



EARTH OBSERVATION

SENSOR DATA

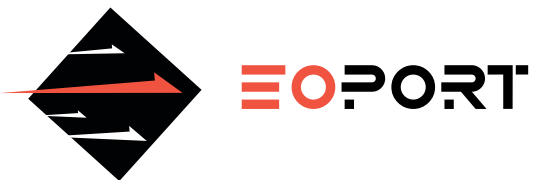
from space, on ground - NOW

01/07/2022



Børge Punsvik
Manager Business Development
Kongsberg Defence & Aerospace AS

NEAR REAL TIME EXPLOITATION PLATFORM



Near Real Time Exploitation Platform

Demonstration @ Living Planet Symposium 2022



KONGSBERG



Operates a world leading Global Ground Station Network

- more than 260 antennas across 25 sites
- decades of experience providing reliable access to multi-mission data and value-added services in NRT
- provides access to the single largest portfolio of SAR and optical satellites

MEOS™ systems delivered and operational world-wide

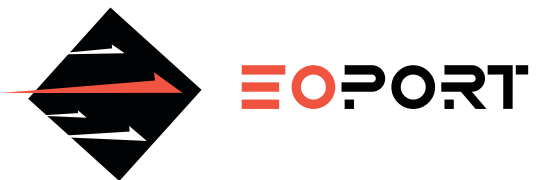
- ESA – DFEP systems operational in Copernicus Core Ground Segment
- NASA - JPSS Ground Segment
- EUMETSAT EPS Ground Segment, EPS-SG Ground Segment, EARS network

Trusted European cloud

- Open Telecom Cloud – complying with all data privacy and security requirements
- Integrated, highly scalable and automated billing service
- Deep knowledge of EO user community and business (Copernicus HUB, DLR, Mundi DIAS)

Making imagery accessible

- online marketplace development, operations and management
- satellite imagery expertise (planning, ordering, sensor capabilities)
- EO market expertise, partner and supplier management



