



OSISAF CDOP 3 Product Requirement Document

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Prepared by Meteo-France, Ifremer, MET Norway, DMI and KNMI



Royal Netherlands
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Environment*

Document Change record

| Doc. version | Date | Author | Change description |
|--------------|------------|--------|--|
| 0.1 | 13/04/2017 | CH | <p>First version based on CDOP 3 proposal, version 2, March 2016. Following updates have been done :</p> <ul style="list-style-type: none"> • CDOP 2 products finally not operational in CDOP 2 and operational CDOP2 products which have not been superseded have been added to this CDOP 3 PRD : OSI-203, OSI-203-a, OSI-205, OSI-301, OSI-302, OSI-402-b, OSI-403-b, OSI-405-b, OSI-409, OSI-409-a <p>Note : OSI-401-c was included in OSI-401-b during CDOP2 (Decision OSI-CDOP2-SG09-22). There is no OSI-401-c planned any more. Next update will be OSI-401-d.</p> <ul style="list-style-type: none"> • Timeliness for MTG products has been corrected according to RR (July 2014) : OSI-206-b, OSI-303-b, OSI-304-b • OSI-402-c accuracy was updated according to last version of CDOP 2 PRD (OSI-DCR-2016-018 v1.0 approved by SG on the 04/11/2016) • OSI-408, OSI-430, OSI-450 V&V methods were updated according to last version of CDOP 2 PRD (OSI-DCR-2015-024 version 1.1 approved by SG on the 31/01/2016) • OSI-408-a, OSI-430-a methods were updated accordingly • OSI-109-a, OSI-109-b (RapidScat winds with 2h timeliness) removed • OSI-109-c, OSI-109-d (RapidScat winds with 3h timeliness) pointed out as “archived NRT” products • OSI-150-a (and OSI-150-b) already exists in CDOP 2 PRD → OSI-150-a (CDOP 3 proposal) replaced by OSI-150-c and OSI-150-d (in CDOP 3 PRD) • OSI-151-a (and OSI-151-b) already exists in CDOP 2 PRD → OSI-151-a (CDOP 3 proposal) replaced by OSI-151-c and OSI-151-d (in CDOP 3 PRD) • OSI-153-a (and OSI-153-b) already exists in CDOP 2 PRD → OSI-153-a (CDOP 3 proposal) replaced by OSI-153-c and OSI-153-d (in CDOP 3 PRD) |
| 0.2 | 19/04/2017 | CH | <ul style="list-style-type: none"> • Corrected definition of timeliness • OSI-410-a (planned update of OSI-410) added • Addition of sea ice probabilities characteristics and methods, accuracy requirements and verification/validation methods in OSI-203-a, OSI-203-b and OSI-203-c (OSI-DCR-2015-26 version 1.1 approved by SG on the 11/03/2016) • Correction of frequency of AHL radiative fluxes (OSI-301 series, OSI-302 series) • Correction of time period of ERS SCAT winds data record (OSI-152) • Removal of explanation on ISS/RapidScat winds (OSI-109 series) |
| 1.0 | 30/05/2017 | CH | First version approved by OSI SAF SG |

| | | | |
|-----|------------|----|---|
| 1.1 | 20/11/2017 | CH | <p>OSI-DCR-2017-006 version 1.2, dated 19/10/2017 approved by SG on the 26/10/2017. Correction of geostationary radiative fluxes accuracy requirements : accuracy requirements on MSG based products (OSI-303, OSI-303-a, OSI-304, OSI-304-a) are only on hourly products. Same for GOES-East based products (OSI-305, OSI-305-b, OSI-306, OSI-306-b) : accuracy requirements are only on hourly products. Accuracy requirements on daily DLI and SSI products have been introduced for MTG based products (OSI-303-b, OSI-304-b).</p> <p>OSI-DCR-2017-011 version 1.0, dated 12/10/2017 approved by SG on the 26/10/2017. Sea ice edge, type, low resolution drift (OSI-402-d, OSI-403-d, OSI-405-d): "Include DMSP-F19/20" removed Sea ice concentration (L3 and L2), emissivity (OSI-401-d, OSI-404-b, OSI-410-a) : "Include DMSP-F19/20" removed Sea ice concentration (OSI-408-a) : "Include new AMSR-2 instrument ?" removed</p> <p>OSI-DCR-2017-010 version 1.3, dated 26/10/2017 approved by SG on the 26/10/2017. Addition of OSI-430-b : Global Sea Ice Concentration interim climate data record, release 2, corresponding to 2nd release of the data record (OSI-450). OSI-430 is the ICDR for OSI-409+OSI-409-a (1st release of CDR) OSI-430-b is the ICDR for OSI-450 (2nd release of CDR) OSI-430-a is the ICDR for OSI-450-a (3rd release of CDR) (Future version can be identified OSI-430-c and OSI-450-c)</p> <p>OSI-DCR-2017-013 version 1.1, dated 26/10/2017 approved by SG on the 26/10/2017. GOES-E Sea surface temperature and radiative fluxes (DLI + SSI) : addition of OSI-207-a, OSI-305-a and OSI-306-a corresponding to the products based on GOES-16 with a temporary processing chain (adapataion of the chain processing GOES-13). When the new GEO chain will be ready, these products will be replaced by the OSI-207-b, OSI-305-b and OSI-306-b (as initially planned)</p> |
| 1.2 | 24/05/2018 | CH | <p>OSI-DCR-2017-017 version 1.0, dated 20/11/2017 approved by SG on the 04/04/2017. Correction of medium resolution sea ice drift (OSI-407, OSI-407-a and OSI-407-b) temporal frequency and central time. Precision of processing level and projection.</p> <p>OSI-DCR-2017-020 version 1.1, dated 13/03/2018 approved by SG on the 09/04/2018. L2 PMW sea ice concentration (OSI-410) : definition of the timeliness, the spatial sampling, the threshold/target/optimal accuracy, the dissemination means.</p> <p>OSI-DCR-2017-023 version 1.0, dated 26/01/2018 approved by SG on the 04/04/2018. Correction of MSG/SEVIRI Sea Surface Temperature (SST) data record (OSI-250) target accuracy requirement. Addition of complementary information to be in line with the SeSp.</p> |

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1. Introduction

1.1. Purpose of the document and considerations

The purpose of this document is to provide the characteristics of products and services to be provided in the long term, e.g. at the end of the CDOP-2. It describes the committed target for development and operations. It is the main reference document for all development related reviews. It indicates to the users what can be expected after completion of planned developments. The document is structured as follows:

- Chapter 1: This introduction
- Chapter 2: Provides background information on important oceanic features and requirements for satellite data.
- Chapter 3: Brings OSI SAF basic objectives.
- Chapter 4: Presents an overview on the products target applications.
- Chapter 5: Details the OSI SAF general requirements.
- Chapter 6: Details the OSI SAF requirements for each product.
- Chapter 7: Details the Web Site User Support requirements.

