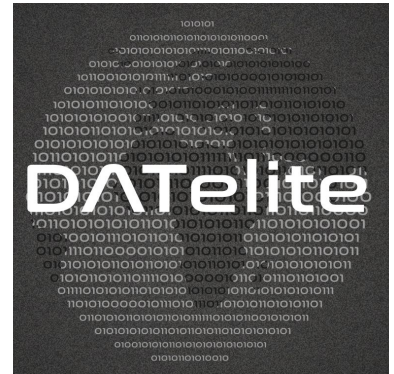


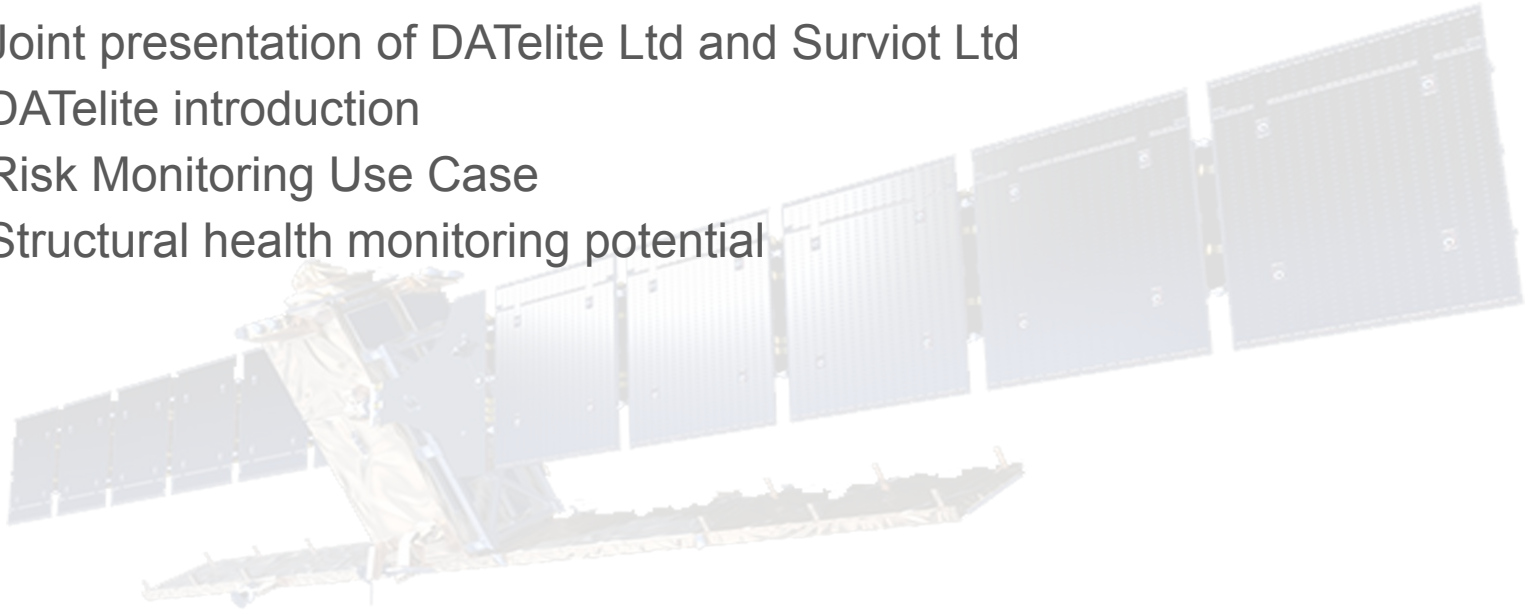
Boarding Disaster Risk Management market for a SME.

