



22nd
ITS World Congress

Bordeaux, France

5 to 9 October

2015

Automated winter road management procedures: an entry gate for advanced ITS deployment?

Roberto Cavaliere,
TIS innovation park

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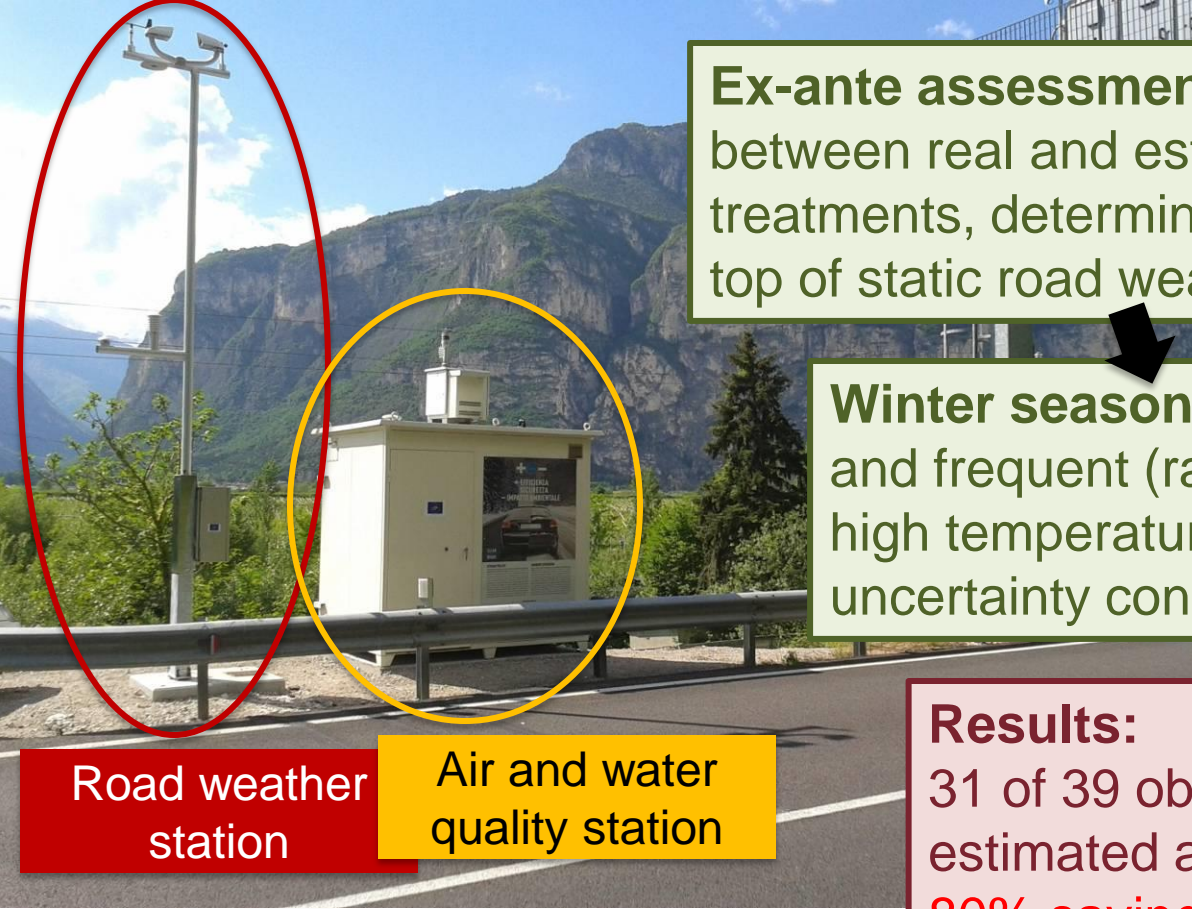
The case of the Province of Trento

- One of the largest alpine territories in Italy, with a road infrastructure of 2.445 [km].
- Typically a **harsh environment** with **abundant snowfalls** and **cold temperatures**.
- Ex-ante situation: well-organized road maintenance service, but with **no RWIS** in place.

Road Weather Information Systems (RWIS) have already a large proof of their benefits in the winter road management domain.



Optimization margin assessment



Ex-ante assessment: comparison between real and estimated treatments, determined a-posteriori on top of static road weather data.

