

Space 4 Critical Infrastructure - Banking & Financial Market Infrastructures

Online meeting, 13rd September 2022

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INSURANCE & FINANCE



The Ins&Fin market segment contains services and products provided and consumed by institutions and organisations in the insurance and financial service domains. This includes insurers and international and local financial institutions as private and commercial banks, stock exchanges or traders etc

Insurance for extreme events

- Event Footprint
- Index Production
- Risk Modelling

Legend

EO application

GNSS application

Synergetic application (combined use of EO and GNSS)

Finance

- Timing & Synchronisation for Finance
- Commodities Trading
- Risk Assessment

Current usage of Copernicus



Copernicus Services



Emergency
Management



Climate Change
(CCS)

Sentinels



Sentinel-1

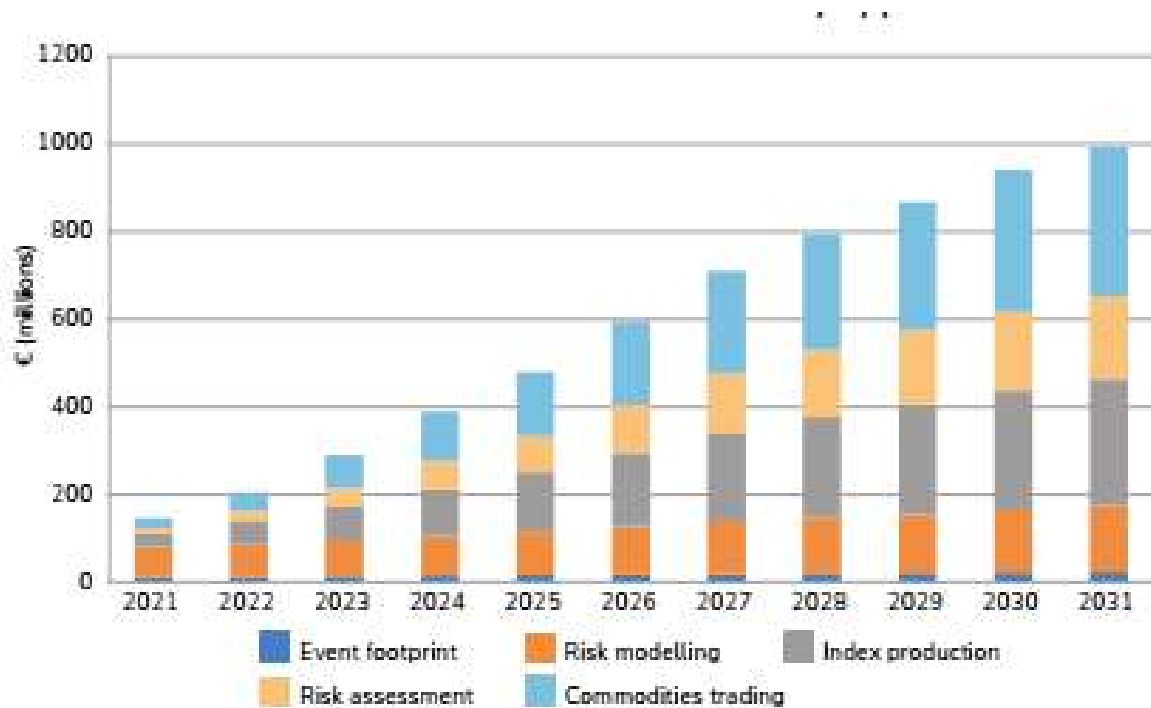


Sentinel-2

Both the Copernicus Sentinel data are particularly useful for risk assessments:

- ✓ Sentinel-2 images are used to collect environmental impacts and land classification data (e.g. farms detection) at high resolution with high revisit capability, or can be used for plant growth monitoring through the delivery of timely data on numerous plant indices (particularly useful for precision farming and agricultural insurance)
- ✓ Sentinel-1 radar capability is also an asset for monitoring extreme events as some of them are directly implying high cloud coverage (storms, floods and excessive rains).