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SPONSOR

Generic PDGS
eo science for society



KONGSBERG

con•terra



CONSORTIUM

EOPORT
consortium and project members



AIRBUS

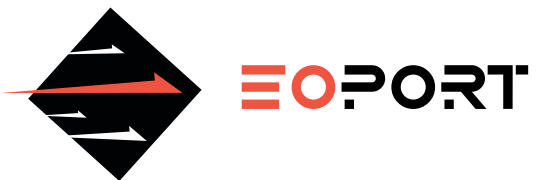


Deutsches Zentrum
für Luft- und Raumfahrt
German Aerospace Center



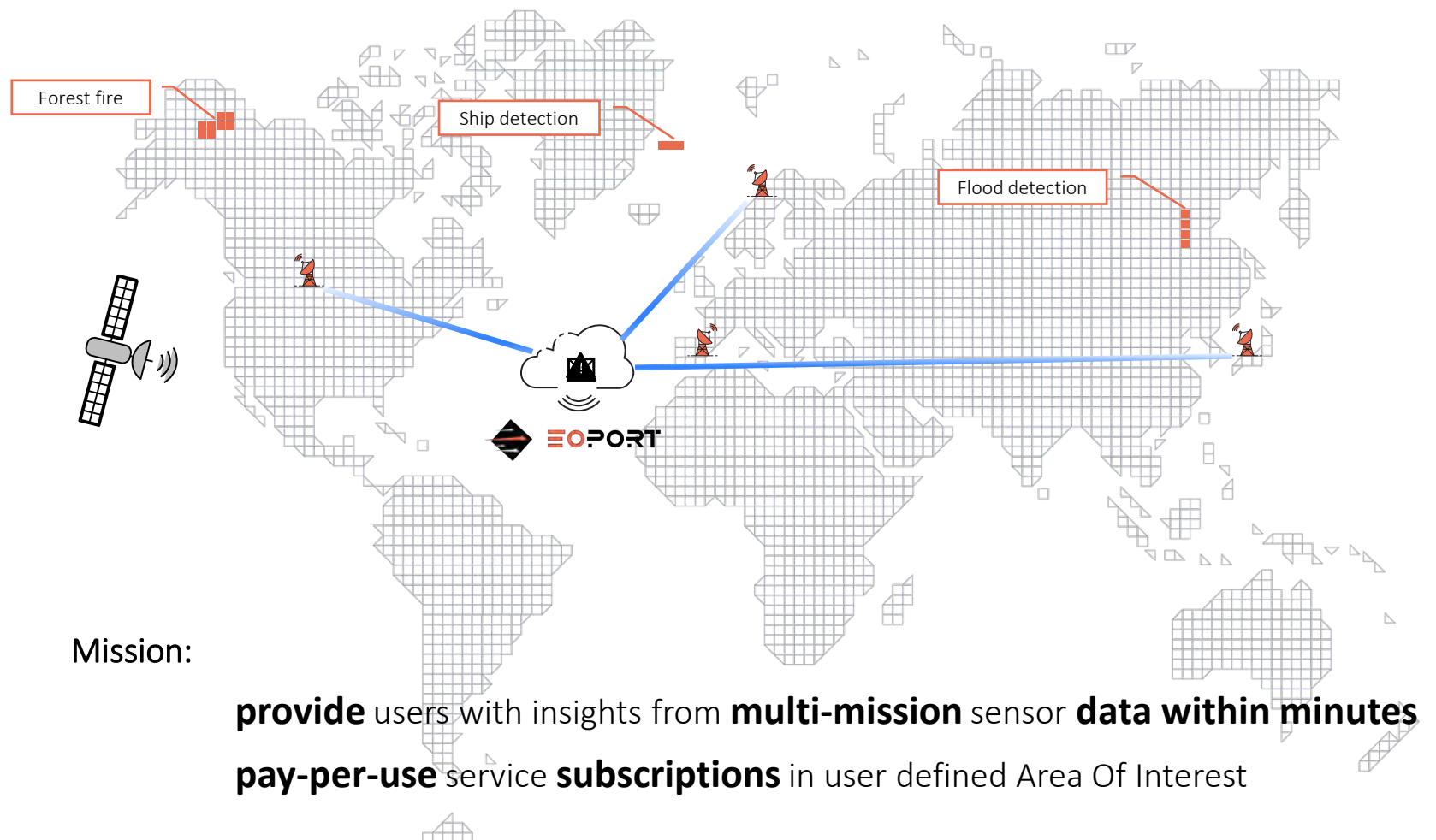
SUPPORTING

INDUSTRY
with support letters



EO NRT Exploitation Platform

The concept



Mission:

provide users with insights from **multi-mission** sensor **data within minutes**
pay-per-use service **subscriptions** in user defined Area Of Interest



Near Real Time Exploitation Platform

The concept

Timeline – Traditional pipeline

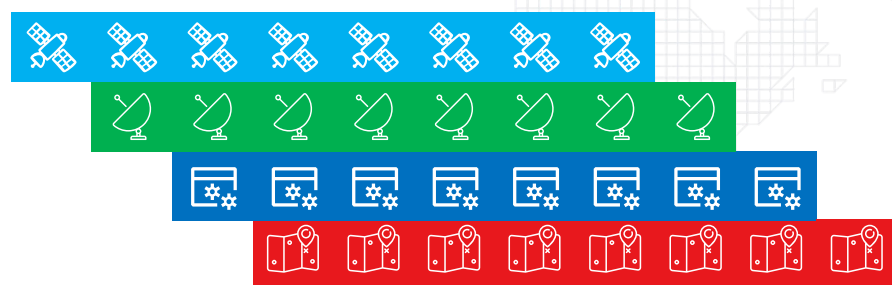


Near Real Time Exploitation Platform

The concept

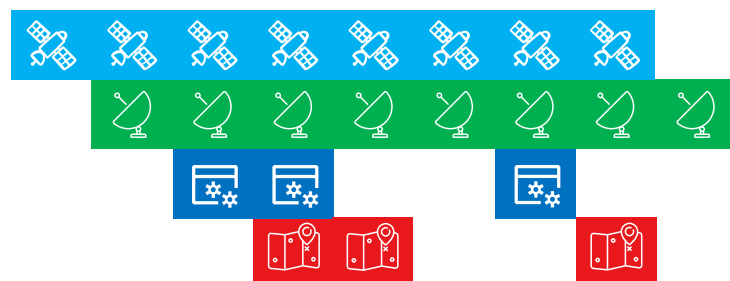


Timeline – Raw data streaming in chunks



Start processing sooner
Parallel optimization
Leverage on IaaS

Timeline – AOI centric processing



Process in NRT what is needed
Minimize resource consumption
Deliver results faster