Satellite-based Services for Disaster Risk Management,
18th July 2023, Budapest, Hungary



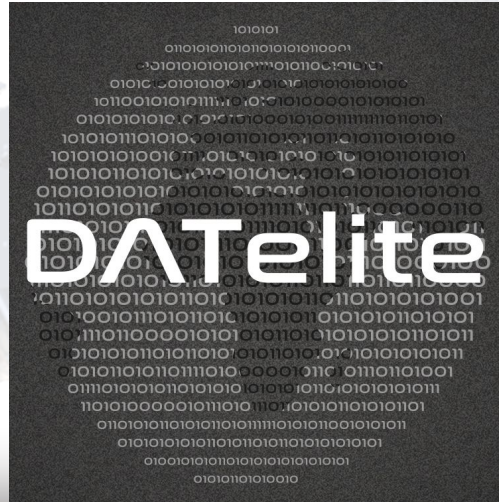
Content

- Joint presentation of DATelite Ltd and Surviot Ltd
- DATelite introduction
- Risk Monitoring Use Case
- Structural health monitoring potential



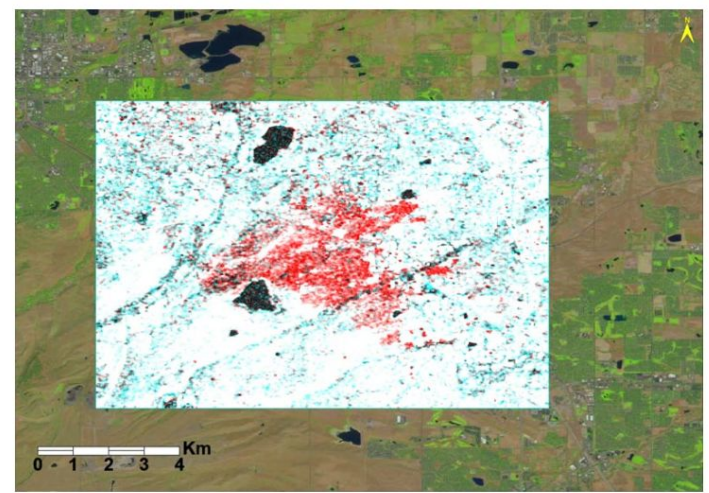
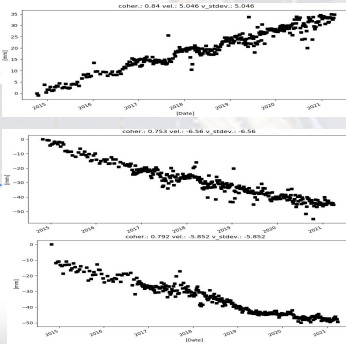
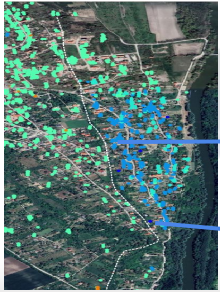
DATelite – Official spin-off company of University of Pécs

- It was established in december of 2017
 - 3 Hungarian individuals and sarmap SA from Switzerland