Revenue from EO data & services sales by application

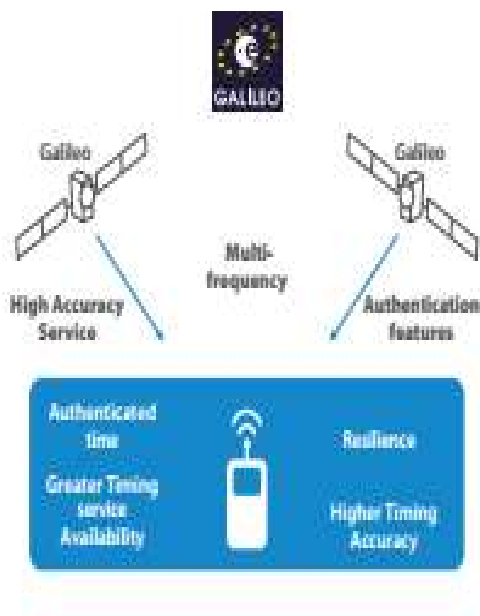


The total amount of **EO data and services for 2021 accumulates to €145m** across the five categories of applications.

From 2021 the EO services will see a **CAGR of 20% by 2031, resulting in almost €1bn total revenues**

The massive boost is related to the use of parametric insurance products in the context of disaster resilience frameworks as well as by commercial entities in areas with high exposure to extreme events at global level.

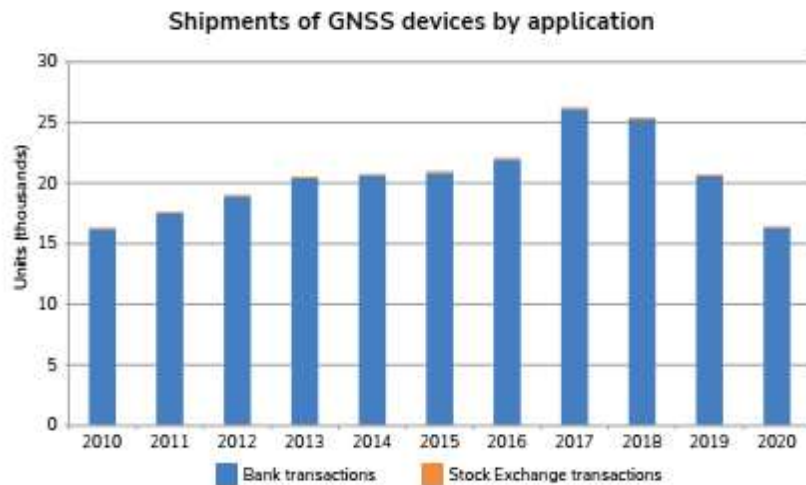
Current usage of GNSS



Galileo is integrated into GNSS Timing & Synchronisation devices to improve the availability and robustness of the overall Timing solution.

Implementing Galileo in multi-constellation products offers more reliability and accuracy of the timing solution with quantified integrity, multiple source comparison and versatile adaptive approach in mixing constellation and satellites.

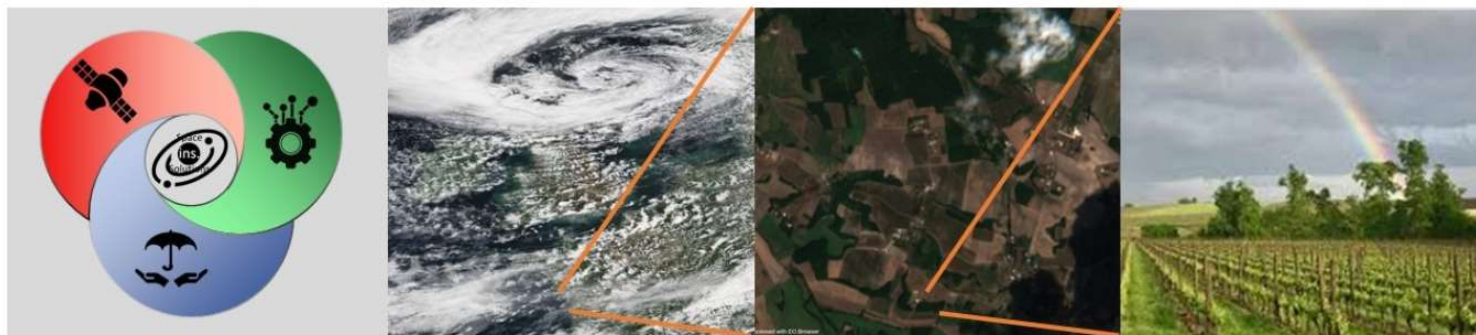
Shipments and revenues of GNSS devices by application



Insurance of extreme events: use case 1



- Space-Ins.-Solutions have developed a future looking **risk analysis solution** for insurers that delivers an innovative index of extreme events risk information.
 - The hail damage algorithms use Copernicus Sentinel -1 and -2 data to detect changes in agricultural fields and renewable energy assets. In combination with historical climate data and climate change modelling, this algorithm will form the foundation of their future climate change damage prediction model for extreme events.



