

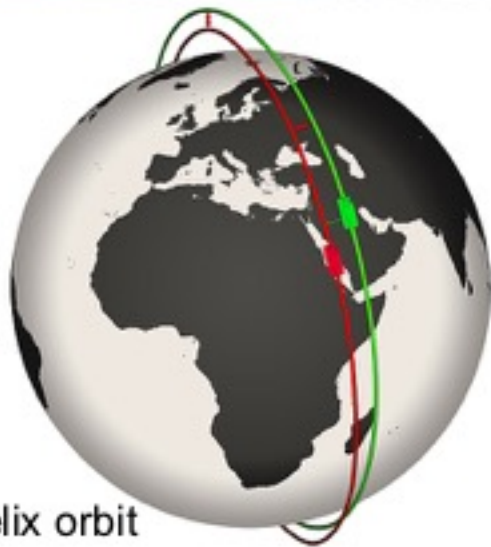
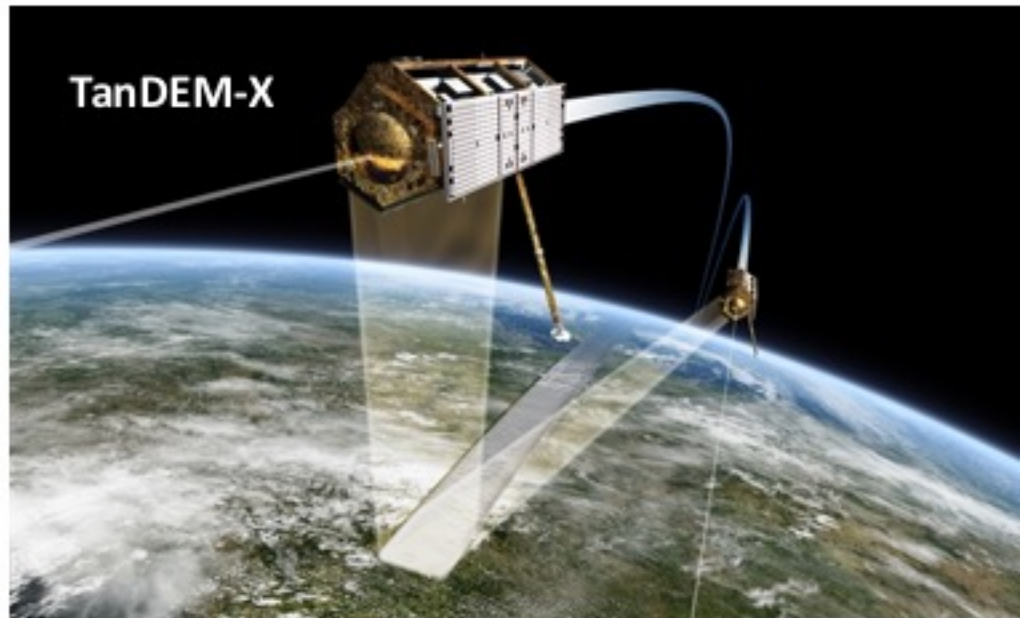
# Near-real time (NRT) imaging service of TerraSAR-X and TanDEM-X radar satellite data by the German Aerospace Center (DLR)



