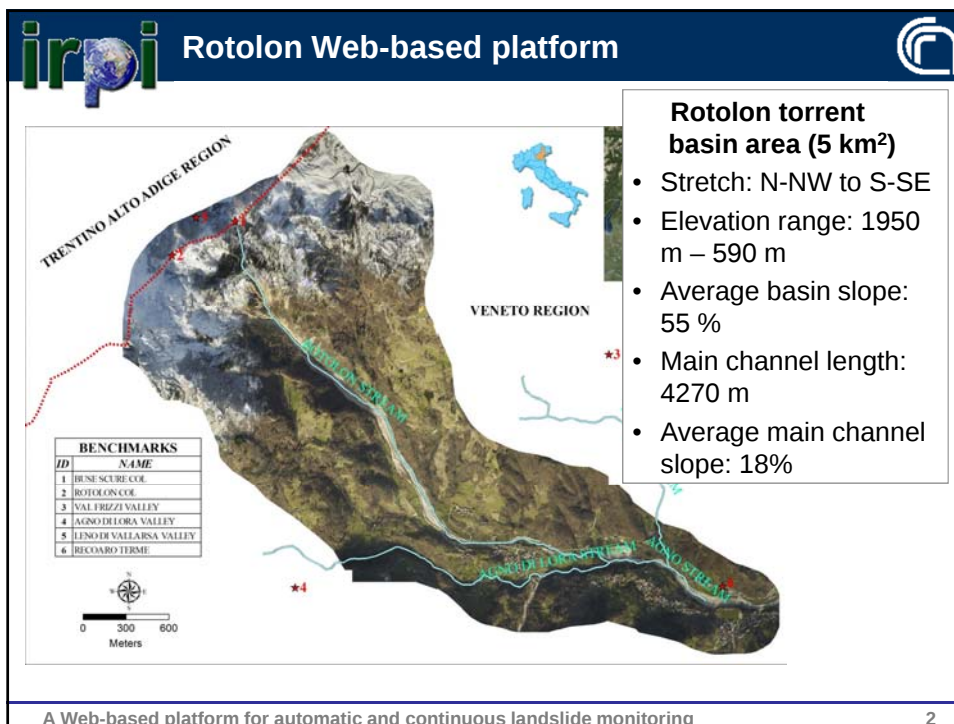


3.3 「Web を活用した地すべり 自動モニタリングシステム」

水文地質防災研究所パドヴァ支部研究員

ジャンルーカ・マルカート

A Web-based platform for automatic and continuous landslide monitoring: the Rotolon case study

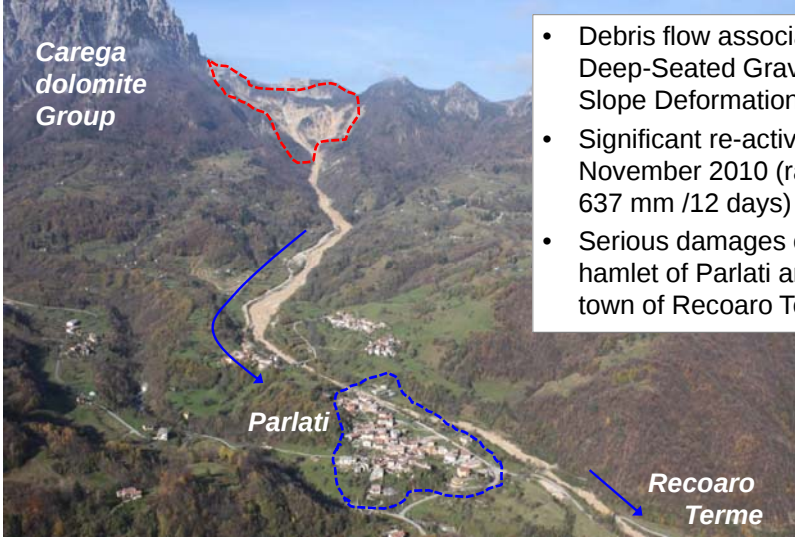




Rotolon Web-based platform



Col Rotolon - Recoaro Terme, Vicenza (Eastern Italian Alps)



Carega dolomite Group

Parlati

Recoaro Terme

- Debris flow associated to a Deep-Seated Gravitational Slope Deformation
- Significant re-activation on November 2010 (rainfall of 637 mm /12 days)
- Serious damages on the hamlet of Parlati and the town of Recoaro Terme