Note : In complement to this document, the characteristics of current (pre-) operational products and services are described in the Service Specification document (SESP).

This document, and its evolutions, are subject to approval by the OSI SAF Steering Group.

1.2. Applicable Documents

- [AD.1] OSI SAF
Proposal for the Third Continuous Development and Operations Phase (CDOP 3)
March 2017-February 2022
Version 2.0, 1 March 2016
- [AD.2] *Agreement between EUMETSAT and Météo-France on the CDOP 3 of OSI SAF*
signed on 7 December 2016
- [AD.3] *Agreement between Météo-France and Ifremer on the CDOP 3 of OSI SAF*
signed on 28 February 2017
- [AD.4] *Agreement between Météo-France and MET Norway on the CDOP 3 of OSI SAF*
signed on 20 January 2017
- [AD.5] *Agreement between Météo-France and DMI on the CDOP 3 of OSI SAF*
signed on 1st February 2017
- [AD.6] *Agreement between Météo-France and KNMI on the CDOP 3 of OSI SAF*
signed on 2 March 2017
- [AD.7] EUMETSAT
MTG End-User Requirements Document
EUM/MTG/SPE/07/0036

[AD.8] EUMETSAT
SAF Level 2 Products Generation and Dissemination Baseline for MTG
EUM/STG/64/14/DOC/08

[AD.9] EUMETSAT
EPS-SG Programme End User Requirements Document
EUM/PEPS/REQ/09/0151

[AD.10] EUMETSAT
Definition of Product Status Categories for the SAF Network
EUM/PPS/TEN/07/0036

[AD.11] OSI SAF
CDOP 3 Project Plan (PP)
Version 1.0, May 2017

Reference to an Applicable Document within the body of this Document is indicated as reference in the list above, e.g. [AD.1].

1.3. Reference documents

[RD.1] OSI SAF
Service Specification (SeSp)
Version 1.0, April 2017

Reference to a Reference Document within the body of this document is indicated as reference in the list above, e.g. [RD.1].

1.4. Terminology

Each user requirement in the OSI SAF PRD bears a unique identification number which will be used for cross-reference in other documents of the OSI SAF.

- Requirements that are considered as mandatory and which are committed for, are stated with a "shall".
- Requirements that are considered as desirable but which are not committed for at this stage, are stated with a "should".
- Requirements that are still pending definition or approval are flagged with either a TBD (To Be Defined) or a TBC (To Be Confirmed).

In this document the requirements are referenced OSI-PRD.

1.5. Definitions, acronyms and abbreviations

| | |
|--------|--|
| AHL | Atlantic High Latitude |
| AMSR-2 | Advanced Microwave Scanning Radiometer - 2 |
| ASCAT | Advanced SCATterometer |
| AVHRR | Advanced Very High Resolution Radiometer |
| BUFR | Binary Universal Format Representation |

| | |
|------------|--|
| CCI | Climate Change Initiative (ESA Programme) |
| CDOP | Continuous Development and Operations Phase |
| CMS | Centre de Météorologie Spatiale |
| DLI | Downward Longwave Irradiance |
| DMI | Danish Meteorological Institute |
| DMSP | Defense Meteorological Satellite Program |
| ECMWF | European Centre for Medium range Weather Forecast |
| EDC | EUMETSAT Data Centre |
| EPS | European Polar System |
| ESA | European Space Agency |
| FAQ | Frequently Asked Question |
| FAR | False Alarm Ratio |
| FTP | File Transfer Protocol |
| GCOM-W | Global Change Observation Mission- Water (JAXA mission) |
| GCOS | Global Climate Observing System |
| GEO | Geostationary Earth Orbit |
| GBL | Global oceans |
| GHRSSST | Group for High Resolution Sea Surface Temperature |
| GOES | Geostationary Operational Environmental Satellite |
| GRIB | GRIdded Binary format |
| GTS | Global Transmission System |
| HIRLAM | High Resolution Limited Area Model |
| HL | High Latitude |
| HRIT | High Rate Information Transmission |
| IASI | Infrared Atmospheric Sounding Interferometer |
| Ifremer | Institut Français de Recherche pour l'Exploitation de la MER |
| IOP | Initial Operational Phase |
| ISRO | Indian Space Research Organisation |
| JAXA | Japan Aerospace Exploration Agency |
| JPSS | Joint Polar Satellite System (NOAA and NASA) |
| KNMI | Koninklijk Nederlands Meteorologisch Instituut |
| LEO | Low Earth Orbit |
| LML | Low and Mid Latitude |
| MET | Operational Meteosat covering Africa and Europe |
| Meteosat | Operational Meteosat covering Africa and Europe |
| Metop | Meteorological operational satellite (EUMETSAT EPS programme) |
| MF | Météo-France |
| MSG | Meteosat Second Generation (EUMETSAT MSG programme) |
| NAR | Northern Atlantic and Regional |
| NMS | National Meteorological Service |
| NOAA | National Oceanic and Atmospheric Administration |
| NPP | NPOESS Preparatory Project |
| NPOESS | National Polar-orbiting Operational Environmental Satellite System |
| NRT | Near Real-Time |
| NWP | Numerical Weather Prediction |
| OceanSat-2 | ISRO Meteorological satellite launched in 2009 |
| OSCAT | Oceansat-2 SCATterometer |
| OSI SAF | Ocean and Sea Ice SAF |
| PoD | Probability of Detection |
| QC | Quality Control |
| R&D | Research and Development |
| RMDCN | Regional Meteorological Data Communication Network |
| RMS | Root-Mean-Squared |
| SAF | Satellite Application Facility |

