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Big Science Spin-off's



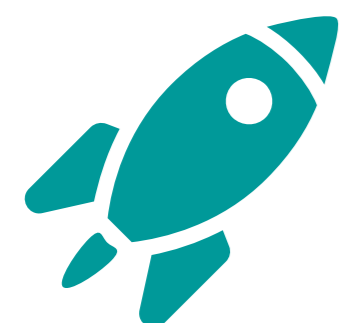
June 17th, 2022

Making sense of data

About S[&]T



“
S[&]T- Where the heart for technology
meets the heart for people.
”



Established in 2000



Headquarter in Delft,
offices in Rome and
Oslo



Workforce 150
FTE
(90% MSc/PhD)

www.stcorp.nl



Markets: Space,
Defense, Hightech
industry



Innovation partner for
Decision Support Solutions

Making sense of data



Our mission

Enabling Data driven decision making
for a safer and healthier life on earth.”

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Sensing & Control



Data Processing



Data Science



Decision Support

Data

Information


Insight

S[&]T Market Solutions

 <h2>Defence & Security</h2>	 <h2>Space & Science</h2>	 <h2>Hightech Industry</h2>	 <h2>Climate & Sustainability</h2>
<p>Robust Navigation and Communication</p> <ul style="list-style-type: none"> • GNSS Jamming & spoofing detection. <p>Space Situational Awareness</p> <ul style="list-style-type: none"> • Space Weather Monitoring • Space Surveillance 	<p>Data-Processing as a Service.</p> <ul style="list-style-type: none"> • (Onboard) DP framework for commercial satellite operators and EO services providers <p>(Scientific) Data Portal as a Service</p> <ul style="list-style-type: none"> • Mapping Portals • Digital Twins 	<p>Industry & Big Science</p> <ul style="list-style-type: none"> • Scientific Software/System Engineering • Precision Control Software • Predictive Maintenance • Computer Vision • AI/Machine Learning 	<p>Environmental intelligence</p> <ul style="list-style-type: none"> • EO-data Insights for Corporates, Consultancy and Engineering firms • EO-data driven decision making for Public Sector