Winter season 2013-2014: intense and frequent (rainy) precipitation but high temperatures: very high uncertainty conditions.

Road weather station

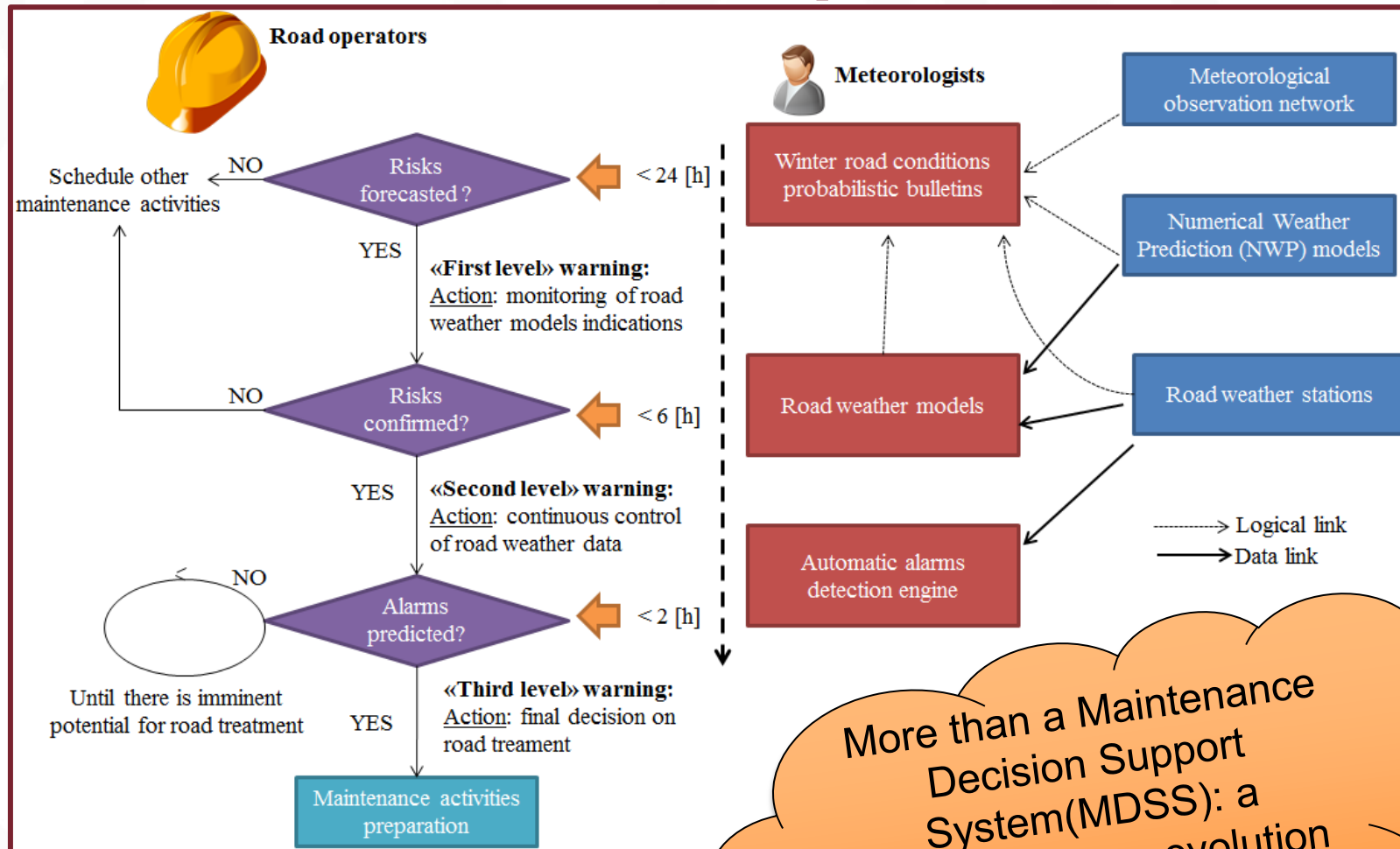
Air and water quality station

Results:

31 of 39 observed anti-icing activities estimated as unnecessary: about **80% saving potential!**

Highest optimization margins where and when the boundary between carrying out or not a treatment is very thin.