| | |
|---------|--|
| Std Dev | Standard deviation |
| SEVIRI | Spinning Enhanced Visible and Infra-Red Imager |
| IST | (Sea) Ice Surface Temperature |
| SSI | Solar Surface Irradiance |
| SSMI | Special Sensor Microwave Imager |
| SSMIS | Special Sensor Microwave Imager and Sounder (onboard DMSP) |
| SST/IST | Sea and Sea Ice Surface Temperature |
| SST | Sea Surface Temperature |
| TBC | To Be Confirmed |
| TBD | To Be Defined |
| UMARF | Unified Meteorological Archive & Retrieval Facility |
| VIIRS | Visible/Infrared Imager/Radiometer Suite |
| WMO | World Meteorological Organisation |
| WVC | Wind Vector Cell |
| WWW | World Wide Web |

2. Important oceanic features and requirements for satellite data

The research in oceanography, the monitoring of climate and coastal environment, the operational Numerical Weather Prediction (NWP) and marine meteorology, the Navy operations and the off-shore activities have a common need to observe, describe, analyse and forecast the state of the oceans and its variations. In this respect, the measurement of oceanic physical parameters (temperature, salinity and currents), as well as momentum, energy and fresh water exchanges at the ocean/atmosphere interface which drive their evolution, is of extreme importance.

Because of its physical nature, the ocean is much more difficult to observe than the atmosphere : most of the significant phenomena have a characteristic size which is one order of magnitude smaller than their equivalent in the atmosphere, and most of the signals are weaker. Moreover, the environmental conditions at sea make the in-situ measurements more difficult and more expensive than over land. As an example, the oceanic meso-scale eddies, which dominate the oceanic signal in most basins, have a typical size between 10 and 300 km, while the atmospheric synoptic perturbations have a typical size of 1000 km. The temporal spectrum of significant oceanic signals is also very wide, between a few hours (surface waves, internal waves, tides...) and a few months or years (eddies, equatorial waves, subtropical gyres and associated currents).

All these reasons make the earth observation satellites a unique opportunity to observe the oceans with the necessary coverage, sampling and availability in operational conditions, which an in-situ measurement network would never fulfil alone. Nevertheless, the ocean is opaque for electromagnetic radiation, which implies that only surface signals can be observed from space. As a consequence, the knowledge of the three-dimensional structure of the oceans requires the combined use of satellite observations, in-situ observations and ocean numerical models through assimilation techniques.

Momentum exchange between the atmosphere and the ocean determines wave spectra, storm surges, ocean circulation. The measurement of near-surface wind by scatterometer is of utmost importance, in particular for operational marine meteorology, operational NWP, ocean modelling and climate research.

Sea Surface Temperature (SST) is a key oceanic variable, which drives the turbulent heat fluxes at the ocean/atmosphere interface. Therefore, an accurate knowledge of the SST field is needed for marine meteorology, operational NWP and ocean modelling, and SST evolution is a key indicator

of climate change. In addition, two important components of the heat budget at the ocean surface, which drives its evolution, can be inferred from satellite visible and infrared radiometers : the radiative short wave and long wave fluxes. No direct routine measurements of the radiative fluxes are available from ships or buoys, as the maintenance of pyranometers or pyrgeometers at sea is very difficult, and requires in addition a frequent cleaning of the instruments. Moreover, the estimates of these fluxes, provided by the NWP outputs suffer from a lot of systematic errors due to the weaknesses of models radiation and cloud parameterisations, to the lack of upper-air observations over the oceans, and model spin-up problems.

Accurate information on sea ice is also crucial for a range of applications from operational NWP and numerical ocean models to climate research. Combining data from different satellites and sensors in a multi-sensor approach ensures an optimal use of available real-time satellite data.

The OSI SAF products are an answer to several users requirements sources, collected and maintained in various contexts. Let's mention in particular :

- the requirements for Ocean observations relevant to post-EPS (Stammer et al, AEG Ocean Topography and Ocean Imaging, January 2007),
- the GHRSSST Users Requirements for SST,
- the GCOS requirements for reprocessed products.

Note also that the 82nd EUMETSAT Council meeting approved as uncontroversial the Third Party Data Services under consideration and their associated priorities as presented in EUM/C/82/14/DOC/14 which includes :

- Priority 1 assigned to ISS / Rapidscat (launched in 2014)
- Priority 1 assigned to HY-2A / SCAT (launched in 2011)
- Priority 2 assigned to HY-2B / SCAT (to be launched in 2016)

3. Overview on the OSI SAF target production

The objective of the OSI SAF is the operational near real-time production, distribution and archiving of a coherent set of information characterising the ocean surface and the energy fluxes through it : sea-surface temperature fields and structures, radiative fluxes, wind vector and sea ice. The range of products areas has been set to take into account different domains and scales of applications : The Global Oceans, the Atlantic Ocean at low and mid latitude (including Westernmost part of Indian Ocean), The Atlantic/Arctic High latitudes, The Antarctic and the Nearest Atlantic and European seas.

The OSI SAF will rely on the combined use of satellite data from different sources. Data from EUMETSAT programmes will be completed by information from other programmes as relevant, in particular USA ones : NOAA, GOES, DMSP, ScatSat and NPP.

The OSI SAF shall provide users with products related to :

- Sea Surface Temperature (underskin temperature), Sea Ice Temperature and Lake Surface Temperature
- Surface radiative fluxes : Solar Surface Irradiance (SSI) and Downward Long wave Irradiance (DLI),
- Sea Ice concentration, edge, type, emissivity and drift
- Near surface wind vector (at 10m height).