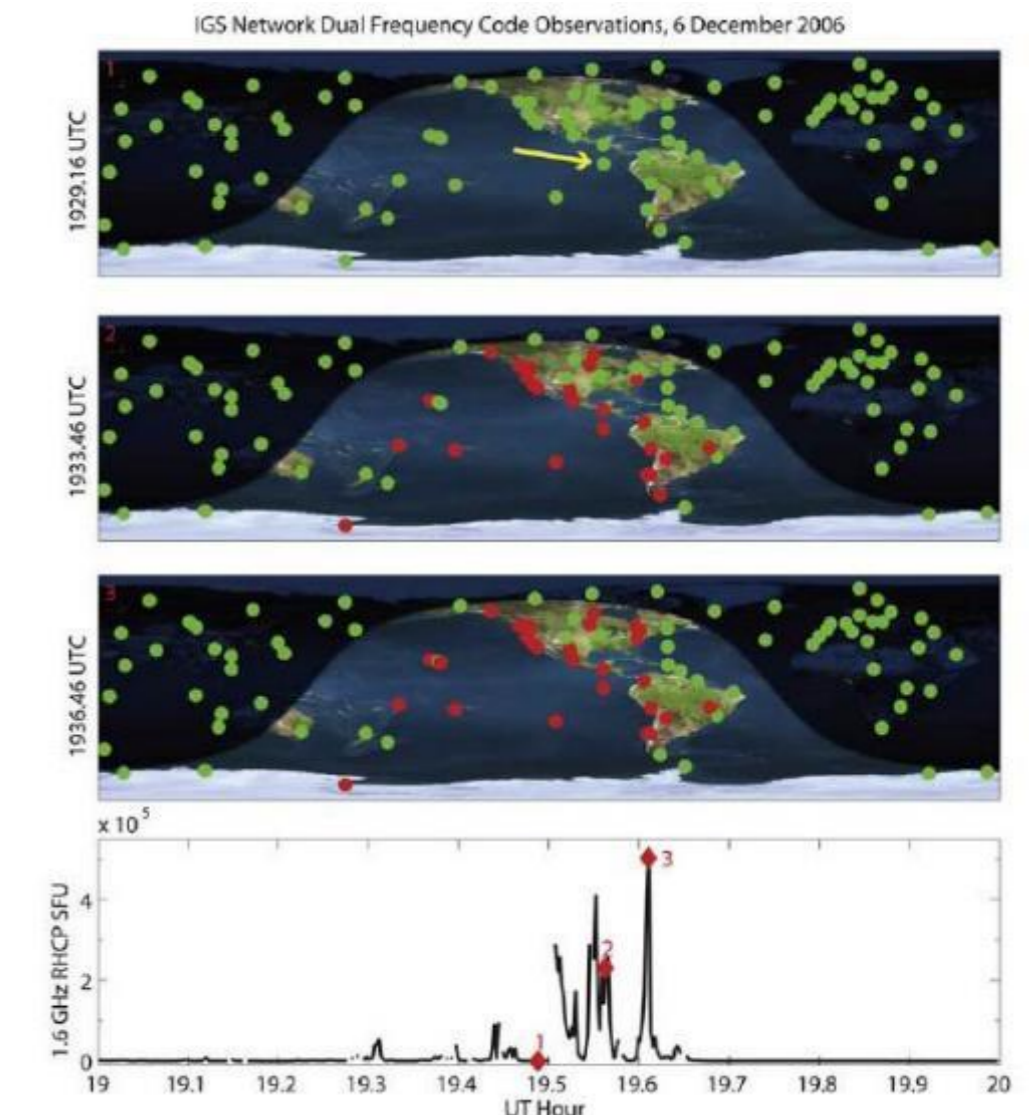
Space Weather Monitoring



Spin-off 1

LOFAR -> Space Weather

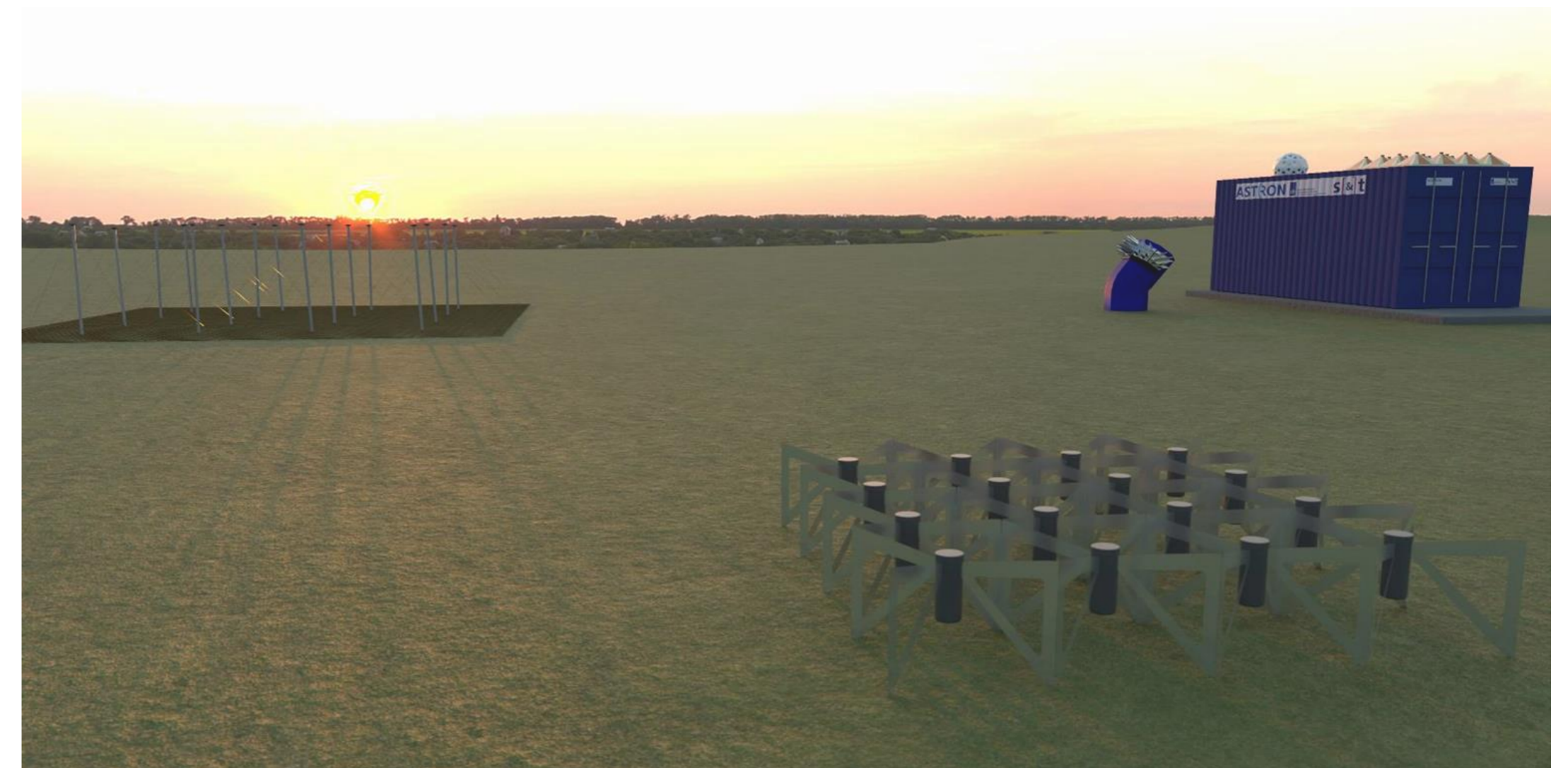
- Started with Big science project LOFAR
- Today's spin-off => Space Weather Monitoring
- Knowledge of LOFAR used
- LOFAR antenna's used for testing.
- Our sun impacts also radio traffic on Earth
 - Radio communication
 - Radar
 - GNSS



