# EUMETSAT REPORT FOR GHRSST

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GHRSST Science Team Meeting
20-24 July 2015
ESA-ESTEC, The Netherlands

# Oceanography at EUMETSAT

Sea Surface Temperature

Sea surface winds

Sea-ice products

Radiative fluxes

Significant wave height

Sea surface topography

SSIST/MIZT

Ocean Colour products

Turbidity

Aerosol optical depth over water

The EUMETSAT Network of Satellite Application Facilities

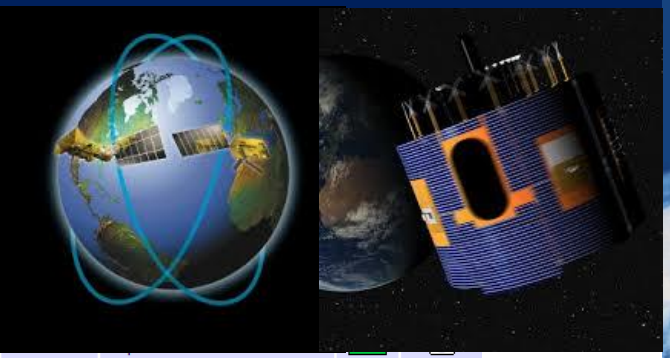
OSI SAF
Ocean and Sea Ice

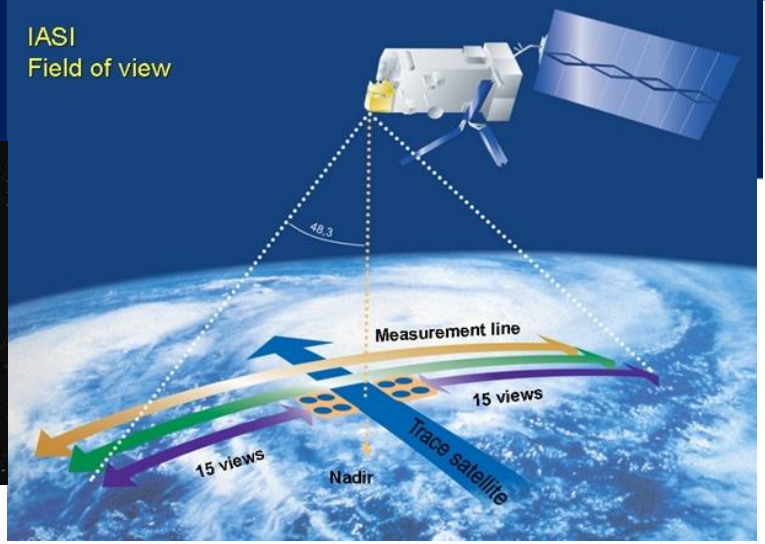
- Operational data provider
- Weather, climate, ocean, atmospheric composition
- Mandatory, Optional and Third party programmes
- EUMETSAT Ocean and Sea Ice Satellite Application Facility

# Introduction (SST missions)

- Most recent launches:
  - MSG-4 (15th July 2015)
  - Metop-B (17th Sept 2012)
- Planned 2015 launches:
  - Copernicus Sentinel-3 (SLSTR): 31st October 2015
  - [Jason-3 (Optional programme): August 2015]
- Future:
  - Metop-C (AVHRR, IASI): ~2018
  - EPS-SG (MetImage, IAS): ~ 2020
  - MTG-I1 (FCI): ~ 2018
  - MTG-S1 (IRS): ~2020

# Main activities







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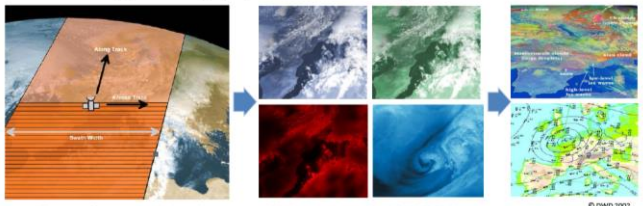
|---|---|---|---|
| SST | NHL SSIST | | |
| | GLB SST | | |
| | NAR SST | | |
| | MGR SST | | |
| | IASI SST | | |
| | METEOSAT SST | | |
| | GOES-E SST | | |
| Radiative Fluxes | AHL DLI | | |
| | AHL SSI | | |
| | METEOSAT DLI | | |
| | METEOSAT SSI | | |
| | GOES-E DLI | | |
| | GOES-E SSI | | |
| Sea Ice | Global Sea Ice Concentration | | |
| | Global Sea Ice Edge | | |
| | Global Sea Ice Type | | |
| | Low Resolution Sea Ice Drift | | |
| | Medium Resolution Sea Ice Drift | | |
| | Global Sea Ice Emissivity | | |

Ope. Pre-ope. Demo.
Degraded Outage

opernicus

- METimage is a scanning optical imaging radiometer for applications in meteorology, oceanography and land monitoring.