The products are either level 2 or 3, according to the following classification :

- level 2 : retrieved geophysical products at the time and location of measurement with no complex compositing in space or time. This is the case for wind products and SST products at full satellite resolution.
- level 3 : products mapped or averaged or analysed to standard geographic grids. This may include gap filling, but « missing data » gaps are acceptable. Products usually from one observation source only, although a composite product from similar instruments on different satellites might legitimately be called level 3. This is the case for DLI and SSI radiative fluxes, sea ice products, and SST not at full satellite resolution.

4. Main applications of the OSI SAF products

The OSI SAF is an answer to the common requirements of meteorology and oceanography for a comprehensive information on the ocean-atmosphere interface. These requirements come primarily from National Meteorological Services (NMSs), which are considered as the primary users of the OSI SAF, as well as oceanic and climate research agencies. These users should normally receive the data from the SAF in order to utilise these for manufacturing higher level products or scientific work. These users include :

- NWP centres, for use and/or assimilation in their operational NWP systems,
- marine meteorological centres, for direct use for their marine forecast activities or related service activities (storm surge prediction, oil drift prediction, ship routing etc...),
- ocean modelling centres, for use and/or assimilation in numerical ocean prediction systems,
- polar research centres, to monitor sea surface conditions in polar regions,
- climate monitoring centres, for use and/or assimilation in coupled ocean/atmosphere numerical models, with possible application to seasonal prediction,
- sea ice services.

Other users can be found within the economic communities exercising their activities on or in the ocean :

- government agencies, in charge of safety or economic planning, research,
- satellite data processing centres,
- fisheries and aquaculture,
- navigation,
- offshore industry,
- coastal engineering,
- defence

5. General requirements

5.1. Capability requirements

OSI-PRD-GEN-001 The OSI SAF products shall be generated from real-time or off-line satellite data.

OSI-PRD-GEN-002 When some of the input data are missing or corrupted, production shall be performed as soon as the available input data make it possible.

5.2. Constraint requirements

OSI-PRD-GEN-100 Operational OSI SAF products shall be available for distribution within the specified time on a monthly basis in more than 95% (98% for MTG Day-1 products) of the cases where input satellite data are available with the nominal level of quality (on monthly basis). Nominal quality data are defined as input data that successfully pass all input data tests in the OSI SAF processing.

Note :

- OSI SAF products availability timeliness for EUMETCast is defined from the last satellite input data arrival in the production centre to the product availability at the entry point of the distribution network.
- The timeliness values are indicated for each product in section 6.

OSI-PRD-GEN-101 Operational OSI SAF products accuracy should be better than the value specified as threshold accuracy in the products tables when input satellite data are available with the nominal level of quality (on monthly basis).

5.3. Documentation and software requirements

OSI-PRD-GEN-200 The OSI SAF shall maintain a record of all algorithms, software and documentation developed during its whole life.

OSI-PRD-GEN-201 Documentation shall include for each product (or family of products) :

- an Algorithm Theoretical Baseline Document (ATBD)
- a Product User Manual (PUM),
- a Scientific Validation Report (SVR or VAL).

5.4. Quality control requirements

OSI-PRD-GEN-300 For each OSI SAF operational product, quality controls shall be performed continuously and automatically.

OSI-PRD-GEN-301 The OSI SAF shall archive all products control reports.

5.5. Products format and access requirements

OSI-PRD-GEN-400 The OSI SAF products shall be made available via the dissemination means as specified in the corresponding tables of Chapter 6.

OSI-PRD-GEN-401 The OSI SAF products shall be made available in the formats as specified in the corresponding tables of Chapter 6.

Note : RMDCN, Internet and EUMETCast performance are out of OSI SAF responsibility

OSI-PRD-GEN-402 The OSI SAF shall archive all distributed products during an interim archive period when they are not yet migrated into EUMETSAT DATA CENTRE (EDC).

OSI-PRD-GEN-403 During the interim archive period, OSI SAF products shall be accessible off-line through Internet over a minimum of one month backwards from the current date.

OSI-PRD-GEN-404 During the interim archive period, access to the archived products is based on simple FTP servers accessible via Internet, with no invoicing, browsing or catalogue consultation capacity.

OSI-PRD-GEN-405 During the interim archive period, the OSI SAF Web site shall provide users with practical information to get access to archived products

5.6. Products areas requirements

OSI-PRD-GEN-500 The OSI SAF product areas shall be as following :

- Global (GBL) : Global Oceans,
- Global for the Sea Ice case : constituted of the Northern Hemisphere (NH, north of 35°N) and the Southern Hemisphere (SH, south of 50°S),
- METEOSAT: 60S-60N, 60W-60E,
- GOES-E: 60S-60N, 15W-135W,
- Atlantic High Latitude (AHL) : Atlantic north of 50°N,
- Northern High Latitude (NHL) : Poleward of 50°N,
- High Latitude (HL): Poleward of 50°N and 50°S,
- Northern Atlantic and Regional seas (NAR): seas watering EUMETSAT member states including a large part of northern Atlantic

6. Products requirements

6.1. SST requirements

OSI-PRD-PRO-1 The OSI SAF shall deliver the following SST products :

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | Global Metop Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-201-b |
| Acronym | GBL SST |
| | |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Metop-B / AVHRR |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 12 h |
| Central time | |
| Timeliness | 6 h |
| Spatial coverage | Global |
| Spatial sampling | 0.05° |
| Projection | |
| Characteristics & methods | Subskin temperature; multispectral algorithm + use of NWP output |
| | |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 0.8 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.3 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| | |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| | |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | Global Metop Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-201-c |
| Acronym | GBL SST |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Metop-C / AVHRR |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 12 h |
| Central time | |
| Timeliness | 6 h |
| Spatial coverage | Global |
| Spatial sampling | 0.05° |
| Projection | |
| Characteristics & methods | Subskin temperature; multispectral algorithm + use of NWP output |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 0.8 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.3 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| COMMENTS | |
| Will replace OSI-201-b | |

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | Global Metop-SG Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-201-e |
| Acronym | GBL SST |
| | |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Metop-SG / MetImage |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 12 h |
| Central time | |
| Timeliness | 6 h |
| Spatial coverage | Global |
| Spatial sampling | 0.05° |
| Projection | |
| Characteristics & methods | Subskin temperature; multispectral algorithm + use of NWP output |
| | |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 0.8 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.3 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| | |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| | |
| COMMENTS | |
| Will replace OSI-201-c | |