Product Goal: **Early warning** System for Military and Civilian Users of Antenna Systems

DISTURB – Solar Radio Bursts

- DISTURB: *Disturbance-detection by Intelligent Solar radio Telescope of (Un)perturbed Radiofrequency Bands*
- Co-development: S[&]T, ASTRON (radio astronomy society) and KNMI (Dutch Meteorological Institute)
- Being developed under research contract from the Dutch MoD
- Cooperation discussions with international parties

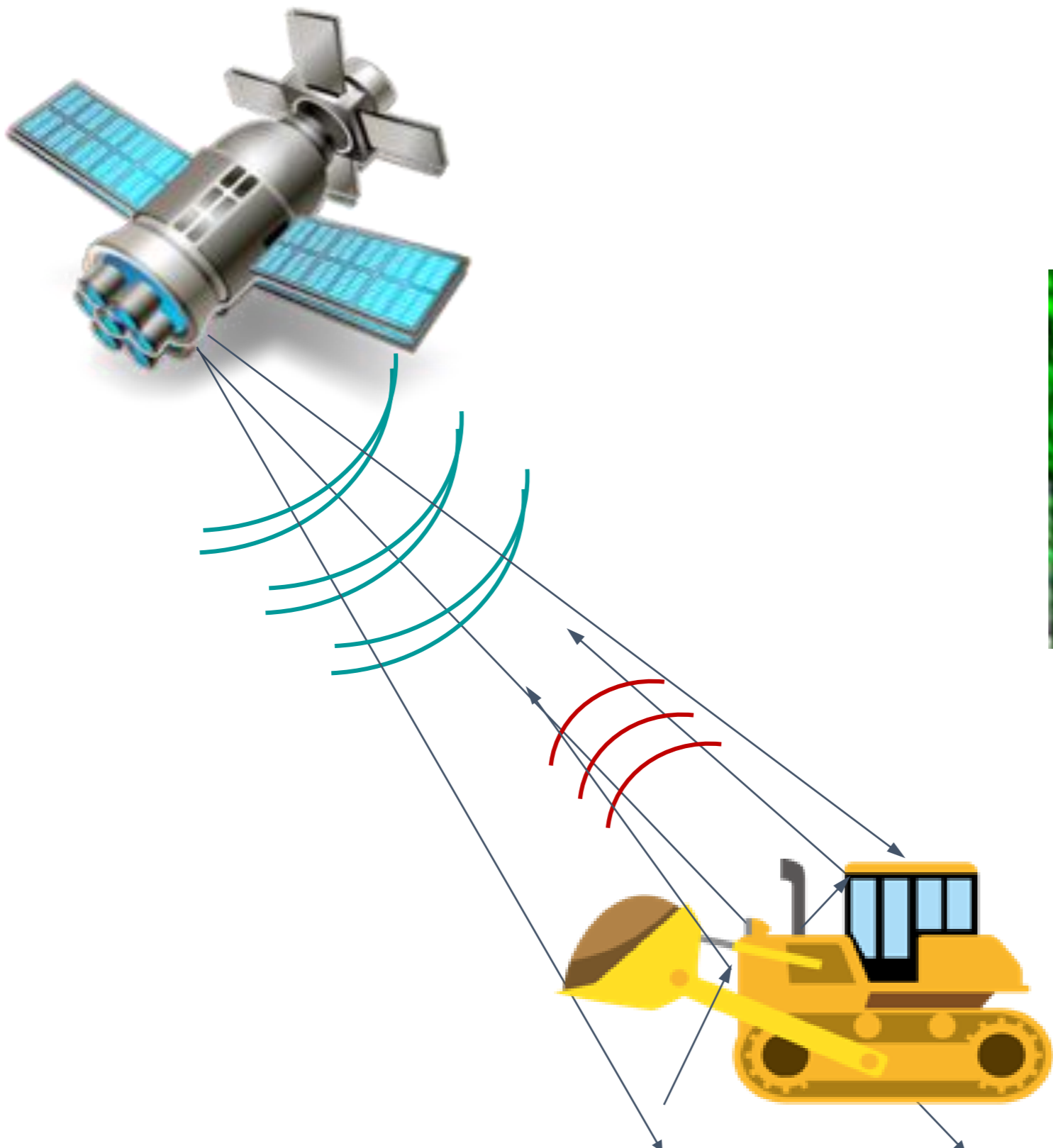


A satellite with large solar panels is shown in orbit above Earth. The satellite is positioned in the upper left quadrant, with its solar panels extending across the top. The Earth's surface, showing clouds and landmasses, is visible below. A semi-transparent teal box is overlaid on the right side of the image, containing text and a color scale.