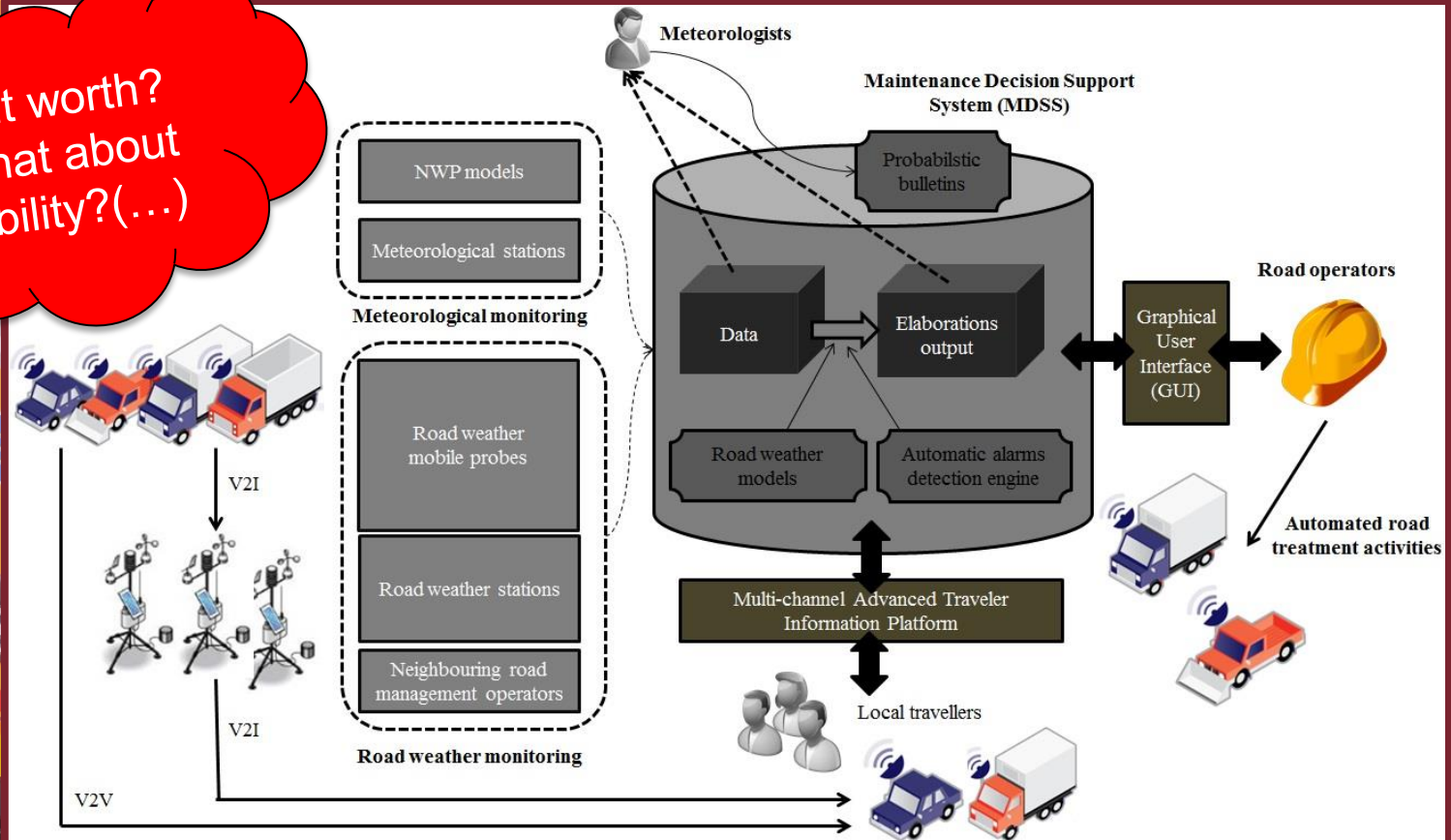
Towards automated procedures (today)



More than a Maintenance Decision Support System(MDSS): a machine-driven evolution of winter road management procedures.

Towards automated procedures (tomorrow)

Is it worth?
What about liability?(...)



Cooperative systems: gritters, road weather stations, vehicles.

Automated systems:
procedures + autonomous
gritters

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Thanks a lot for your attention!

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