- Recording a gapless image with large swath of 2.700 km (one-day overall earth coverage)
- Multispectral radiometry in 20 channels (VIS/NIR/SWIR/IR)
- Ground resolution of (500 m)² and (250 m)²
- Strong improvement wrt AVHRR and comparable to VIIRS

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OSI SAF
Ocean and Sea Ice

felyx
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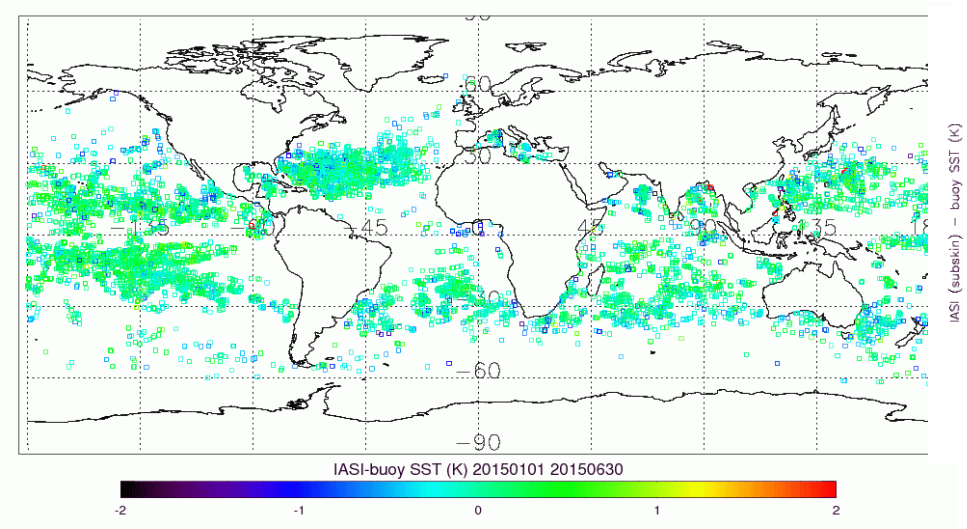
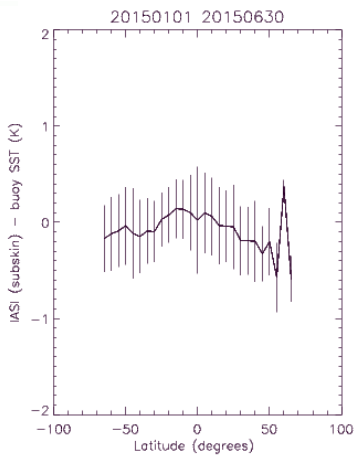
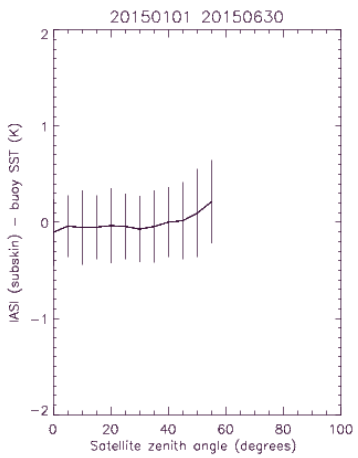
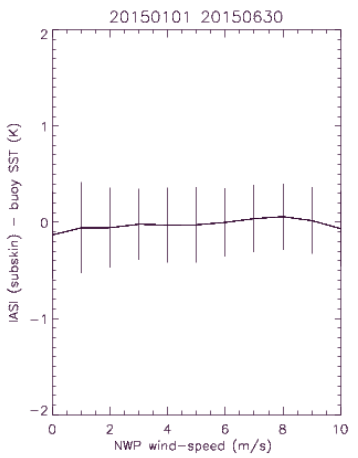
# Main activities (Metop-A and Metop-B IASI SST)