*The
Space
Connection*



*Claims
Verification
Tool*



*Forward-looking
of Hail
Risk*

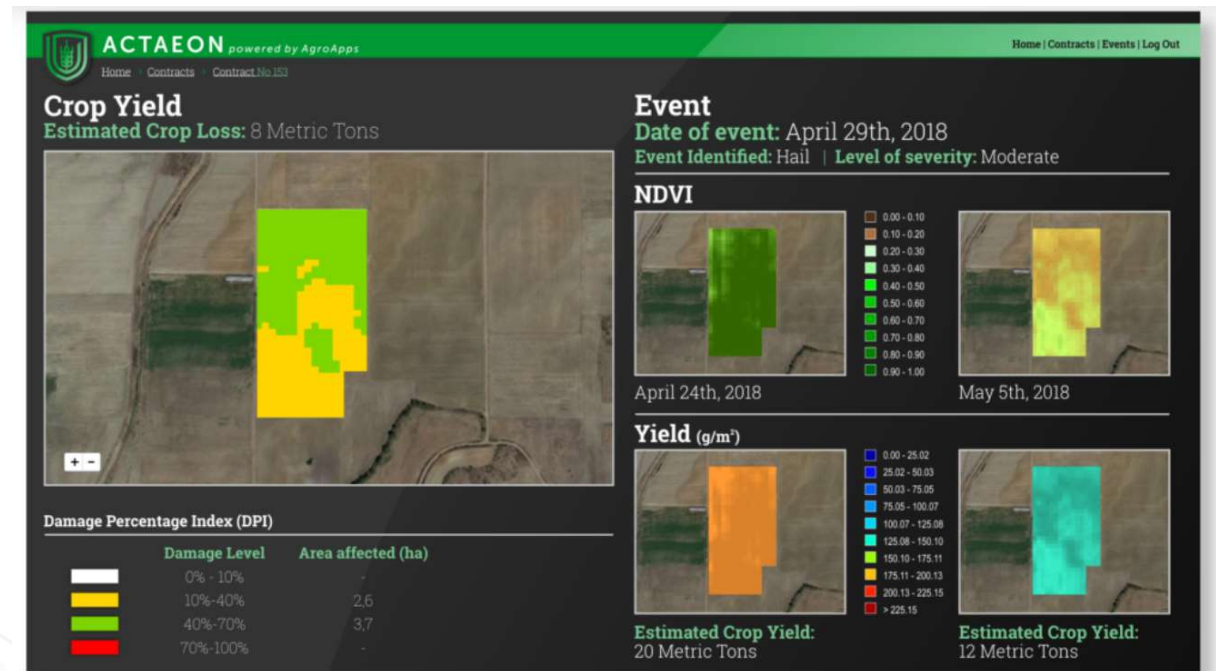


*Creating the right Index,
at the right Time, in the
right Location*

Agriculture insurance: Use case 2



- ACTAEON is a robust and cost-effective toolbox that allows agricultural insurance (Agi) companies to alleviate the effect of weather uncertainty when estimating risk.
- **ACTAEON reduces the number of on-site visits for claim verification, reduces operational and administrative costs for contract monitoring/handling,** and enables insurance companies to design more accurate and personalised contracts.



 **ACTAEON**

INSURANCE

Time stamping for transactions: Use case 3



- T&S solutions required for time stamping financial transactions
- Regulators require extremely precise time stamps for every transaction for
 - Accurate financial reporting
 - Eliminating fraud and assuring safe trades
 - Protecting consumer data from modification
- Hundreds of trillions of dollars of financial transactions per year in US alone
- **Financial services are currently shifting to GNSS-stamped precise time from atomic clocks**
- Future challenges are
 - Increasing resilience to Interference, Jamming
 - Providing Timing integrity
 - Increasing robustness to GNSS signal outages and anomalies

New 2014/65/EU (MiFID II) Directive

Article 4 of RTS25 states that *“Operators of trading venues and their members or participants shall establish a system of traceability to UTC”*



User Consultation Platform



The UCP is engaging with **other user communities**, industries, service providers and R&D, bringing together **expertise** and **insights** from different applications, sharing experiences, and strengthening an EU network of **innovators** by encouraging **cooperation** across broad disciplines

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Outcomes of the UCP are used to compile and update a series of **Reports on User Needs and Requirements** per market segment

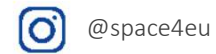




Linking space to user needs

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