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | North Atlantic Regional Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-202-b |
| Acronym | NAR SST |
| | |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Metop-B / AVHRR, NPP / VIRRS |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 6 h |
| Central time | |
| Timeliness | 6 h |
| Spatial coverage | North Atlantic |
| Spatial sampling | 2 km |
| Projection | |
| Characteristics & methods | Subskin temperature; multispectral algorithm + use of NWP output |
| | |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 0.8 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.3 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| | |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| | |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | North Atlantic Regional Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-202-c |
| Acronym | NAR SST |
| | |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Metop-C / AVHRR, NPP / VIRRS |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 6 h |
| Central time | |
| Timeliness | 6 h |
| Spatial coverage | North Atlantic |
| Spatial sampling | 2 km |
| Projection | |
| Characteristics & methods | Subskin temperature; multispectral algorithm + use of NWP output |
| | |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias : 1 K, std. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, std. dev. : 0.8 K |
| Optimal accuracy | Monthly bias : 0.1 K, std. dev. : 0.3 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| | |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| | |
| COMMENTS | |
| Will replace OSI-202-b | |

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | North Atlantic Regional Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-202-d |
| Acronym | NAR SST |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Metop-C / AVHRR, JPSS / VIIRS |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 6 h |
| Central time | |
| Timeliness | 6 h |
| Spatial coverage | North Atlantic |
| Spatial sampling | 2 km |
| Projection | |
| Characteristics & methods | Subskin temperature; multispectral algorithm + use of NWP output |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 0.8 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.3 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| COMMENTS | |
| Will replace OSI-202-c | |

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | North Atlantic Regional Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-202-e |
| Acronym | NAR SST |
| | |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Metop-SG / MetImage,JPSS |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 6 h |
| Central time | |
| Timeliness | 6 h |
| Spatial coverage | North Atlantic |
| Spatial sampling | 2 km |
| Projection | |
| Characteristics & methods | Subskin temperature; multispectral algorithm + use of NWP output |
| | |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 0.8 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.3 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| | |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| | |
| COMMENTS | |
| Will replace OSI-202-d | |

| IDENTIFICATION | |
|----------------------------------|---|
| Name | Atlantic High Latitude Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-203 |
| Acronym | AHL SST |
| | |
| CHARACTERISTICS | |
| Processing level | L3 |
| Satellite input | AVHRR (NOAA, Metop) |
| Other input | HIRLAM (or other limited area model) outputs |
| Frequency | 12h |
| Central time | |
| Timeliness | 3h30 |
| Spatial coverage | Atlantic North of 50N |
| Spatial sampling | 5km |
| Projection | |
| Characteristics & methods | SST : subskin temperature. Multispectral algorithm |
| | |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | SST bias: 1 K SST std: 1.5 K |
| Target accuracy | SST bias: 0.5 K SST std: 0.8 K |
| Optimal accuracy | SST bias: 0.1 K SST std: 0.3 K |
| Verification/ validation methods | SST : comparison with buoy measurements. |
| | |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF, GRIB |
| Applications and users | * Operational Met Services, * Operational analyses and ocean models, * Research or Environmental monitoring |
| | |
| COMMENTS | |
| | |

| IDENTIFICATION | | | |
|--|---|---|---|
| Name | Northern High Latitude Sea and Sea Ice Surface Temperature | | |
| Description | | | |
| Product type | NRT Product | | |
| Identifier | OSI-203-a | | |
| Acronym | NHL L3 SST/IST | | |
| | | | |
| CHARACTERISTICS | | | |
| Processing level | | | |
| Satellite input | AVHRR (Metop) | | |
| Other input | ECMWF outputs | | |
| Frequency | 12h | | |
| Central time | | | |
| Timeliness | 3h30 | | |
| Spatial coverage | Poleward of 50N | | |
| Spatial sampling | 5km | | |
| Projection | | | |
| Characteristics & methods | SST : subskin temperature. Multispectral algorithms IST : skin temperature. Multispectral algorithms. Probabilities of open water and sea ice. Single sensor analysis | | |
| | | | |
| ACCURACY REQUIREMENTS | | | |
| Threshold accuracy | SST bias: 1 K SST std: 1.5 K | IST bias: 2.0 / 3.0 K IST std: 3.0 / 4.0 K | PoD: 0.65 FAR: 0.40 |
| Target accuracy | SST bias: 0.5 K SST std: 0.8 K | IST bias: 1.0 / 1.5 K IST std: 1.5 / 2.0 K | PoD: 0.80 FAR: 0.20 |
| Optimal accuracy | SST bias: 0.1 K SST std: 0.3 K | IST bias: 0.5 / 0.8 K IST std: 0.8 / 1.0 K | PoD: 0.90 FAR: 0.10 |
| Verification/ validation methods | SST : comparison with buoy measurements. | IST: comp with IR radiometer and buoy obs, separately | Comparison with high resolution manual ice charts |
| | | | |
| DATA ACCESS | | | |
| Dissemination means | FTP server, EUMETCast, EDC | | |
| Format | NetCDF, GRIB | | |
| Applications and users | * Operational Met Services, * Operational analyses and ocean models, * Research or Environmental monitoring | | |
| | | | |
| COMMENTS | | | |
| <p>Monthly accuracies. Extend to full Northern Hemisphere. Include sea ice surface temperature and Sea Ice Probabilities. The IST accuracy requirements are split in two: the first is for validation against in situ IR radiometers, the second for in situ buoy data. The reason for this is discussed in the ATBD for OSI-205.</p> | | | |