- New retrieval and SSES (30th September 2014)
- Reduced cool bias and standard deviation using 1D-Var clear-sky retrieval




Plans for 2015/2016:

- Improved aerosol detection and flagging (using study with UoL on IASI/AATSR collocated datasets).
- Validation of uncertainties and improvements in product uncertainties

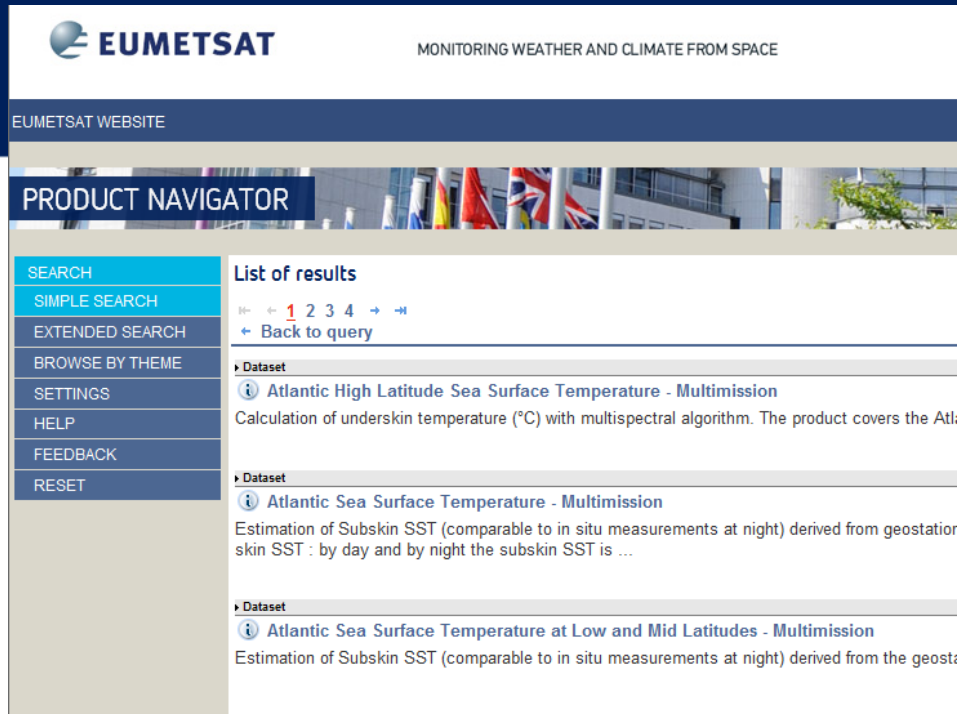
# Main activities (sea-ice surface temperature)

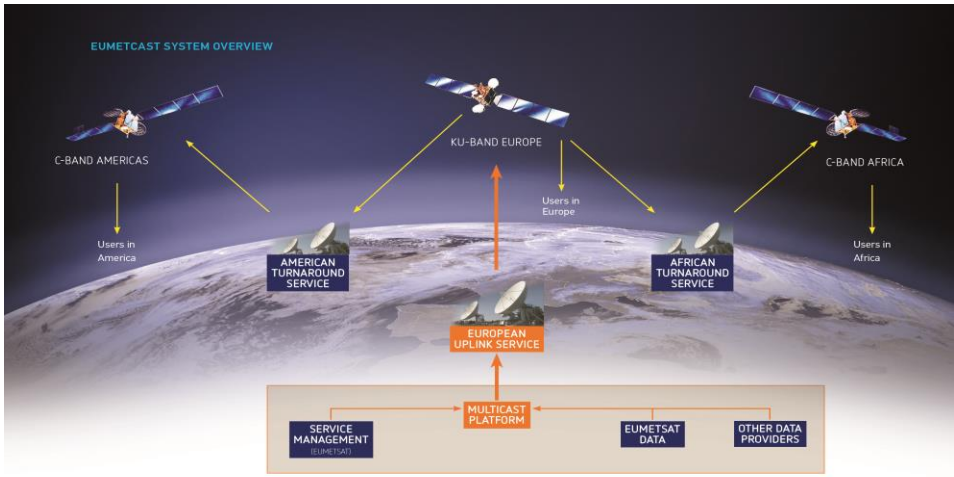
- SLSTR: Sea-ice surface temperature
  - Cloud-screening (2016)
  - Validation and retrieval (2017)
  - OSI SAF prototype processor (CDOP-3 subject to review process)