A Web-based platform for automatic and continuous landslide monitoring

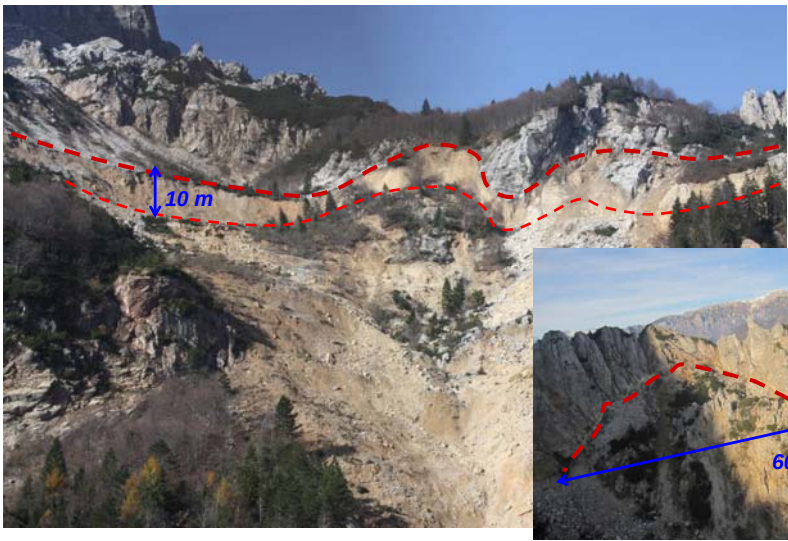
3



Rotolon Web-based platform



Col Rotolon - Recoaro Terme, Vicenza (Eastern Italian Alps)



10 m

600 m

A Web-based platform for automatic and continuous landslide monitoring

4

71



Rotolon Web-based platform


Monitoring System and implementation of an EWS



1495 m a.s.l

- **2 rain gauges**
- 1 video camera
- 6 wire extensometers
- Automated Total Station (ATS) with 42 benchmarks
- 3 pendulum section
- 1 trip wire
- Sirens system and thresholds
- Master Station
- Modem ADSL and WiFi
- Radio link

A Web-based platform for automatic and continuous landslide monitoring
5



Rotolon Web-based platform


Monitoring System and implementation of an EWS




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A Web-based platform for automatic and continuous landslide monitoring
6


Rotolon Web-based platform



Monitoring System and implementation of an EWS



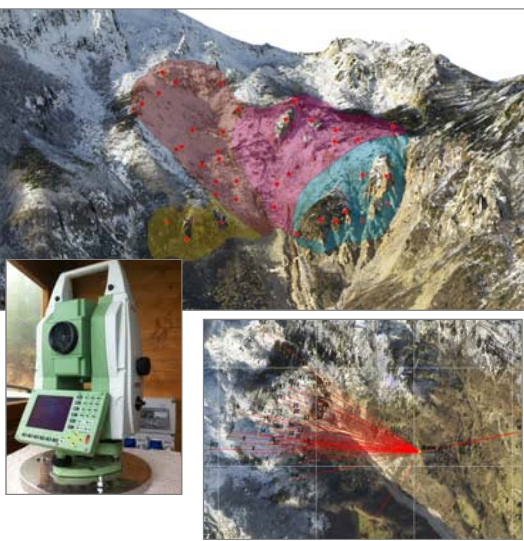
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A Web-based platform for automatic and continuous landslide monitoring
7


Rotolon Web-based platform



Monitoring System and implementation of an EWS



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A Web-based platform for automatic and continuous landslide monitoring
8



Rotolon Web-based platform



Monitoring System and implementation of an EWS



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A Web-based platform for automatic and continuous landslide monitoring
9



Rotolon Web-based platform



Monitoring System and implementation of an EWS



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A Web-based platform for automatic and continuous landslide monitoring
10