Energy corridor monitoring from Space

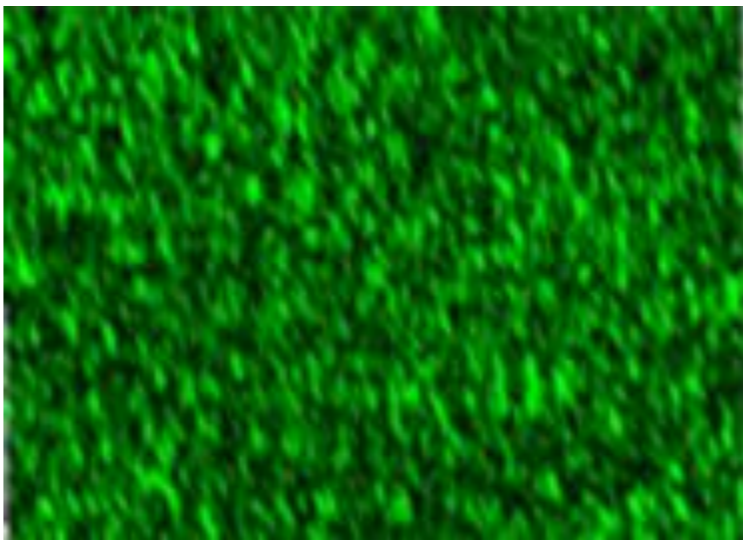


Spin-off 2

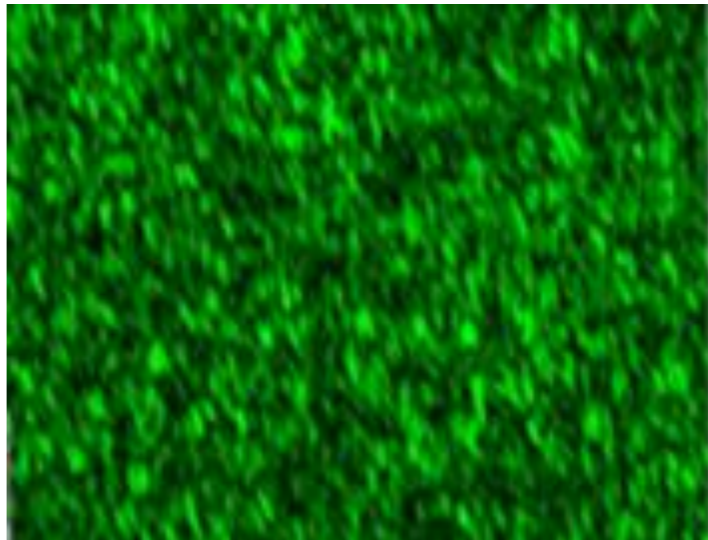


- **Weather Independent Radar satellites (SAR)**

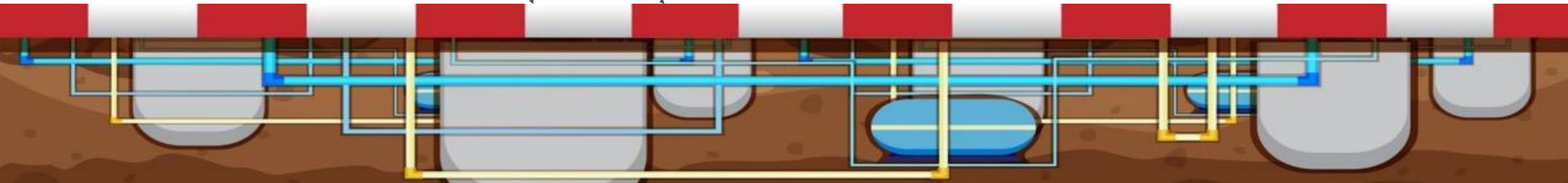
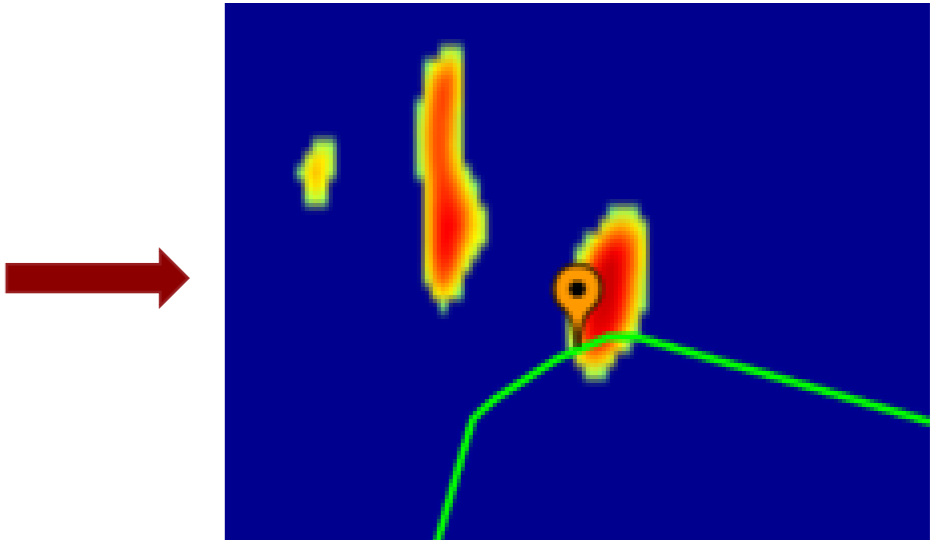
Old Radar Image