- IASI: Ice Surface Temperature
  - Assessment of in situ dataset and validation of current L2
  - Towards IST product from IASI

# Data availability

- Level-1 from EUMETSAT data centre (www.eumetsat.int)
- EUMETSAT OSI SAF for Level-2 products (www.osi-saf.org) & EUMETCast
- IASI SST operational full L2P GDS2 (28th May 2015), available from OSI-SAF and EUMETCast: Metop-A only
- Metop-A and Metop-B L2Pcore IASI SST remain available from EUMETSAT data centre
- Copernicus Sentinel-3 marine data from EUMETSAT data centre & EUMETCast
- Sentinel-3 data availability from ~April 2016 (L1 and ramp-up of L2 to full operations)



# Data availability - third party data

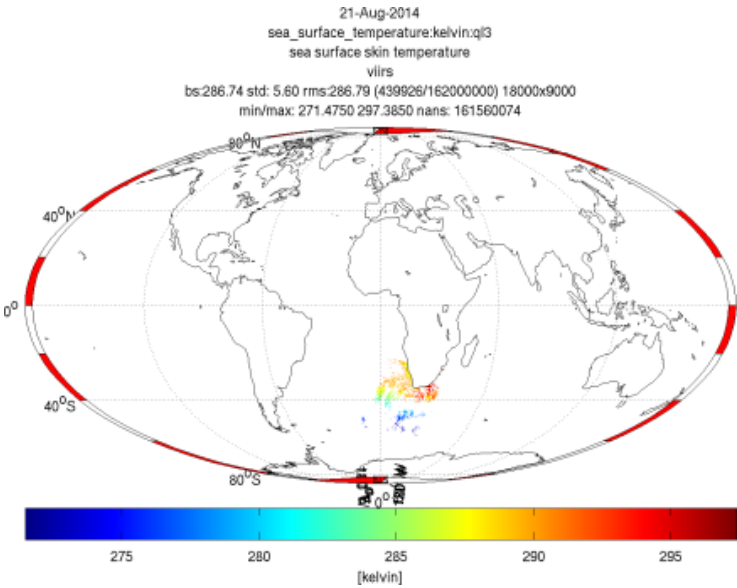
Third party data re-distribution (NOAA, JAXA, ISRO, NSOAS, SOA):

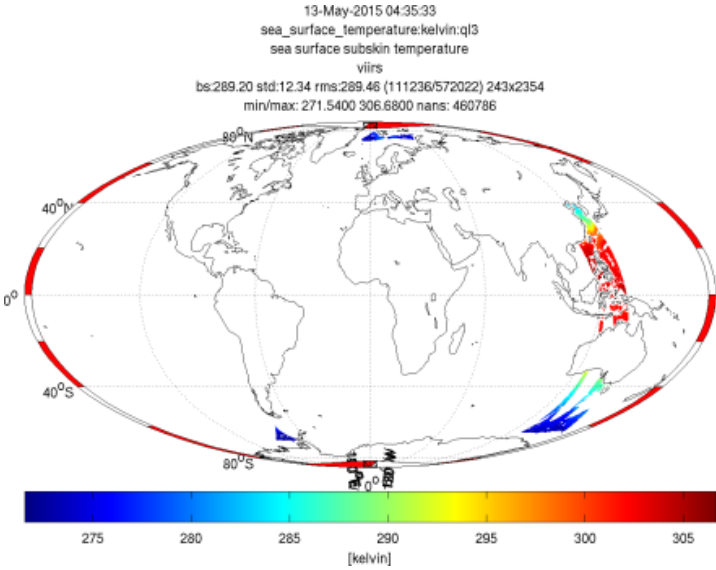
- S-NPP VIIRS ACSPO (v2.4): 2014-
  - VIIRS L3U operational through EUMETCast
  - Updated from L2P to L3U service

- GCOM W2 AMSR2 GHRSST L2P: 2015-
  - Demonstrational service to EUMETSAT member states in NRT
  - L2P from 19th May.
  - Meeting at EUMETSAT on 9th September

- INSAT-3D going through final approval for dedicated service. Expected to be operational to all on EUMETCast by late summer (L2 SST in hdf).