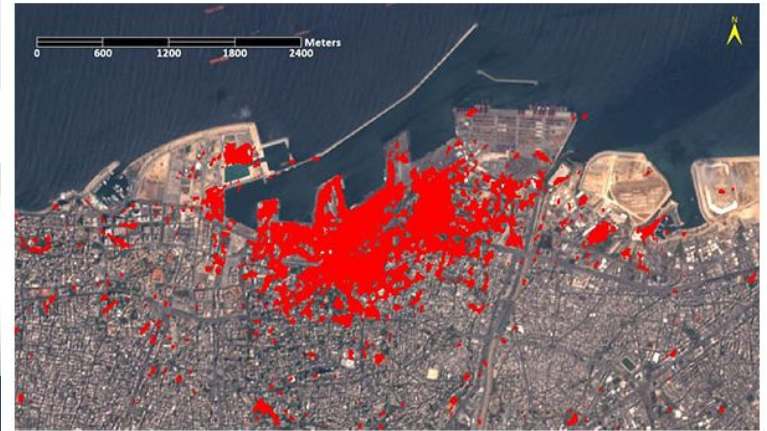


EO products for DRM

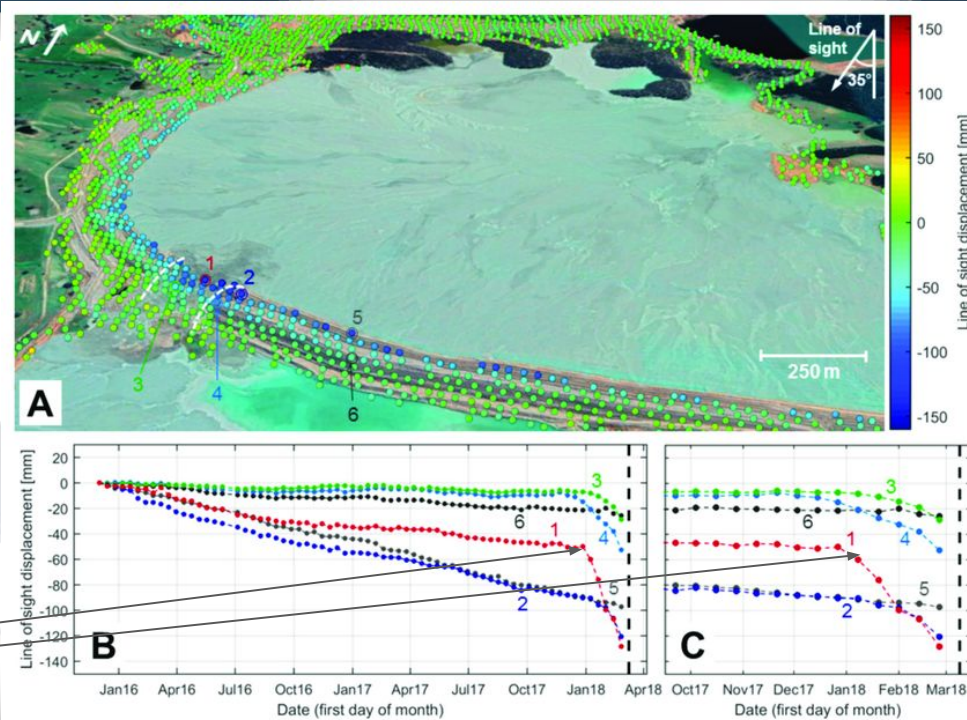
- Flood,
- Fire,
- Landslide,
- Building Damages.



<https://www.nv5geospatialsoftware.com/Learn/Blogs/Blog-Details/ArtMID/10198/ArticleID/24148/Disaster-Strikes-Again-This-Time-In-Our-Backyard>



Cadia gold mine tailings dam collapse in 2018



earthquake

https://www.researchgate.net/figure/Detection-of-precursory-movement-before-failure-of-a-tailings-dam-wall-at-the-Cadia-gold_fig8_350712736

Prevention - the field where SMEs can really contribute

Service and Applications Platforms



Secure ICT environment



USERS



Stakeholder specific analytics & orchestration platforms

Tasking
Discovery
Activation
Orchestration
Work flow customisation

Data/information
Forecast/Inference
Analysis & Indicators
Warning/notification

- ✓ Big data analytics
- ✓ Multi-data fusion
- ✓ AI decision support tools (inference, anomaly, correlation etc)
- ✓ Flexible, adaptable workflow creation
- ✓ New data collection tasking
- ✓ AR/VR visualisation



AI processing/
enhancements/
fusion



Innovative
data processing/
visualisation



Customised fast
Databases ARD
structures etc.