| IDENTIFICATION | | | |
|---|--|---|---|
| Name | High Latitude L3 Sea and Sea ice Surface Temperature | | |
| Description | | | |
| Product type | NRT Product | | |
| Identifier | OSI-203-b | | |
| Acronym | HL L3 SST/IST | | |
| CHARACTERISTICS | | | |
| Processing level | | | |
| Satellite input | AVHRR (Metop) and VIIRS (NPP, JPSS) | | |
| Other input | NWP outputs, OSTIA SST analysis | | |
| Frequency | 12h | | |
| Central time | | | |
| Timeliness | 3h30 | | |
| Spatial coverage | Poleward of 50N and 50S | | |
| Spatial sampling | 5km | | |
| Projection | | | |
| Characteristics & methods | SST : subskin temperature. IST : skin temperature. Probabilities of open water and sea ice. Multispectral algorithms. | | |
| ACCURACY REQUIREMENTS | | | |
| Threshold accuracy | SST bias: 1 K SST std: 1.5 K | IST bias: 2.0 / 3.0 K IST std: 4.0 K | PoD: 0.65 FAR: 0.40 |
| Target accuracy | SST bias: 0.5 K SST std: 0.8 K | IST bias: 1.0 / 1.5 K IST std: 1.5 / 2.0 K | PoD: 0.80 FAR: 0.20 |
| Optimal accuracy | SST bias: 0.1 K SST std: 0.3 K | IST bias: 0.5 / 0.8 K IST std: 0.5 / 1.0 K | PoD: 0.90 FAR: 0.10 |
| Verification/validation methods | SST : comparison with drifting buoy measurements. | IST : comparison with buoy measurements on the ice and IR radiometer when available | Comparison with high resolution manual ice charts |
| DATA ACCESS | | | |
| Dissemination means | FTP server, EUMETCast, EDC | | |
| Format | NetCDF, GRIB | | |
| Applications and users | * Operational Met Services, * Operational analyses and ocean models, * Research or Environmental monitoring | | |
| COMMENTS | | | |
| The IST accuracy requirements are split in two: the first is for validation against in situ IR radiometers, the second for in situ buoy data. The reason for this is discussed in the ATBD for OSI-205. | | | |

| IDENTIFICATION | | | |
|--|--|---|---|
| Name | High Latitude L3 Sea and Sea ice Surface Temperature | | |
| Description | | | |
| Product type | NRT Product | | |
| Identifier | OSI-203-c | | |
| Acronym | HL L3 SST/IST | | |
| CHARACTERISTICS | | | |
| Processing level | | | |
| Satellite input | AVHRR (Metop) and VIIRS (NPP, JPSS) | | |
| Other input | NWP outputs, OSTIA SST analysis | | |
| Frequency | 12h | | |
| Central time | | | |
| Timeliness | 3h30 | | |
| Spatial coverage | Poleward of 50N and 50S | | |
| Spatial sampling | 5km | | |
| Projection | | | |
| Characteristics & methods | SST : subskin temperature. IST : skin temperature. Probabilities of open water and sea ice. Multispectral algorithms. | | |
| ACCURACY REQUIREMENTS | | | |
| Threshold accuracy | SST bias: 1 K SST std: 1.5 K | IST bias: 2.0 / 3.0 K IST std: 3.0 / 4.0 K | PoD: 0.65 FAR: 0.40 |
| Target accuracy | SST bias: 0.5 K SST std: 0.8 K | IST bias: 1.0 / 1.5 K IST std: 1.5 / 2.0 K | PoD: 0.80 FAR: 0.20 |
| Optimal accuracy | SST bias: 0.1 K SST std: 0.3 K | IST bias: 0.5 / 0.8 K IST std: 0.8 / 1.0 K | PoD: 0.90 FAR: 0.10 |
| Verification/validation methods | SST : comparison with drifting buoy measurements. | IST : comparison with buoy measurements on the ice and IR radiometer when available | Comparison with high resolution manual ice charts |
| DATA ACCESS | | | |
| Dissemination means | FTP server, EUMETCast, EDC | | |
| Format | NetCDF, GRIB | | |
| Applications and users | * Operational Met Services, * Operational analyses and ocean models, * Research or Environmental monitoring | | |
| COMMENTS | | | |
| Include use of RTTOV corrections Include Metop-C and JPSS1 The IST accuracy requirements are split in two: the first is for validation against in situ IR radiometers, the second for in situ buoy data. The reason for this is discussed in the ATBD for OSI-205. | | | |

| IDENTIFICATION | | |
|-------------------------------------|---|---|
| Name | High Latitude L3 Sea and Sea ice Surface Temperature | |
| Description | | |
| Product type | NRT Product | |
| Identifier | OSI-203-e | |
| Acronym | HL L3 SST/IST | |
| CHARACTERISTICS | | |
| Processing level | | |
| Satellite input | AVHRR (Metop), VIIRS (NPP, JPSS), Met-Imager (EPS-SG) | |
| Other input | NWP outputs, OSTIA SST analysis | |
| Frequency | 12h | |
| Central time | | |
| Timeliness | 3h30 | |
| Spatial coverage | Poleward of 50N and 50S | |
| Spatial sampling | 5km | |
| Projection | | |
| Characteristics & methods | SST : subskin temperature. IST : skin temperature. Multispectral algorithms. | |
| ACCURACY REQUIREMENTS | | |
| Threshold accuracy | SST bias: 1 K SST std: 1.5 K | IST bias: 3.0 K IST std: 4.0 K |
| Target accuracy | SST bias: 0.5 K SST std: 0.8 K | IST bias: 1.5 K IST std: 2.0 K |
| Optimal accuracy | SST bias: 0.1 K SST std: 0.3 K | IST bias: 0.5 K IST std: 0.5 K |
| Verification/ validation methods | SST : comparison with drifting buoy measurements. | IST : comparison with buoy measurements on the ice and IR radiometer when available |
| DATA ACCESS | | |
| Dissemination means | FTP server, EUMETCast, EDC | |
| Format | NetCDF, GRIB | |
| Applications and users | * Operational Met Services, * Operational analyses and ocean models, * Research or Environmental monitoring | |
| COMMENTS | | |
| Include EPS-SG MetImage | | |