TerraSAR-X



TanDEM-X



Helix orbit

**DLR – German Aerospace Center**

German Remote Sensing Data Center Oberpfaffenhofen

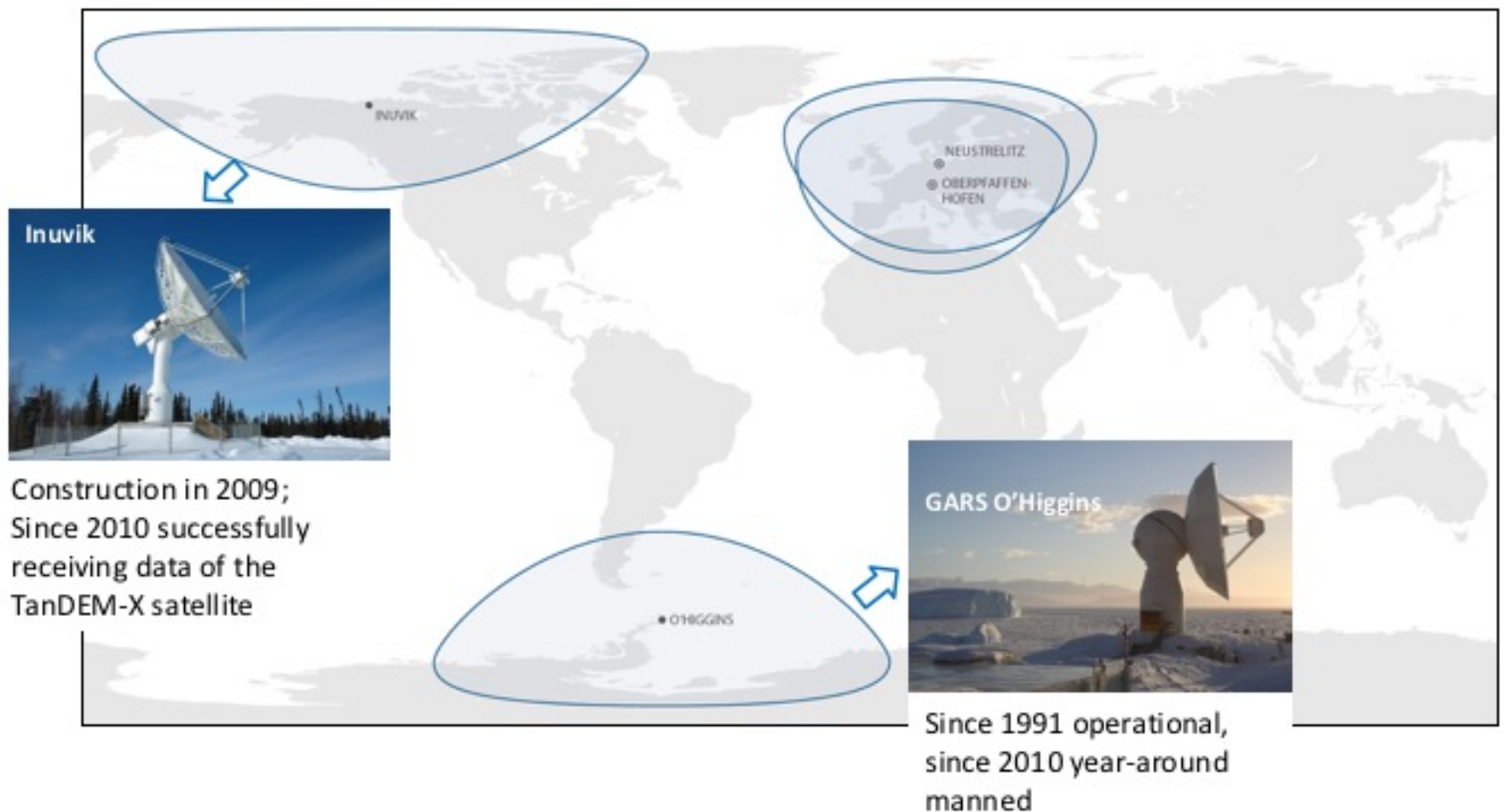
82234 Wessling, Germany

Contact: Kathrin Höppner [kathrin.hoepfner@dlr.de](mailto:kathrin.hoepfner@dlr.de)



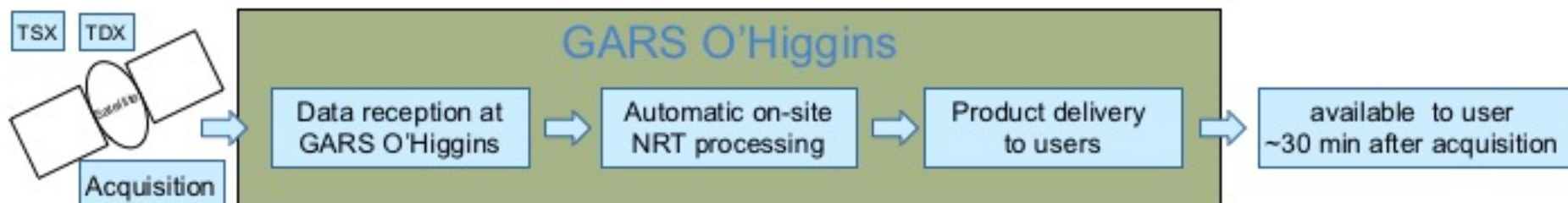
# Ground Station Network of the DLR

DLR's German Remote Sensing Data Center operates an international ground station network in Germany, the Canadian Arctic and the Antarctic Peninsula for the reception of satellite data.