Near Real Time Exploitation Platform

Area Of Interest centric production model



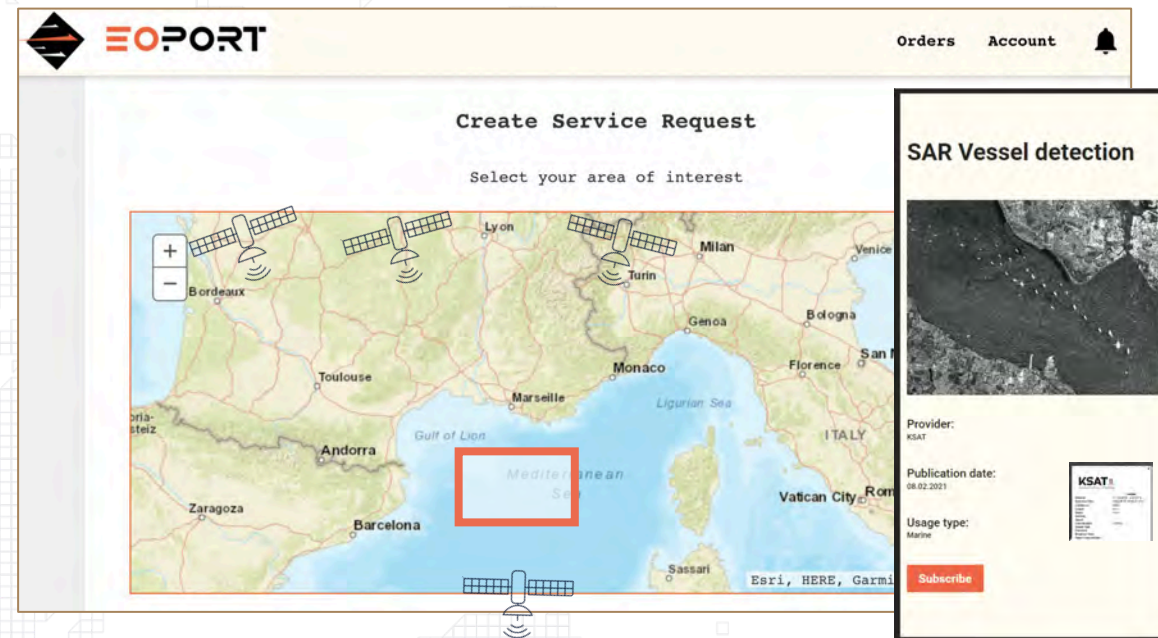
Authenticated
end-user



- Select service
- Set AOI
- Subscribe
- Get results
- Pay invoice



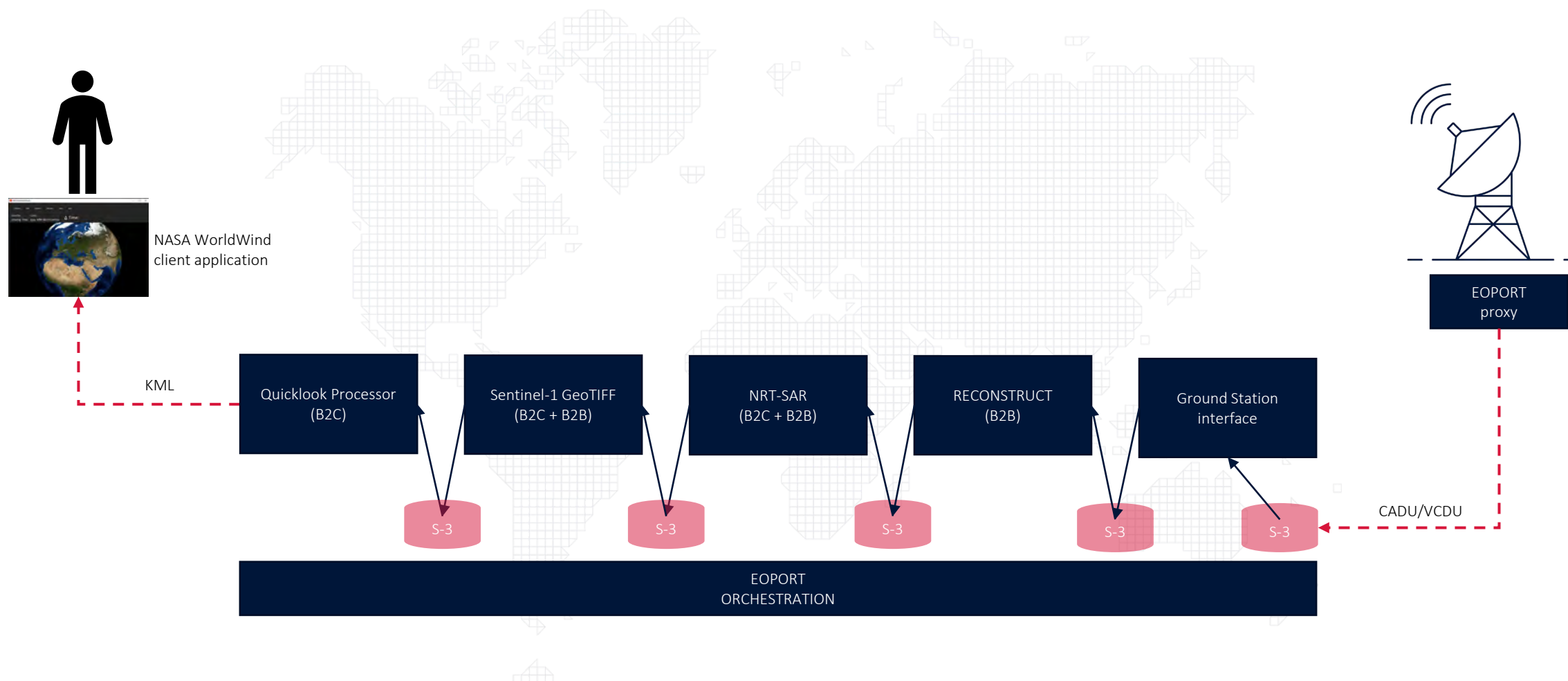
User receive service output when data match AOI, repeatedly throughout subscription period

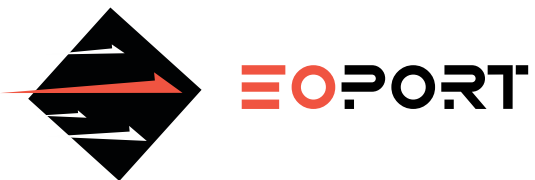


Service Provider “hands-off”.
EOPORT activate automatically services needed when data match AOI

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Sentinel-1 visualisation and demonstration





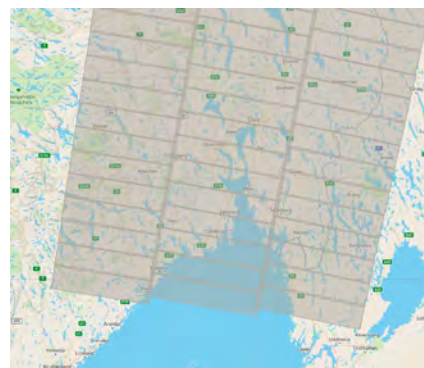
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EOPORT production in parallel to data acquisition at ground station