Monitoring System and implementation of an EWS



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Rotolon Web-based platform

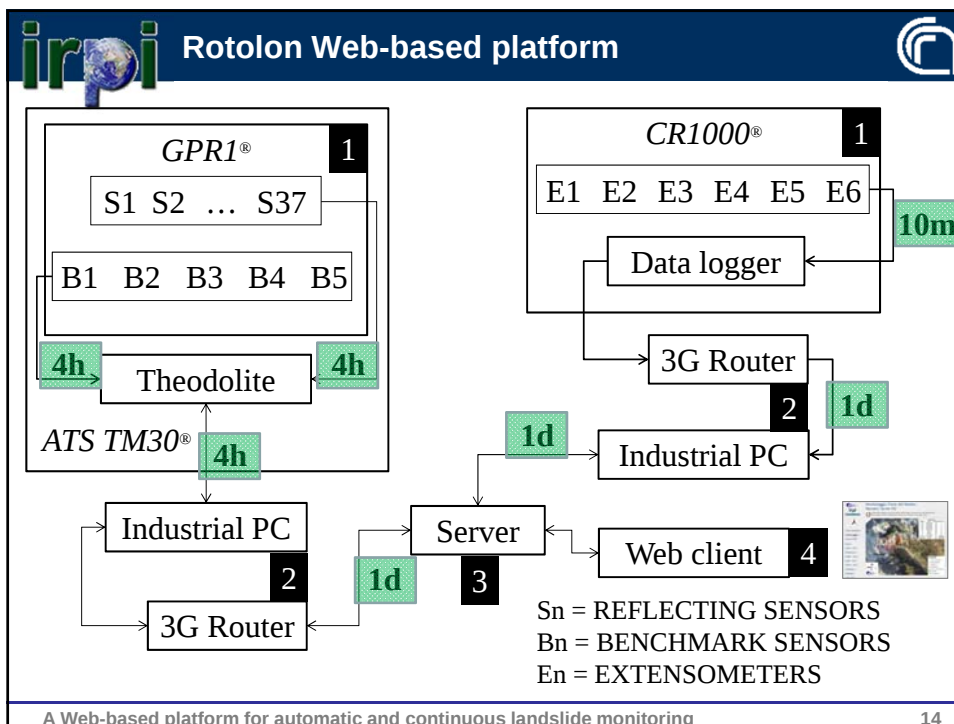
Why a Web-based platform for disaster management?

- Collecting data, connecting users and sharing information