High performance
processing Rapid
connectivity etc

tasking

data

tasking

data

tasking

data

tasking

data



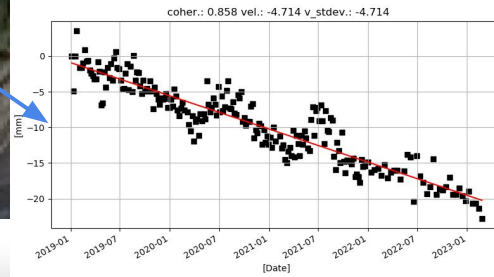
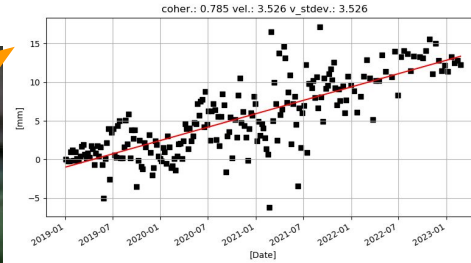
ESA UNCLASSIFIED - For Official Use



THE EUROPEAN SPACE AGENCY

22

Prevention - Ageing Infrastructure





SURVIOT

**SURVIOT is an end-to-end IoT structural health
monitoring solution**

We monitor structures and analyze data.

SURVIOT is a startup

Founders

Attila Berényi CTO

Civil Engineer MSc

Terrestrial laser scanning - engineering survey PhD

Csaba Sándor CEO

Civil Engineer MSc

Our partners



Imagine a world...

- Where we can detect invisible threats
- Where buildings and infrastructure can communicate
- Where communities can prepare and respond



Factors of changing climate

- Extreme weather
- Temperature variations
- Precipitation patterns changes
- Sea level rise
- Permafrost thaw

Effects on structures

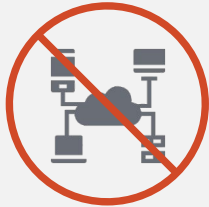
- Changing load patterns
- Changing humidity and moisture
- Changing usage patterns

Satellite based services in SHM

- GNSS
- Satellite communication
- SAR data integration
- High resolution imagery

Most structural health monitoring solutions are far from perfect

Current digital approach



Integration is difficult when using sensors from multiple vendors



Project scaling issues



On-site professional inspection is regularly required



Difficult resource optimisation



Engineering systems are often incompatible



Synchronisation overhead

A small inexpensive POD can do a lot

Examples:



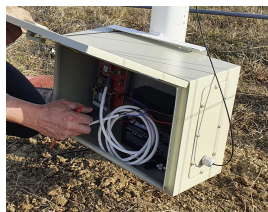
GNSS POD



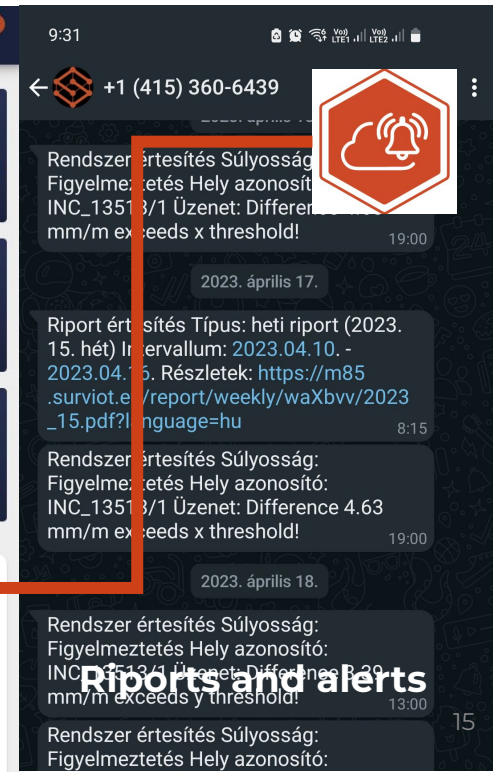
Inclino POD



Well POD



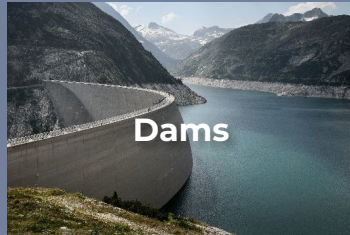
Integrated automated systems are here



Monitoring several kinds of structures



Bridges



Dams



Tunnels



**Historical
landmarks**

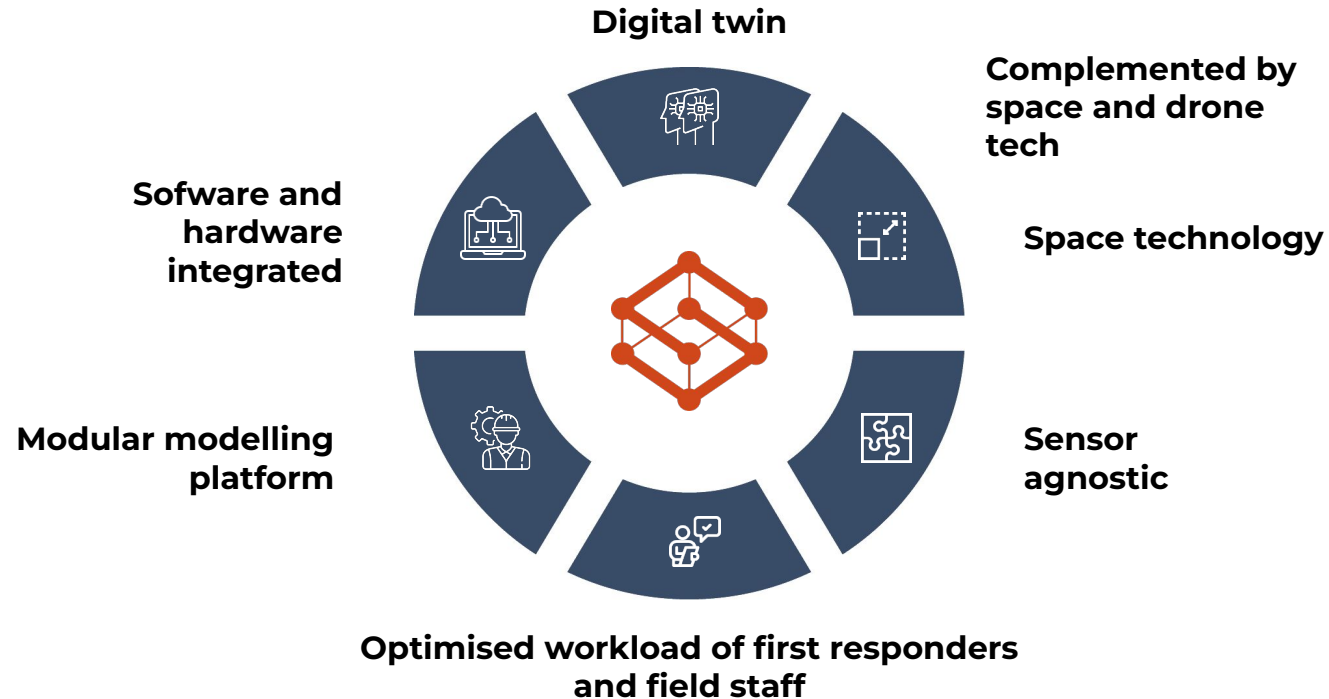


**Mines,
quarries**



**Buildings,
smart cities**

Features of SHM





SHM benefits if implemented in time

Improve resilience and preparedness

Detect early signs

Detect slow changes

Provide detailed picture to stakeholders

Increase time available for rescue

Feed strategic planning

Working towards a safer and more resilient future



surviot.com



surviot-monitoring



info@surviot.com



SURVIOT



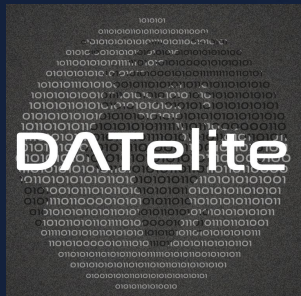
Csaba SÁNDOR



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datelite@datelite.hu



Levente RONCZYK