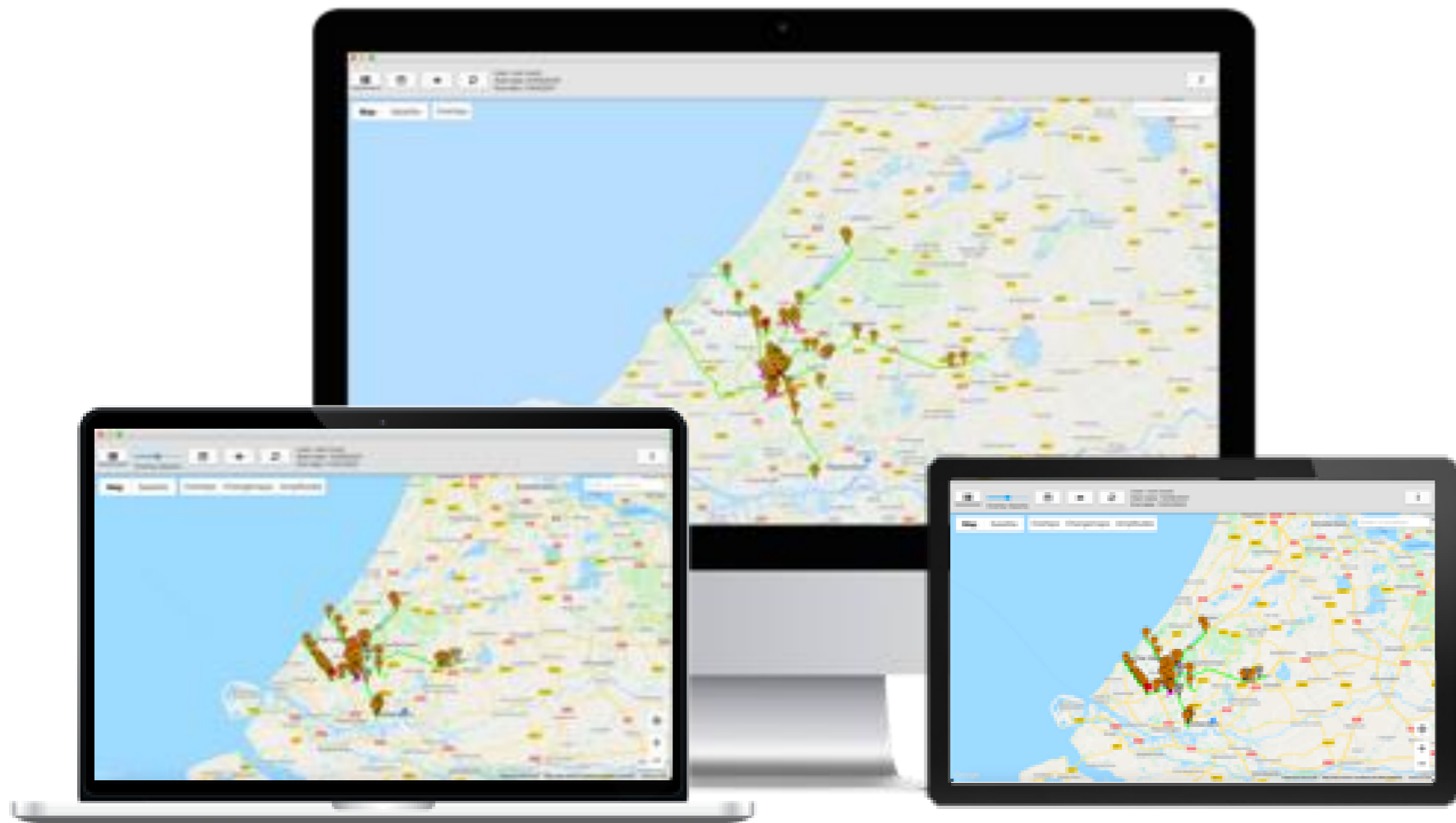


New Radar Image

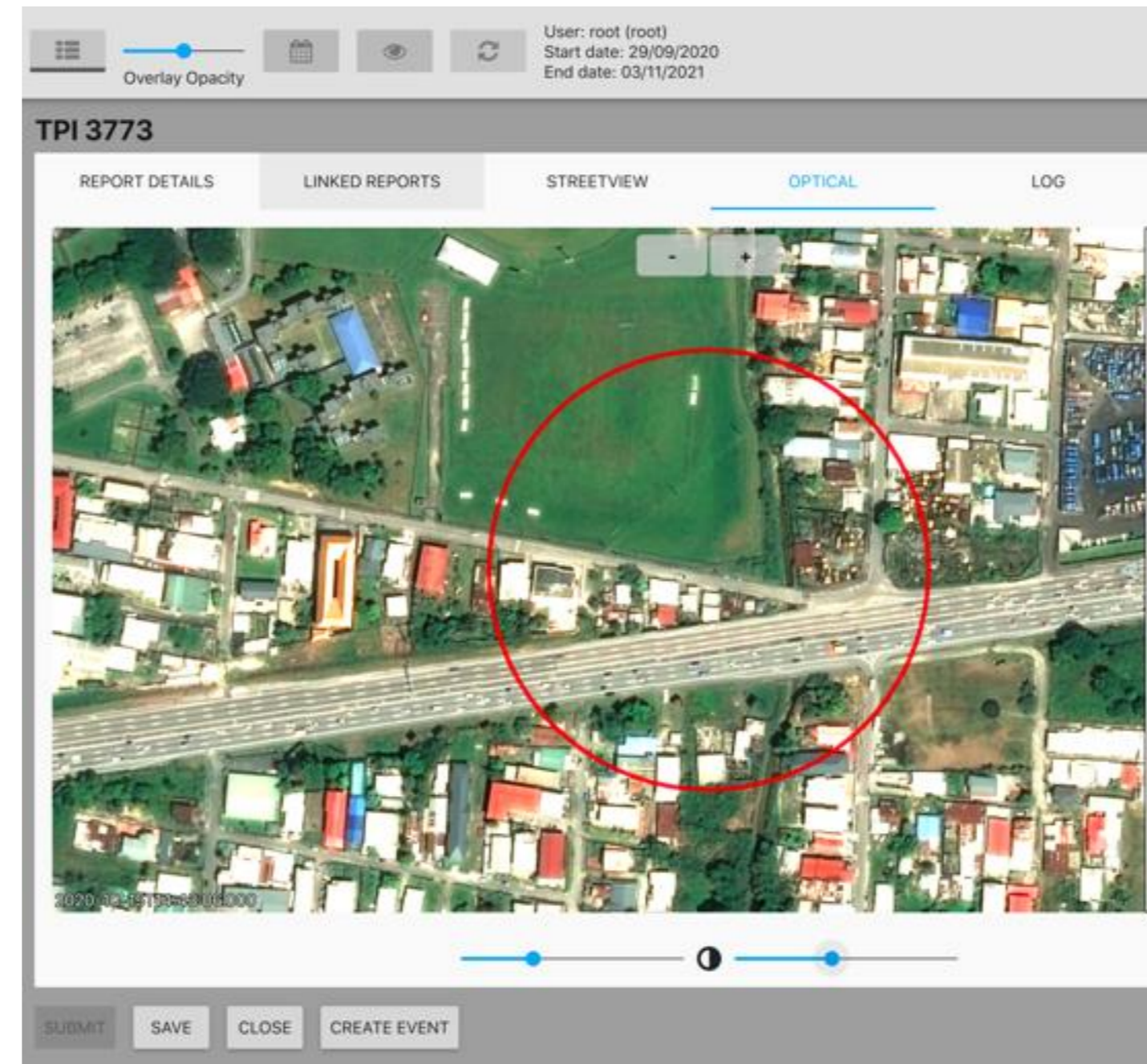


Change detection image

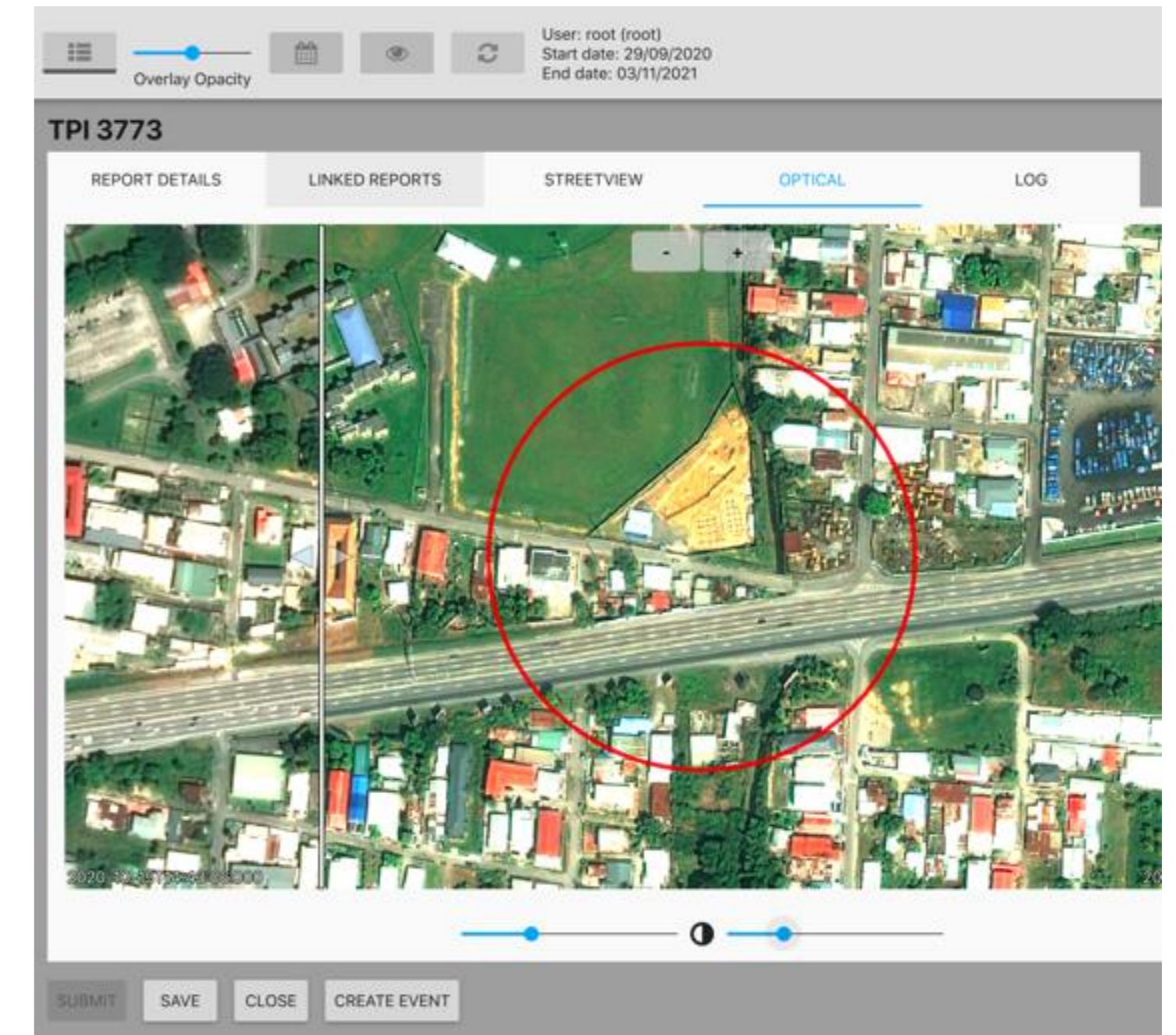




The CoSMiC-EYE application is available for tablets and desktop



Screenshots of the CoSMiC-EYE application showing high-resolution optical images of **before** and **after** an event was detected





Lessons Learned

Working with
Big Science

Lessons learned

Scientific content

- Interesting projects, relationship based
- Use SBIR's and ESA –BASS program's to bring technology to industry

Entry barriers

- Complex and extensive technical and organizational requirements
- Requirements to SME turnover and profitability.
- It takes time, investment and perseverance to find your way

Contract form

- Do not match today's way of working
- Agile working vs. V-model based FFP contracts
- Strong requirements to commercial rates vs project risks

Organizational overhead

- Long meetings with complex stakeholder structure and decision making.
- Heavy project management required



More info:

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