- Reduce cost of maintenance and simplify the monitoring network
- Aggregate all monitoring system measures on a common DBMS
- Provide a cost-benefit solution for stakeholders actions

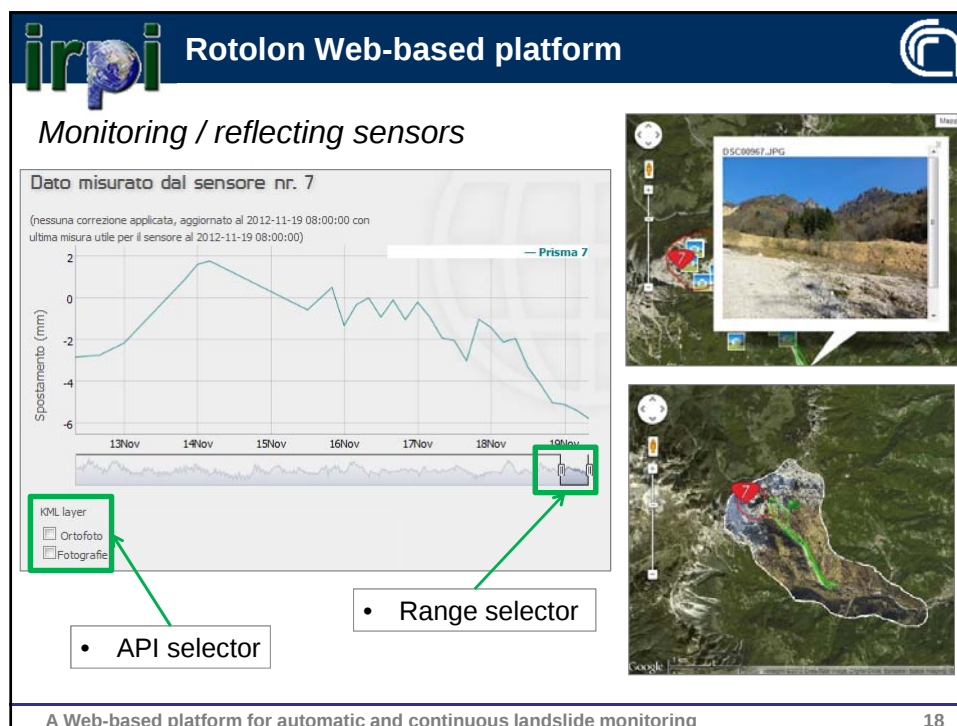
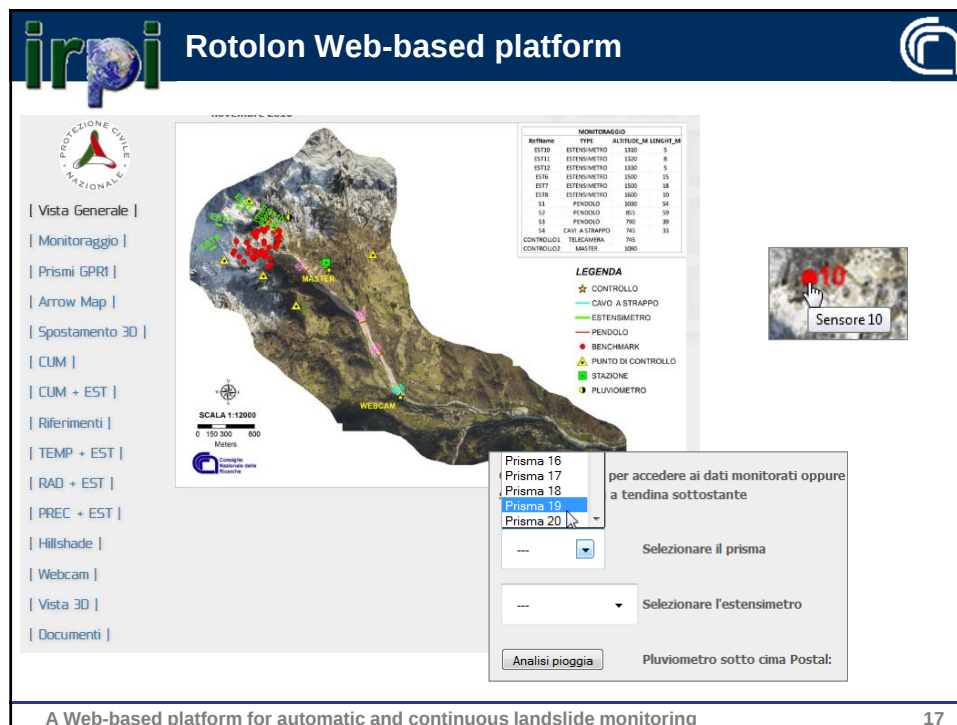
Features and rules of a Web-based platform:

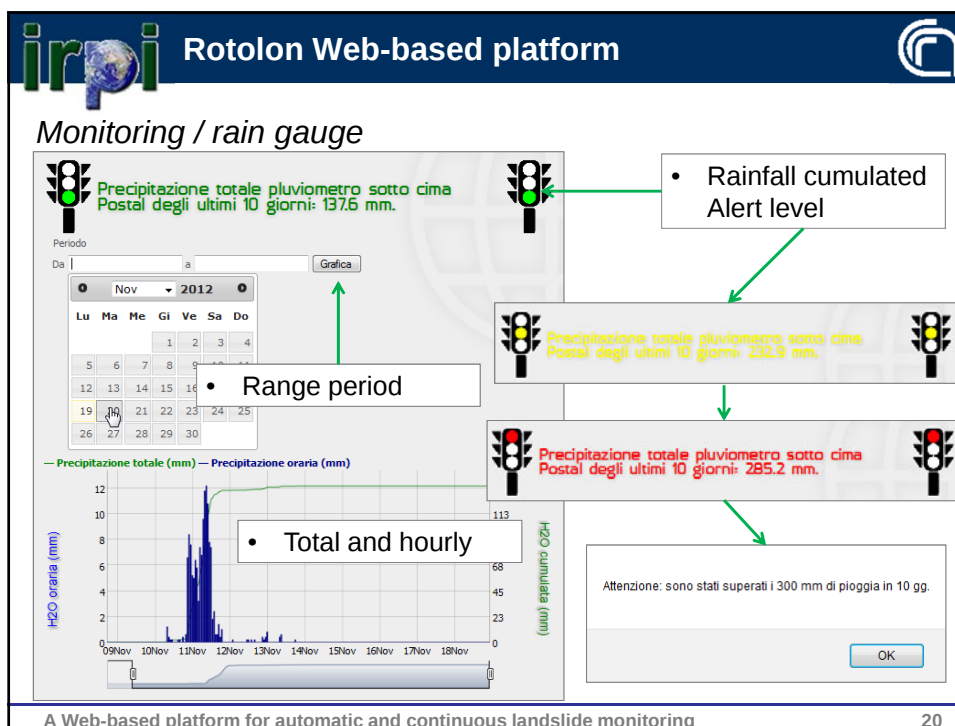
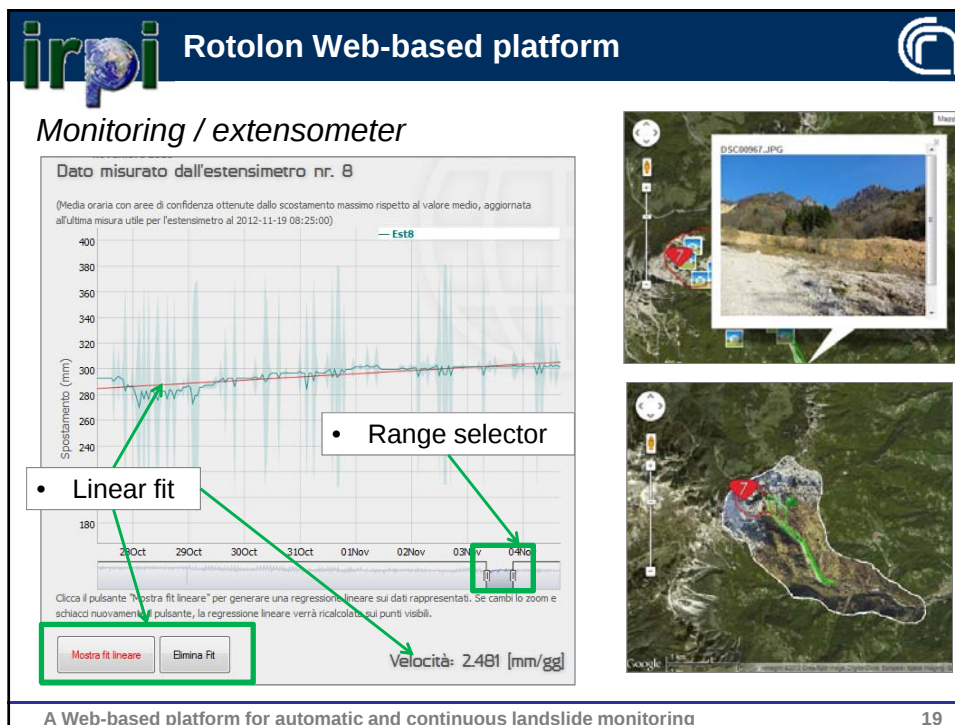
- Multi-user access and maintenance (admin rights)
- End-user support on prevention and decision-making (read-only rights)
- Common platform for a user-friendly interface (report and graphic layout)
- Integration and time-based synchronization of all measurements
- Near-real time and easy-to-use facility
- Automatic communication (Skype, email, SMS) by threshold criteria
- Apple SDK integration
- Remote user-interface for technical maintenance