- Receiving continuous data stream of HY-2a L2 data



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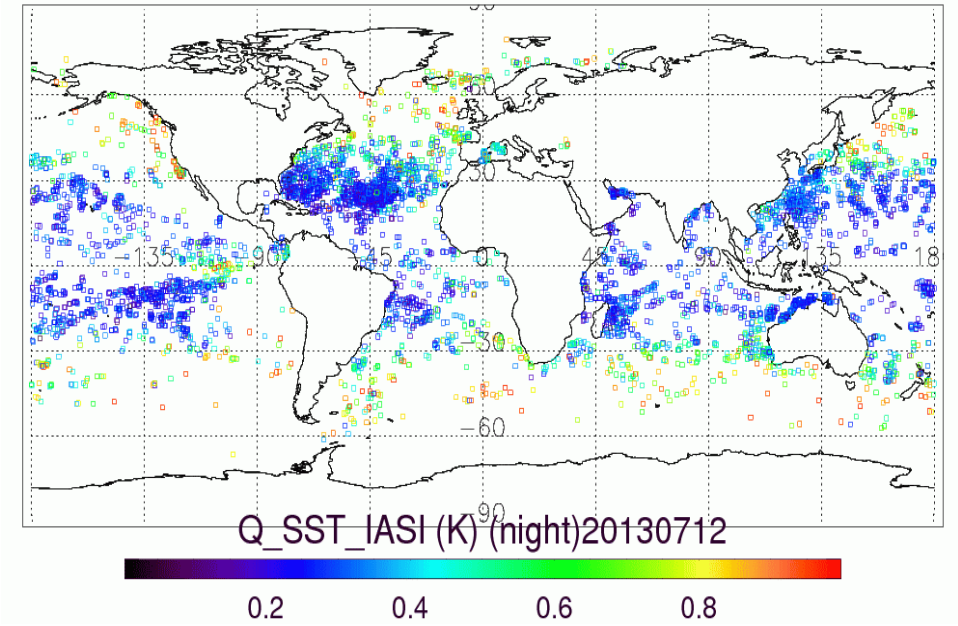
# Issues / questions

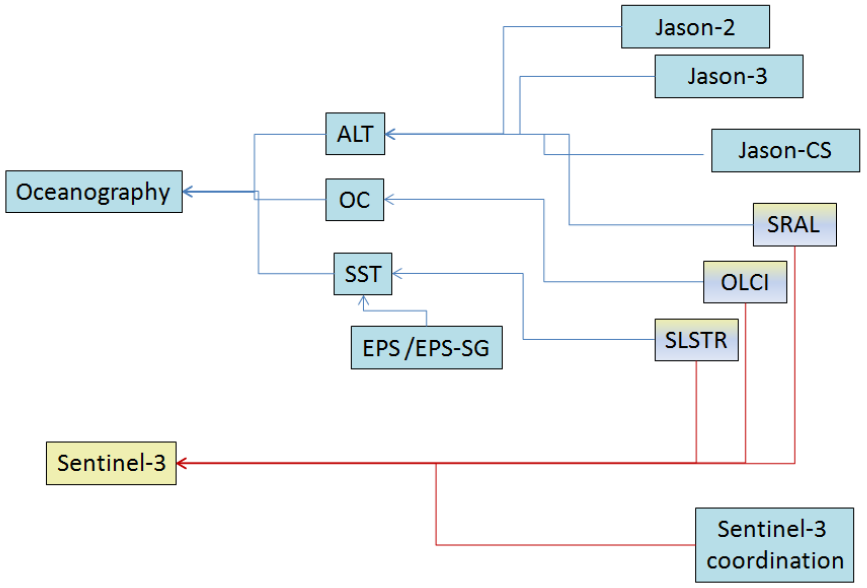
- Representation of product uncertainties
- Ice Surface Temperature / Lake Surface Water Temperature
- R/GTS – R & GDAC's



# EUMETSAT – Marine Applications

## Marine Meteorology & Oceanography,

## Remote Sensing and Products Division




## Ocean Team / Sentinel-3 science:

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*Sentinel-3 SST Consultancy*

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Carolina Loddo (S3 Product Operations)

Michael Grzegorski (Copernicus atmosphere)

# Thanks