# Near-real time (NRT) acquisition, reception and processing of TerraSAR-X data at GARS O'Higgins

Processing chain for supporting research vessels in Antarctica



- Satellite radar (SAR) data independent of time of day and cloud coverage
- Products (e.g. TerraSAR-X geocoded L1b products) are tailored for needs of research vessels (e.g. location of the satellite scene, acquisition time, acquisition mode); only restricted by orbit geometry of satellite
- Preferred NRT TerraSAR-X modes:
  - ScanSAR mode → swath 100 km, resolution 18 m
  - Stripmap mode → swath 30 km, resolution 3 m

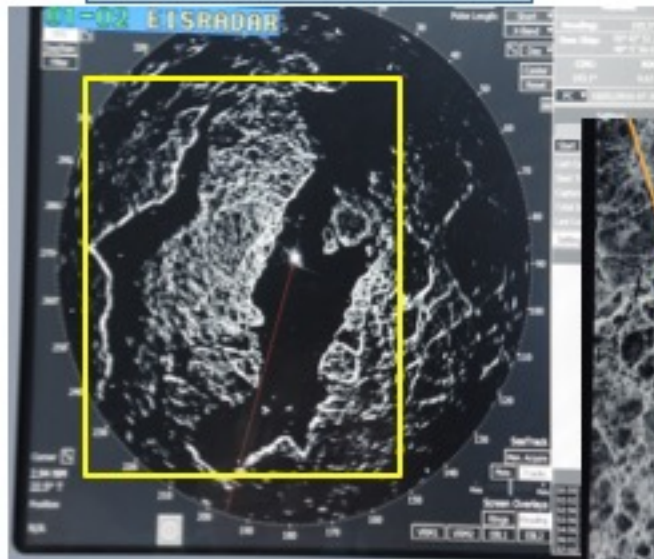


# Pilot studies for campaign support

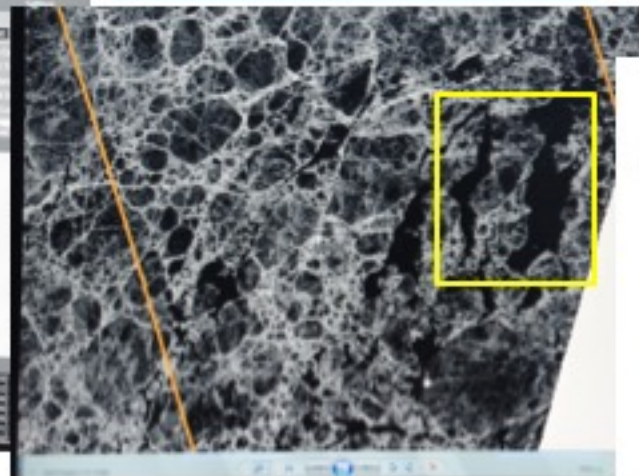
## Antarctica/GARS O'Higgins: Support of German RV *Polarstern* in Jan/Feb 2016

- NRT delivery of TerraSAR-X products up to twice per day
- Information was available at the ship 30-60 min after raw data were acquired from satellite