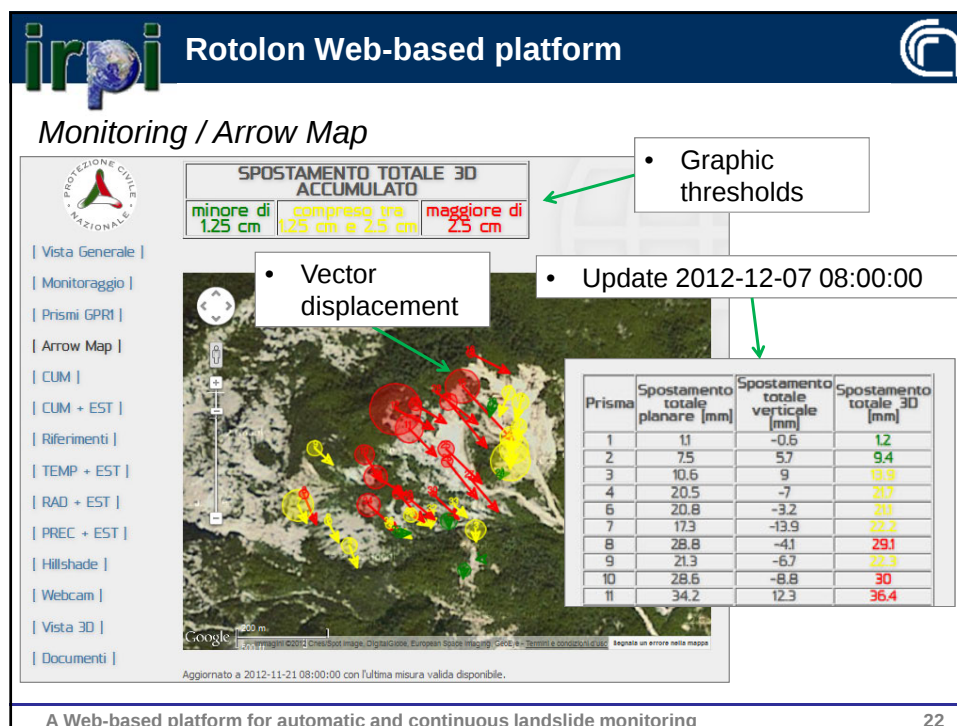
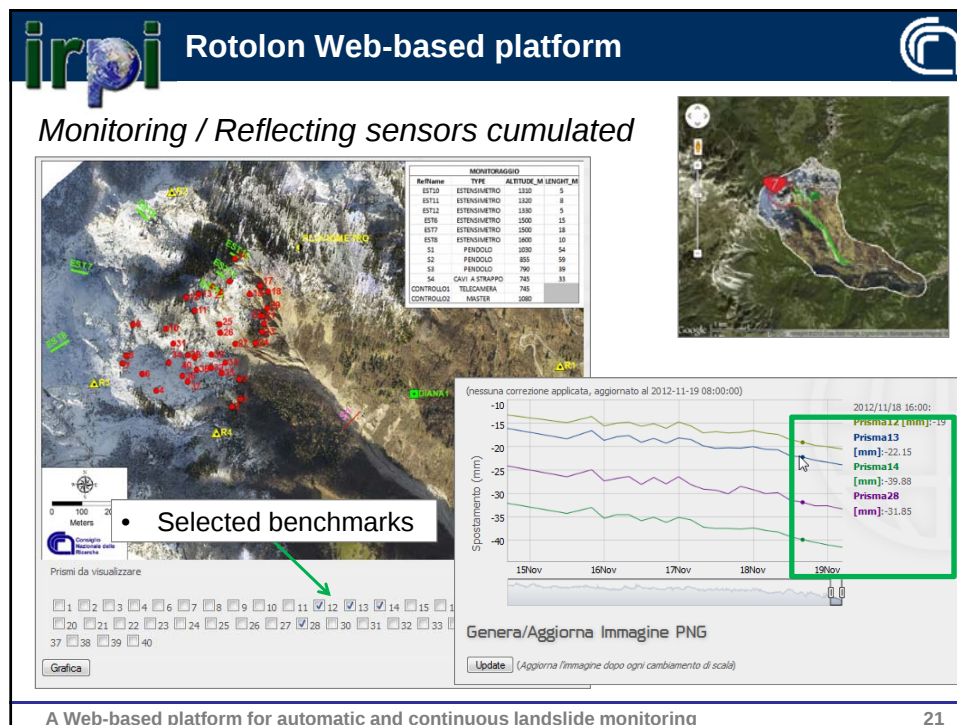
A Web-based platform for automatic and continuous landslide monitoring
