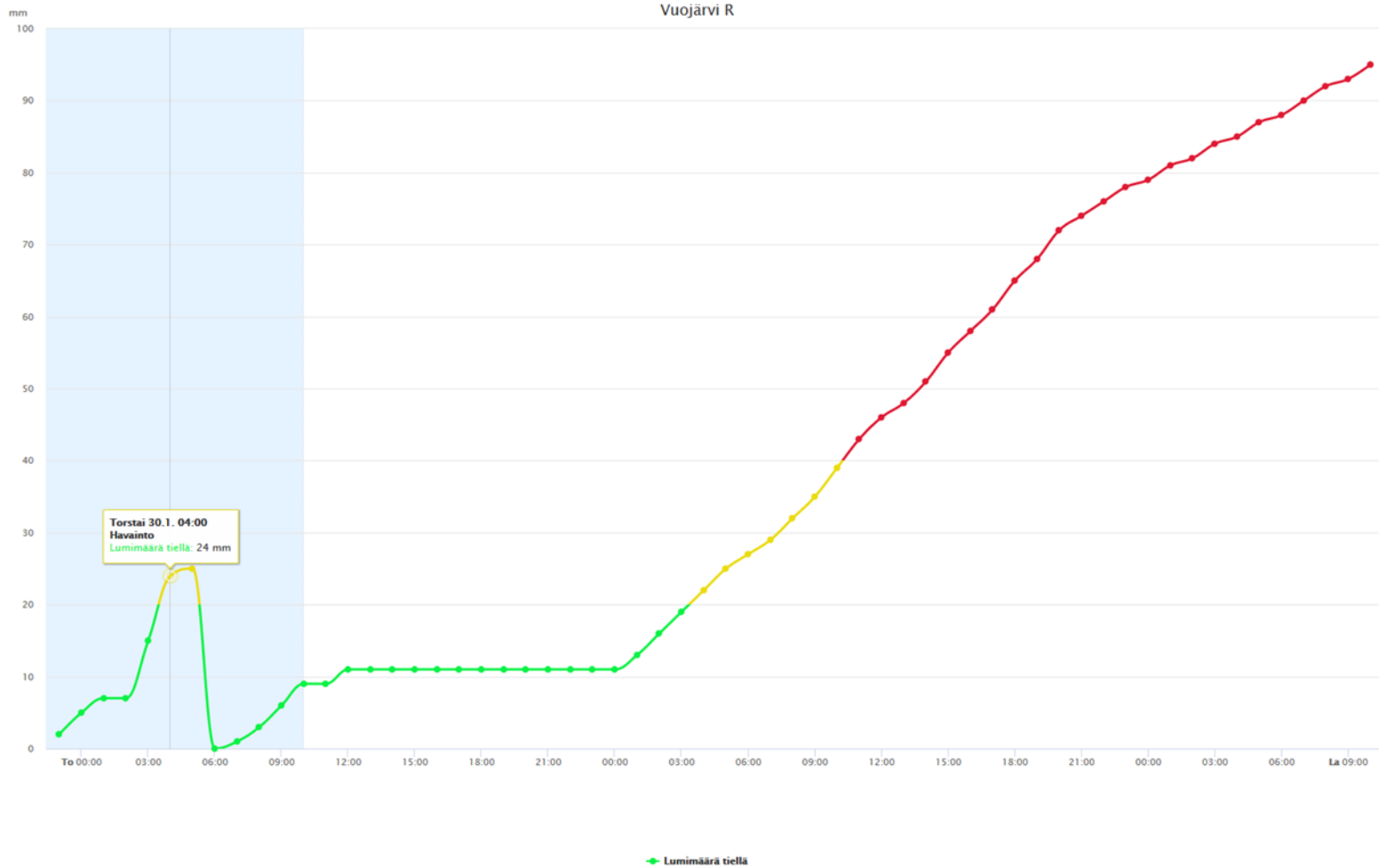
*Edelliset toimenpiteet*  
 22.11. 06:43 Auras ja sohjonpoisto  
 20.11. 07:34 Suolaus