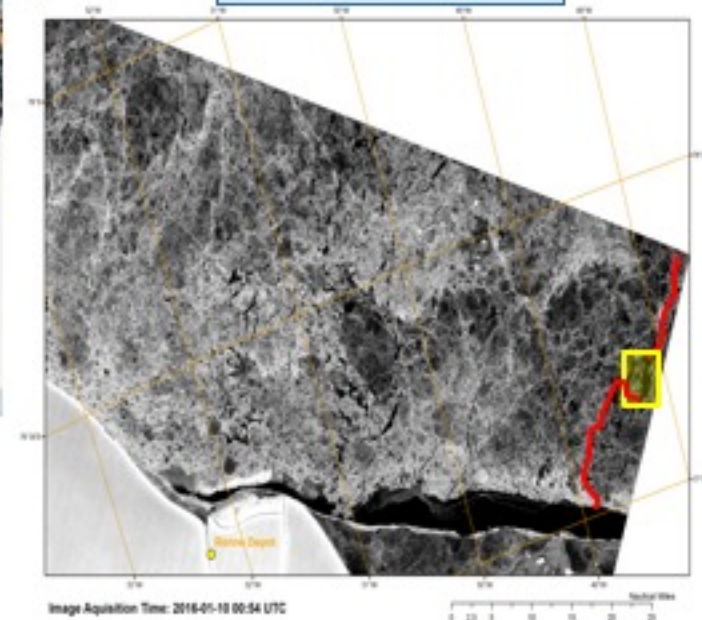
Ice radar on board  
RV *Polarstern*



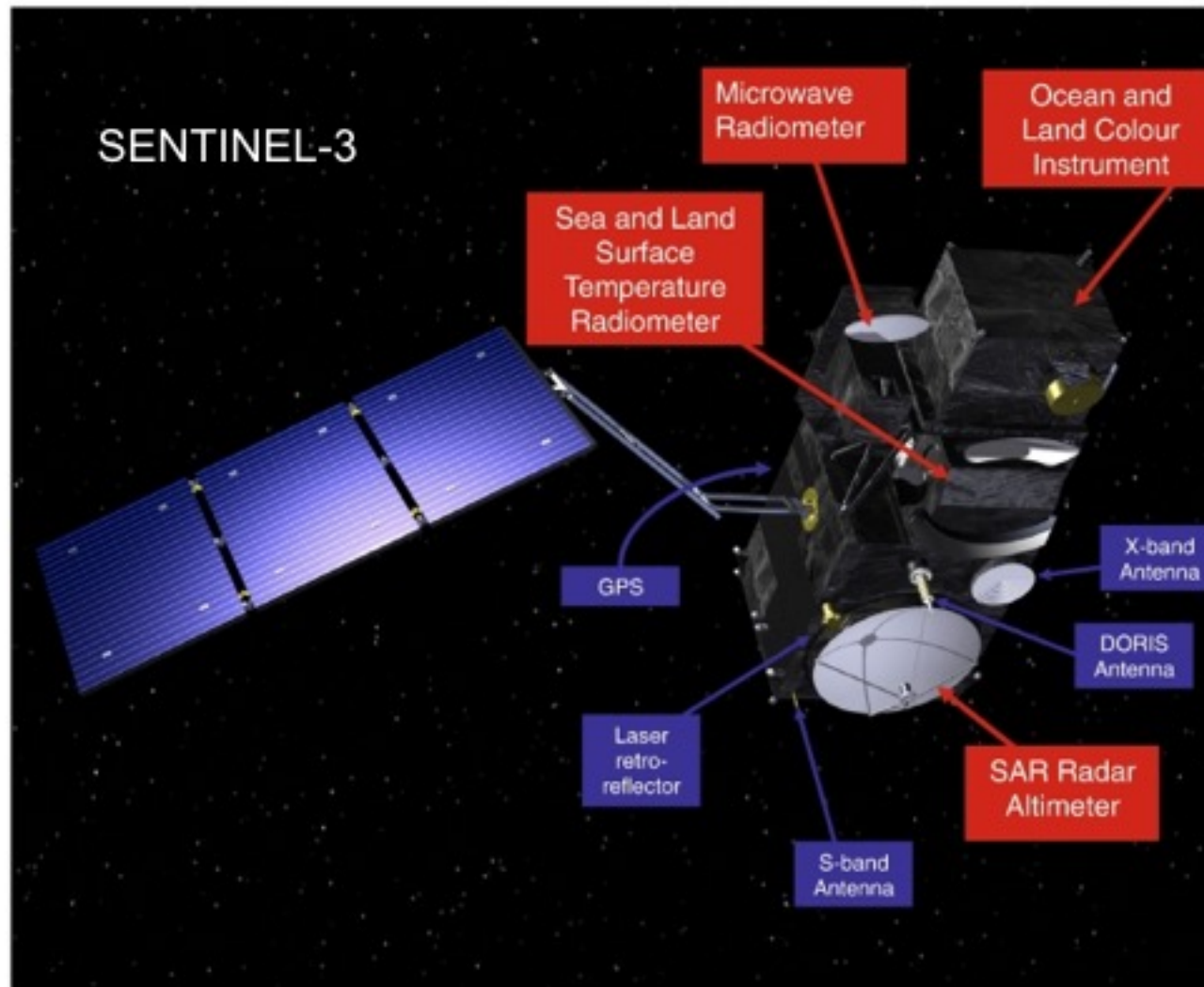
Geocoded TerraSAR-X  
L1b product of DLR



Improved route  
planning



# SENTINEL satellite Earth observation missions of the European Space Agency (ESA)



- 2 satellites currently in orbit (polar-orbiting)
- More will be launched in 2016 (Sentinel-3) and 2017
- SAR altimeter data can also be added for near-realtime processing
- about 20 m resolution