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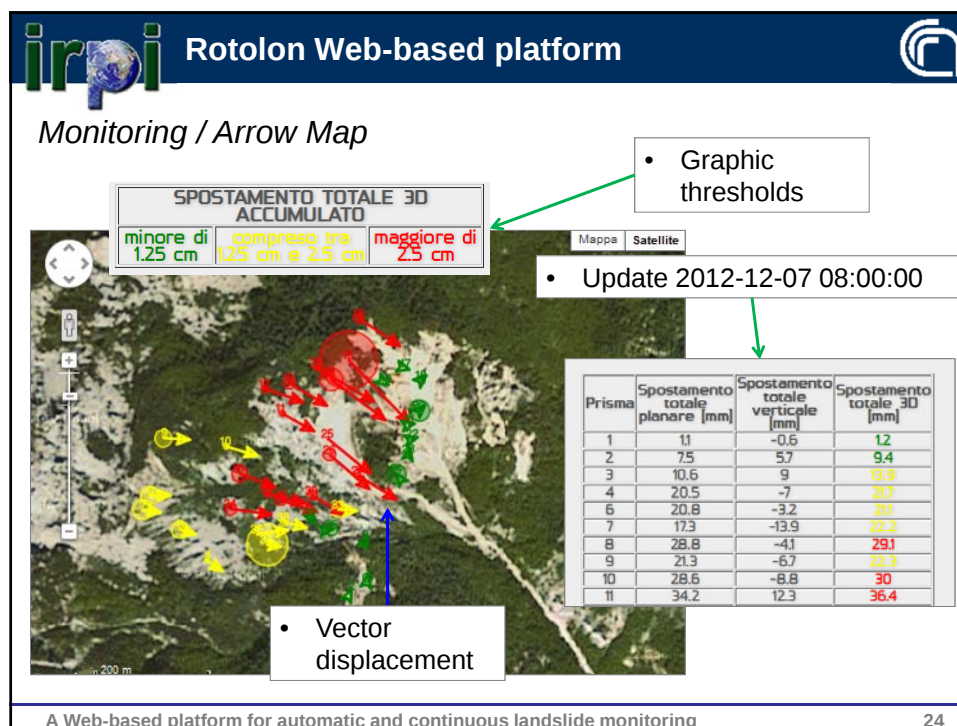
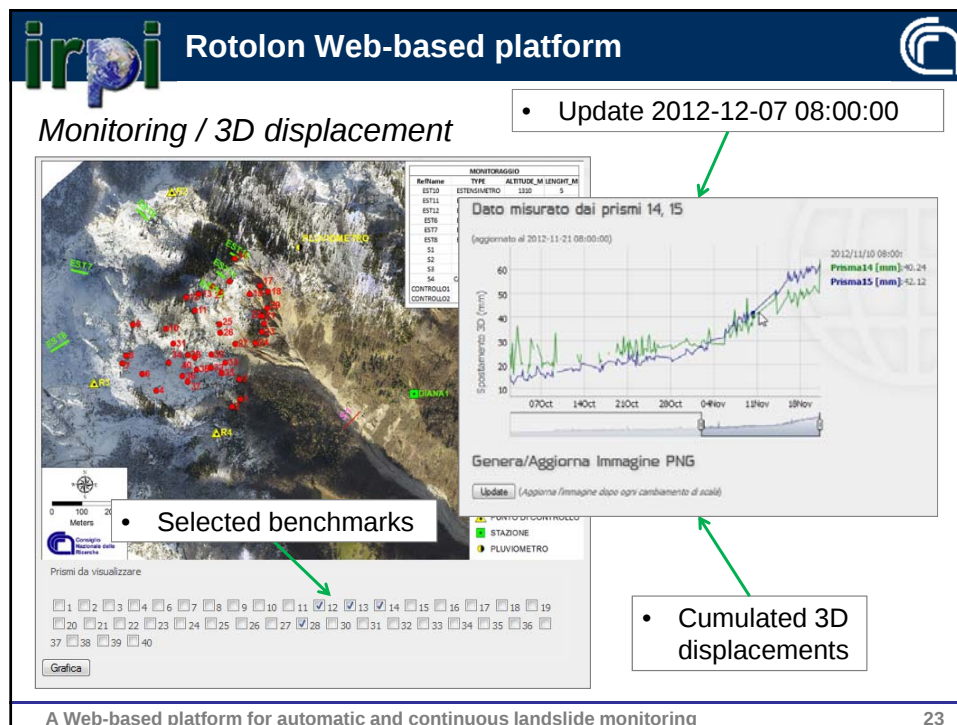