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | Full resolution MetOp Sea Surface Temperature metagranules |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-204-b |
| Acronym | MGR SST |
| | |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Metop-B / AVHRR |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 3 min |
| Central time | |
| Timeliness | 4 h |
| Spatial coverage | Global |
| Spatial sampling | 1 km |
| Projection | |
| Characteristics & methods | Subskin temperature; multispectral algorithm + use of NWP output |
| | |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 0.8 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.3 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| | |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| | |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | Full resolution MetOp Sea Surface Temperature metagranules |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-204-c |
| Acronym | MGR SST |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Metop-C / AVHRR |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 3 min |
| Central time | |
| Timeliness | 4 h |
| Spatial coverage | Global |
| Spatial sampling | 1 km |
| Projection | |
| Characteristics & methods | Subskin temperature; multispectral algorithm + use of NWP output |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 0.8 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.3 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| COMMENTS | |
| Will replace OSI-204-b | |

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | Full resolution MetOp Sea Surface Temperature metagranules |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-204-e |
| Acronym | MGR SST |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Metop-SG / MetImage |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 3 min |
| Central time | |
| Timeliness | 4 h |
| Spatial coverage | Global |
| Spatial sampling | 1 km |
| Projection | |
| Characteristics & methods | Subskin temperature; multispectral algorithm + use of NWP output |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 0.8 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.3 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| COMMENTS | |
| Will replace OSI-204-c | |

| IDENTIFICATION | | |
|---|---|---|
| Name | High Latitude L2 Sea and Sea Ice Surface Temperature | |
| Description | | |
| Product type | NRT Product | |
| Identifier | OSI-205 | |
| Acronym | L2 SST/IST | |
| CHARACTERISTICS | | |
| Processing level | L2 | |
| Satellite input | Metop/AVHRR | |
| Other input | ECMWF outputs | |
| Frequency | continuous | |
| Central time | | |
| Timeliness | 3h | |
| Spatial coverage | Poleward of 50N/50S | |
| Spatial sampling | 1 km | |
| Projection | Swath | |
| Characteristics & methods | SST: subskin temperature (K). IST: skin temperature. Multispectral algorithms. | |
| ACCURACY REQUIREMENTS | | |
| Threshold accuracy | SST bias : 1.5 K SST std : 1,5 K | IST bias : 2.5 / 4.5 K IST std : 3.0 / 4.0 K |
| Target accuracy | SST bias : 0.7 K SST std : 1.0 K | IST bias : 1.5 / 3.5 K IST std : 2.0 / 3.0 K |
| Optimal accuracy | SST bias : 0.1 K SST std : 0.3 K | IST bias : 0.5 / 0.8 K IST std : 0.8 / 1.0 K |
| Verification/ validation methods | SST : Comparison with buoy observations. | IST: comp with IR radiometer and buoy observations, separately |
| DATA ACCESS | | |
| Dissemination means | FTP server, EUMETCast, EDC | |
| Format | NetCDF | |
| Applications and users | * Operational Met Services, * Operational analyses and ocean models, * Research or Environmental monitoring | |
| COMMENTS | | |
| The IST accuracy requirements are split in two: the first is for validation against in situ IR radiometers, the second for in situ buoy data. The reason for this is discussed in the ATBD for OSI-205. | | |

| IDENTIFICATION | | |
|---|---|---|
| Name | High Latitude L2 Sea and Sea ice Surface Temperature | |
| Description | | |
| Product type | NRT Product | |
| Identifier | OSI-205-b | |
| Acronym | HL L2 SST/IST | |
| CHARACTERISTICS | | |
| Processing level | L2 | |
| Satellite input | AVHRR (Metop) and VIIRS (NPP, JPSS) | |
| Other input | NWP outputs | |
| Frequency | 3 min | |
| Central time | | |
| Timeliness | 3h | |
| Spatial coverage | Poleward of 50N and 50S | |
| Spatial sampling | 1km | |
| Projection | swath | |
| Characteristics & methods | SST : subskin temperature. IST : skin temperature. Multispectral algorithms. | |
| ACCURACY REQUIREMENTS | | |
| Threshold accuracy | SST bias: 1 K SST std: 1.5 K | IST bias : 2.5 / 4.5 K IST std : 3.0 / 4.0 K |
| Target accuracy | SST bias: 0.5 K SST std: 0.8 K | IST bias : 1.5 / 3.5 K IST std : 2.0 / 3.0 K |
| Optimal accuracy | SST bias: 0.1 K SST std: 0.3 K | IST bias : 0.5 / 0.8 K IST std : 0.8 / 1.0 K |
| Verification/ validation methods | SST : comparison with drifting buoy measurements. | IST : comparison with buoy measurements on the ice and IR radiometer when available |
| DATA ACCESS | | |
| Dissemination means | FTP server, EUMETCast, EDC | |
| Format | NetCDF | |
| Applications and users | * Operational Met Services, * Operational analyses and ocean models, * Research or Environmental monitoring | |
| COMMENTS | | |
| The IST accuracy requirements are split in two: the first is for validation against in situ IR radiometers, the second for in situ buoy data. The reason for this is discussed in the ATBD for OSI-205. | | |

| IDENTIFICATION | | |
|---|---|---|
| Name | High Latitude L2 Sea and Sea ice Surface Temperature | |
| Description | | |
| Product type | NRT Product | |
| Identifier | OSI-205-c | |
| Acronym | HL L2 SST/IST | |
| | | |
| CHARACTERISTICS | | |
| Processing level | | |
| Satellite input | | |
| Other input | NWP outputs | |
| Frequency | 3 min | |
| Central time | | |
| Timeliness | 3h | |
| Spatial coverage | Poleward of 50N and 50S | |
| Spatial sampling | 1km | |
| Projection | swath | |
| Characteristics & methods | SST : subskin temperature. IST : skin temperature. Multispectral algorithms. | |
| | | |
| ACCURACY REQUIREMENTS | | |
| Threshold accuracy | SST bias: 1 K SST std: 1.5 K | IST bias : 2.5 / 4.5 K IST std : 3.0 / 4.0 K |
| Target accuracy | SST bias: 0.5 K SST std: 0.8 K | IST bias : 1.5 / 3.5 K IST std : 2.0 / 3.0 K |
| Optimal accuracy | SST bias: 0.1 K SST std: 0.3 K | IST bias : 0.5 / 0.8 K IST std : 0.8 / 1.0 K |
| Verification/ validation methods | SST : comparison with drifting buoy measurements. | IST : comparison with buoy measurements on the ice and IR radiometer when available |
| | | |
| DATA ACCESS | | |
| Dissemination means | FTP server, EUMETCast, EDC | |
| Format | NetCDF | |
| Applications and users | * Operational Met Services, * Operational analyses and ocean models, * Research or Environmental monitoring | |
| | | |
| COMMENTS | | |
| <p>Include use of RTTOV corrections. Include Metop-C and JPSS1. The IST accuracy requirements are split in two: the first is for validation against in situ IR radiometers, the second for in situ buoy data. The reason for this is discussed in the ATBD for OSI-205.</p> | | |