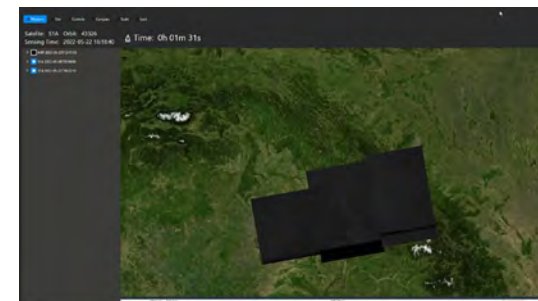
SENTINEL-1 CHUNKS

VCDU: 2s chunks from GS (200MB)
ISP: 1s chunks (70MB) – full swath
SAR: 1s tiles (60MB) – 1/3 swath (IW)
GeoTIFF: 1s (30 MB) – 1/3 swath
QuickLook tiles: 1s (300KB)



SOME MORE FIGURES

Internet bandwidth from KSAT to EOPORT
Theoretical: 1Gb/s, in real.: 0,2-0,3 Gb/s
Cloud: 2 * 4 core/8GB + 32 core/64GB
QL subsampling 4x4 i.e. 1/16 resolution

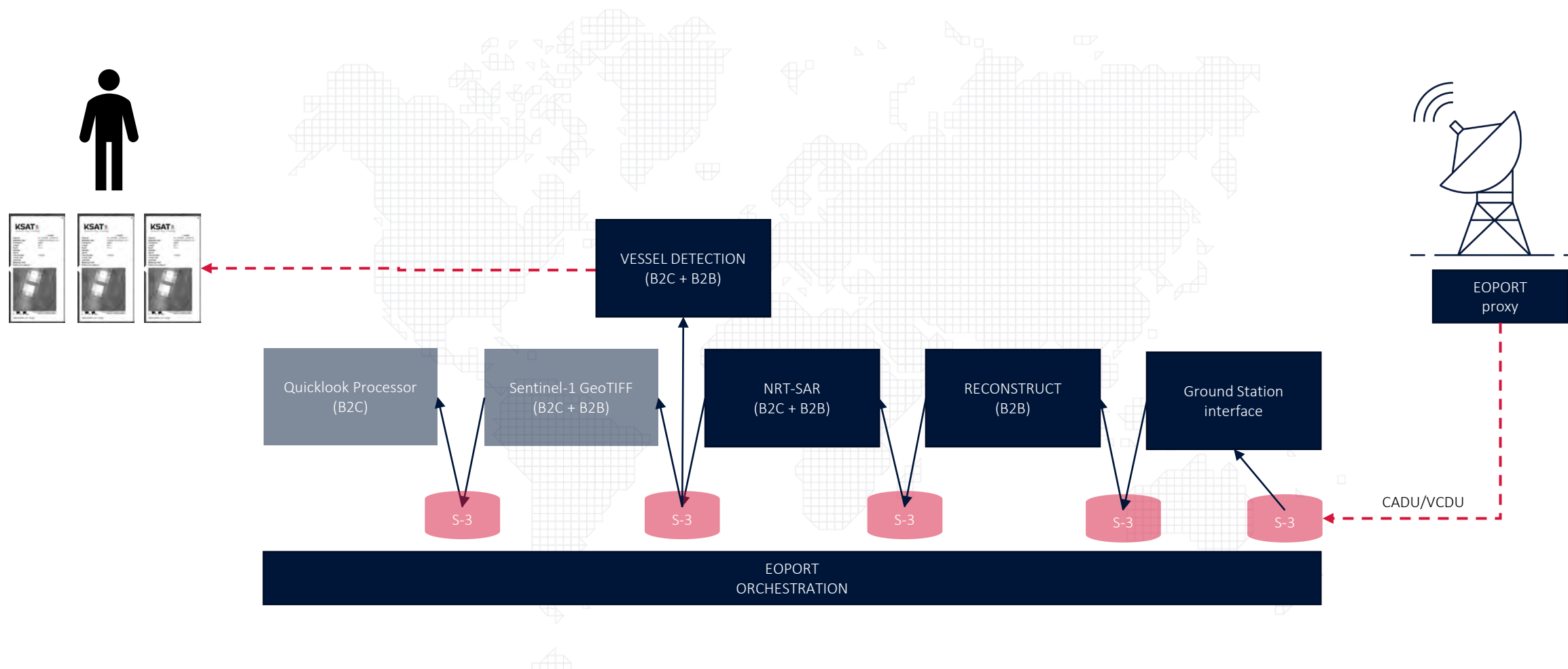


NEAR REAL TIME

KML formatted Sentinel-1 data visualized
in client application (NASA WorldWind)
Image blocks displayed only minutes after
sensing time while data is still acquired at
the ground station