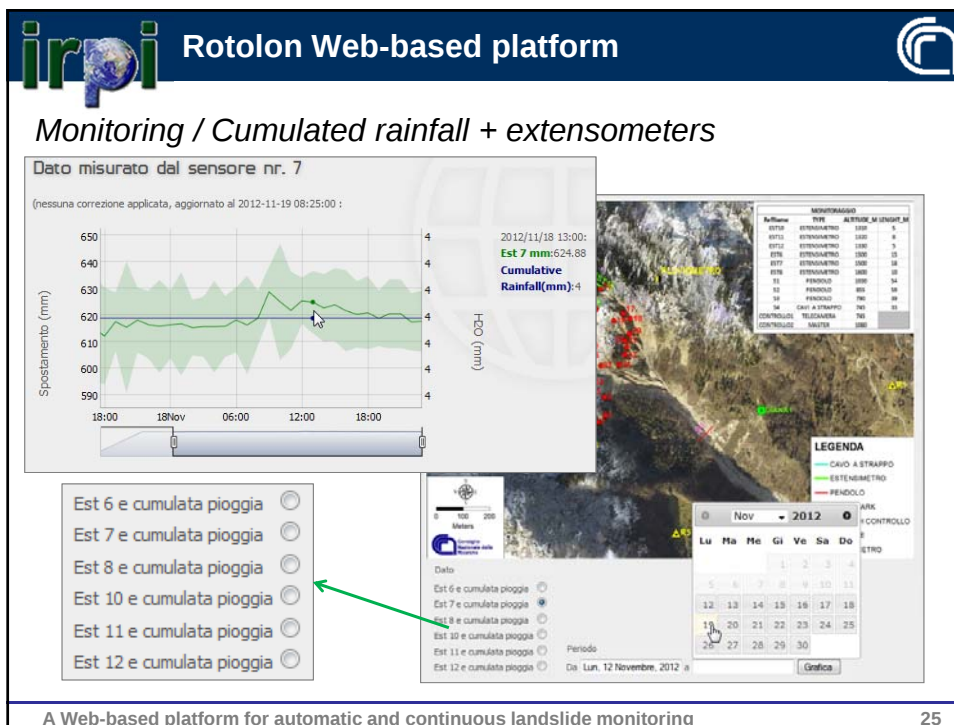




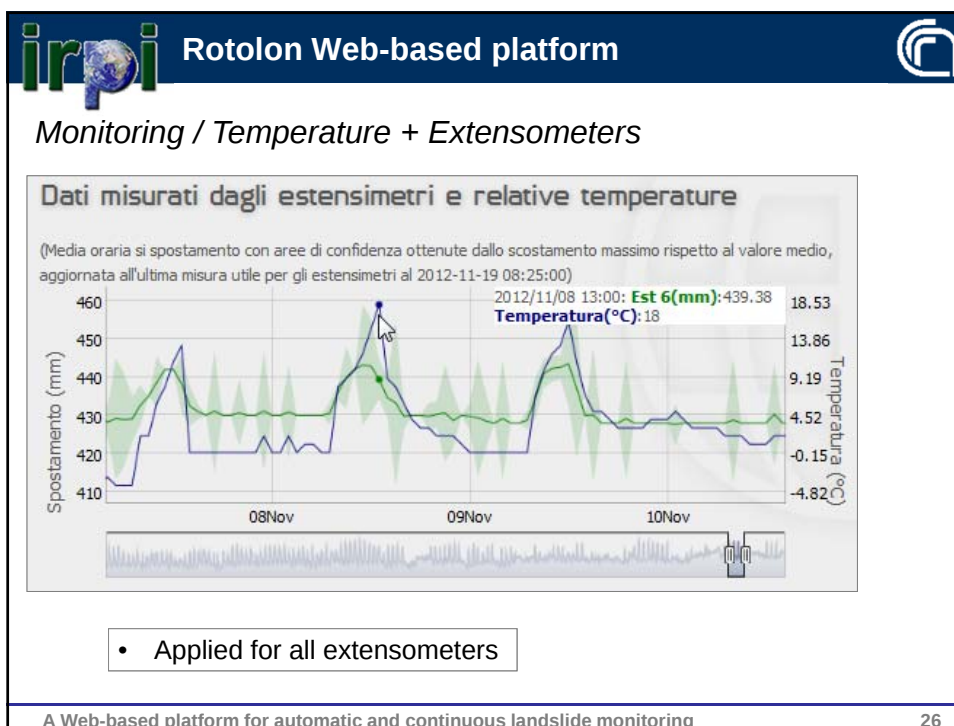








25

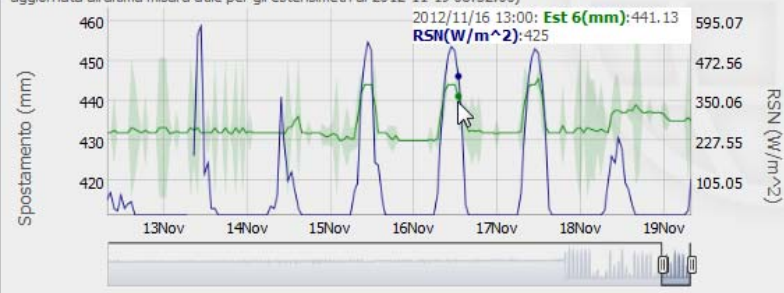


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Monitoring / Radiance + Extensometers

Dati misurati dagli estensimetri nr.6, 7 e 8 e dati di radiazione solare netta orari misurati dall'Arpav

(Media oraria si spostamento con aree di confidenza ottenute dallo scostamento massimo rispetto al valore medio, aggiornata all'ultima misura utile per gli estensimetri al 2012-11-19 08:32:00)

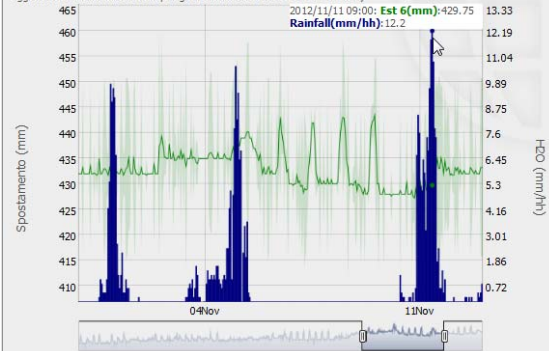


- Applied for extensometers 6-7-8

Monitoring / Rainfall + Extensometers

Dati misurati dagli estensimetri nr.6, 7 e 8 e dati di pioggia (sotto Postal)

(Media oraria si spostamento con aree di confidenza ottenute dallo scostamento massimo rispetto al valore medio, aggiornata all'ultima misura utile per gli estensimetri al 2012-11-19 08:32:00)



- Applied for extensometers 6-7-8