Palvelu on koeyössä. Tiedossa voi olla puutteita.  
 22.11.2017 9:47



Graafi 1

Vuojärvi R



Kartta








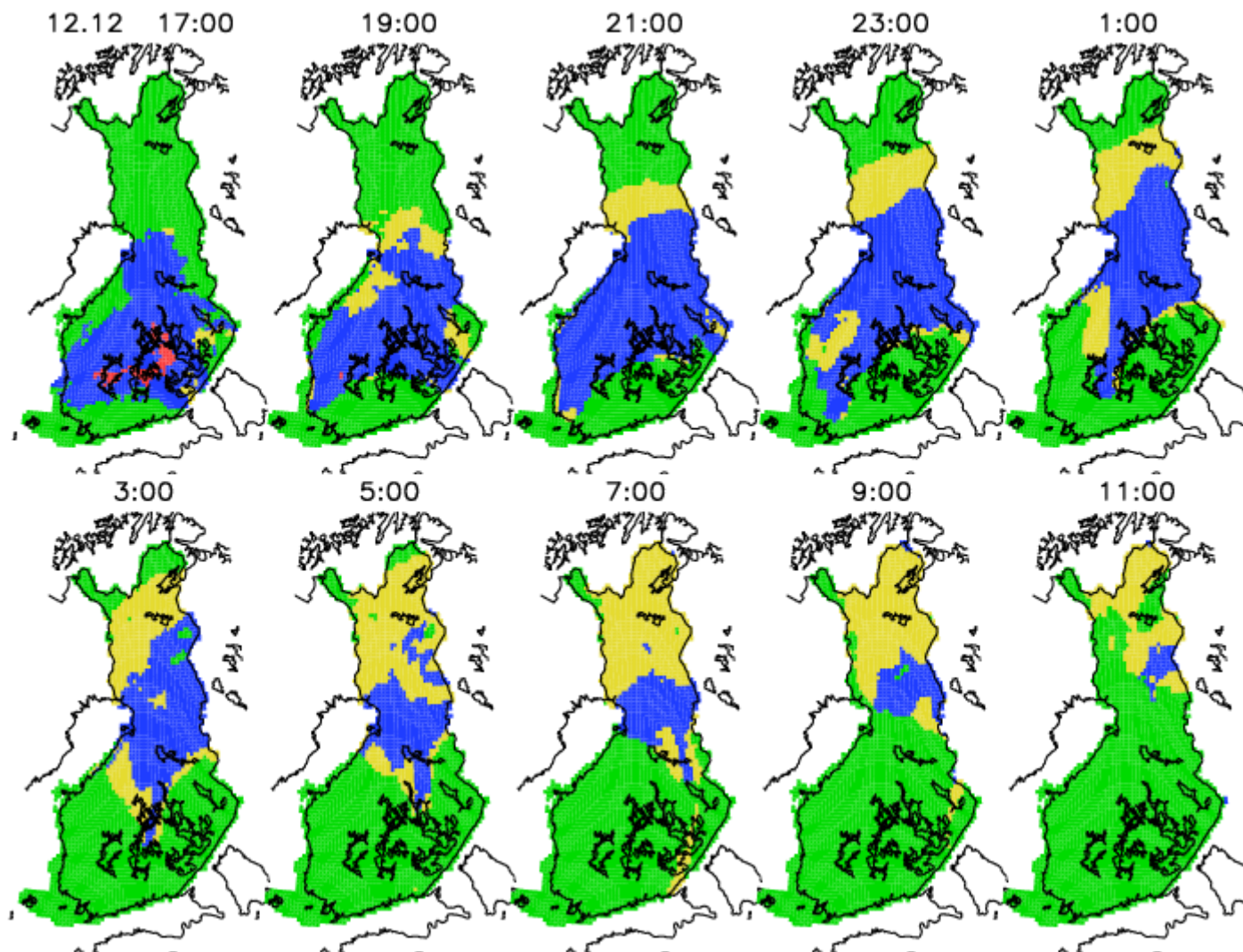


# Hard Packed Snow



# Hard Packed Snow

-  No hard packed snow forming
-  Forming of hard packed snow possible
-  Forming of hard packed snow probable
-  Forming of hard packed snow very probable





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**DESTIA**

**Thank You!**



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