

SATELLITE'S COOPERATION TO IMPROVE RESPONSE TIME

19TH OPEN SESSION OF UN-SPACE

EARTH OBSERVATION AND INTEGRATED APPLICATIONS FOR DISASTER RISK
MANAGEMENT AND SUSTAINABLE DEVELOPMENT

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IRIDE ITALIAN CONSTELLATION

/// IRIDE is the new Italian constellation composed by multisensors' satellites (SAR, Optical, Hyperspectral, TIR)

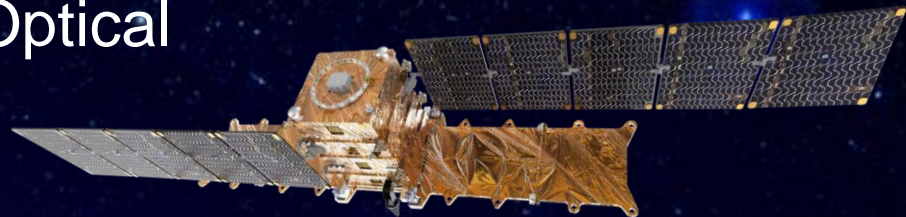
/// IRIDE will be developed thanks to the Italian Government Investments through the Next Gen EU Italia – Piano Nazionale Ripresa e Resilienza (PNRR)



IRIDE ITALIAN CONSTELLATION

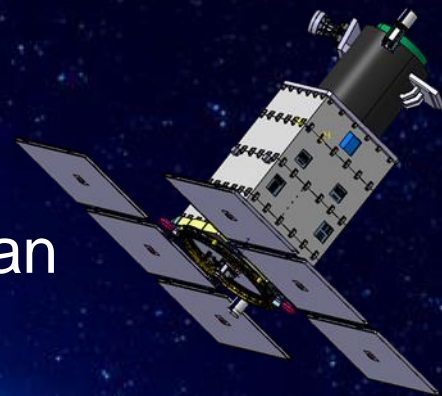
NIMBUS SATELLITES

///Thales Alenia Space Italia is involved in the development of the SAR and Optical Constellations



///6+4 NIMBUS SAR Satellites (HRRevo)

///1+1 NIMBUS VHR Satellites (embarking Italian partner's P/L)



IRIDE - NIMBUS SATELLITES

CONSTELLATION DESIGN

/// IRIDE NIMBUS constellation designed to have the best revisit time and flexibility



CAPACITY

Collection of large data volumes



FLEXIBILITY

Flexible mission design, suitable for inclined orbits, optimizing the surveillance of the area of interest



REVISIT

Very high revisit with a large constellation deployment



RESPONSIVENESS

Very high response time with a large constellation deployment



IRIDE – NIMBUS SATELLITES

NEW FUNCTIONALITY

- /// NIMBUS satellites embark the Optical Inter Satellite Link (OISL) and has been configured to possibly embark a dedicated High Power Computing (HPC) system
- /// With the above features NIMBUS satellite is ready to enable on-board image processing and direct downlink of the processed images.

Integrated technologies for disaster risk management

IRIDE – NIMBUS SATELLITES

OPERATIVITY IN CONSTELLATION

/// NIMBUS architecture is conceived to embark functionalities to enable the cooperation among satellites to minimize the end-to-end downlink time and to improve the response time

/// How?

! by downlinking only data processed on board with interesting features or

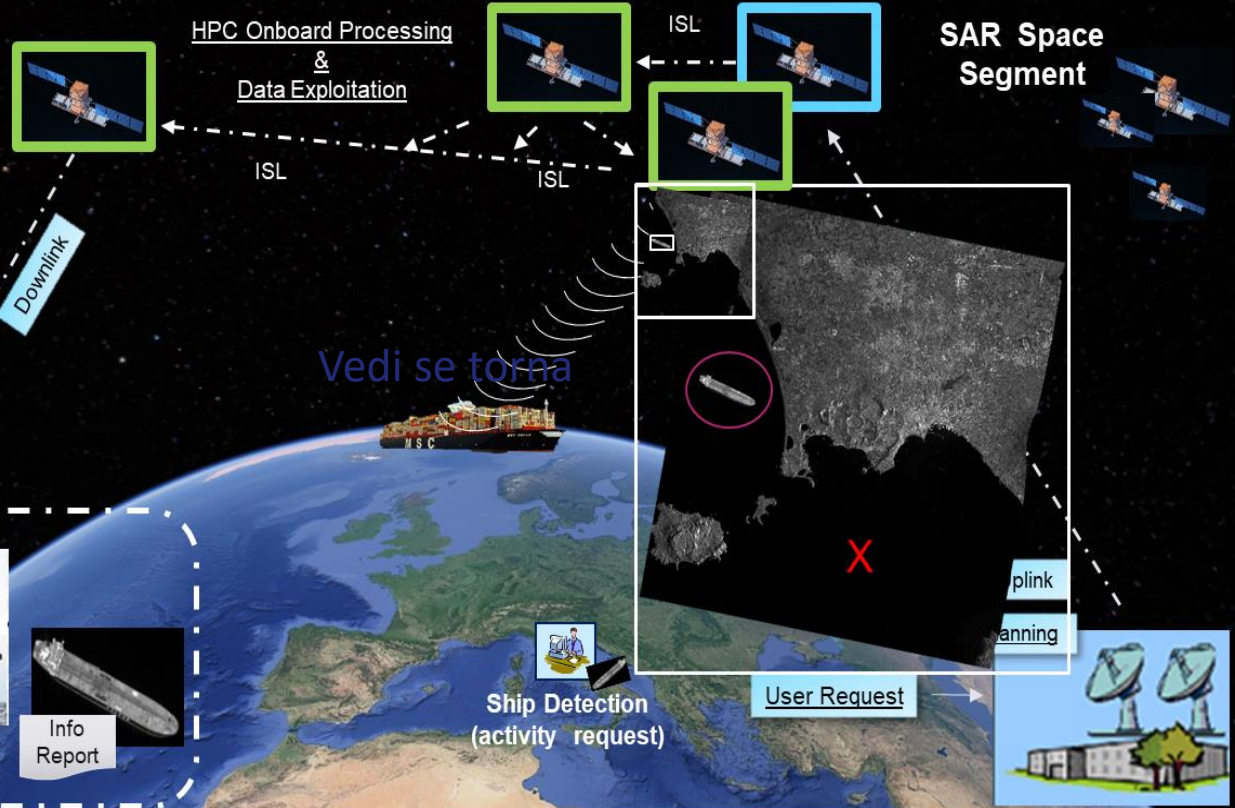
! directly a smart info (e.g. report about presence of target)

to support early alert and fast decision making process

IRIDE – NIMBUS SATELLITES

OPERATIVITY IN CONSTELLATION

- ISL enables tasking for best sensing in terms of constellation visibility
- ISL and HPC enables satellite cooperation
- HPC by on board image processing allows direct processed image downlink to final user (GS or Smart Receiver)
- Bandwidth reduction
- Processed image
- Info Report



GRAZIE PER L'ATTENZIONE

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