Near Real Time Exploitation Platform

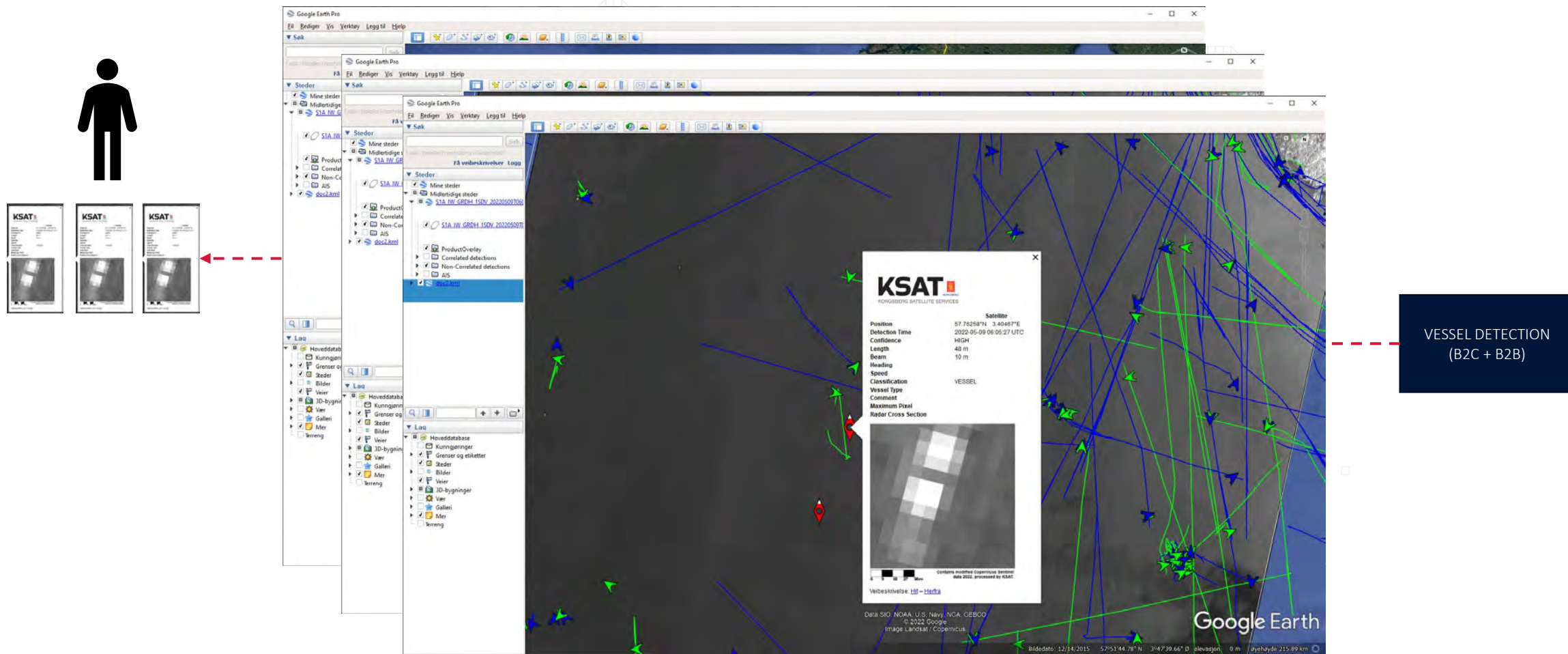
Sentinel-1 VESSEL DETECTION





Near Real Time Exploitation Platform

Sentinel-1 VESSEL DETECTION

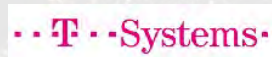


VESEL DETECTION
(B2C + B2B)



EOPORT

Earth Observation Near Real Time Exploitation Platform



Near Real Time Exploitation Platform

Your place to access
future data