| IDENTIFICATION | |
|---------------------------------|--|
| Name | High Latitude L2 Sea and Sea ice Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-205-e |
| Acronym | HL L2 SST/IST |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | AVHRR (Metop), VIIRS (NPP, JPSS), MetImage (EPS-SG) |
| Other input | NWP outputs |
| Frequency | 3 min |
| Central time | |
| Timeliness | 3h |
| Spatial coverage | Poleward of 50N and 50S |
| Spatial sampling | 1km |
| Projection | swath |
| Characteristics & methods | SST : subskin temperature. IST : skin temperature. Multispectral algorithms. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | SST bias: 1 K SST std: 1.5 K IST bias: 3.0 K IST std: 4.0 K |
| Target accuracy | SST bias: 0.5 K SST std: 0.8 K IST bias: 1.5 K IST std: 2.0 K |
| Optimal accuracy | SST bias: 0.1 K SST std: 0.3 K IST bias: 0.5 K IST std: 0.5 K |
| Verification/validation methods | SST : comparison with drifting buoy measurements. IST : comparison with buoy measurements on the ice and IR radiometer when available |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | * Operational Met Services, * Operational analyses and ocean models, * Research or Environmental monitoring |
| COMMENTS | |
| Include EPS-SG MetImage | |

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | METEOSAT Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-206 |
| Acronym | MET SST |
| | |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | MSG3 / SEVIRI |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 1 h |
| Central time | |
| Timeliness | 3 h |
| Spatial coverage | East Atlantic, West Indian : 60N-60S 60W-60E |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | |
| Characteristics & methods | Subskin temperature; multispectral algorithms + bias correction |
| | |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 1 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.5 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| | |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| | |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | METEOSAT Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-206-a |
| Acronym | MET SST |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | MSG4 / SEVIRI |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 1 h |
| Central time | |
| Timeliness | 1 h 30 |
| Spatial coverage | East Atlantic, West Indian : 60N-60S 60W-60E |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | |
| Characteristics & methods | Subskin temperature; multispectral algorithms + bias correction |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 1 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.5 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| COMMENTS | |
| Will replace OSI-206 | |

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | METEOSAT Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-206-b |
| Acronym | MET SST |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | MTG / FCI |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 1 h |
| Central time | |
| Timeliness | 35 min |
| Spatial coverage | East Atlantic, West Indian : 60N-60S 60W-60E |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | |
| Characteristics & methods | Subskin temperature; multispectral algorithms + bias correction |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 1 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.5 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| COMMENTS | |
| Will replace OSI-206-a | |

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | GOES-E Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-207 |
| Acronym | GOES-E SST |
| | |
| CHARACTERISTICS | |
| Processing level | L3C |
| Satellite input | GOES-East / imager (GOES-13) |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 1 h |
| Central time | |
| Timeliness | 3 h |
| Spatial coverage | West Atlantic East Pacific : 60N-60S 135W-15W |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | |
| Characteristics & methods | Subskin temperature; multispectral algorithm + use of NWP output |
| | |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 1 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.5 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| | |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF, GRIB2 |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| | |
| COMMENTS | |
| Will be replaced by OSI-207-a. | |

| IDENTIFICATION | |
|--|--|
| Name | GOES-E Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-207-a |
| Acronym | GOES-E SST |
| | |
| CHARACTERISTICS | |
| Processing level | L3C |
| Satellite input | GOES-(R/S) / ABI (GOES-16) |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 1 h |
| Central time | |
| Timeliness | 3 h |
| Spatial coverage | West Atlantic East Pacific : 60N-60S 135W-15W |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | |
| Characteristics & methods | Subskin temperature; multispectral algorithm + use of NWP output |
| | |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 1 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.5 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| | |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| | |
| COMMENTS | |
| <p>GOES new generation replaces GOES. This temporary product (processed with a temporary chain previously processing OSI-207) will replace OSI-207 and will be replaced by OSI-207-b.</p> | |

| IDENTIFICATION | |
|--|--|
| Name | GOES-E Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-207-b |
| Acronym | GOES-E SST |
| CHARACTERISTICS | |
| Processing level | L3C |
| Satellite input | GOES-(R/S) / ABI (GOES-16) |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 1 h |
| Central time | |
| Timeliness | 3 h |
| Spatial coverage | West Atlantic East Pacific : 60N-60S 135W-15W |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | |
| Characteristics & methods | Subskin temperature; multispectral algorithm + use of NWP output |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 1 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.5 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| COMMENTS | |
| Will replace OSI-207-a. Product processed with a new chain designed to process GOES new generation (GOES-16). | |

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | IASI Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-208-b |
| Acronym | IASI SST |
| | |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Metop-B / IASI |
| Other input | L2P core IASI SST produced by EUMETSAT Secr. |
| Frequency | 3 min |
| Central time | |
| Timeliness | 4 h |
| Spatial coverage | Global |
| Spatial sampling | 12 to 40 km |
| Projection | |
| Characteristics & methods | IASI L2 package |
| | |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 0.8 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.3 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| | |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| | |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | IASI Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-208-c |
| Acronym | IASI SST |
| | |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Metop-C / IASI |
| Other input | L2P core IASI SST produced by EUMETSAT Secr. |
| Frequency | 3 min |
| Central time | |
| Timeliness | 4 h |
| Spatial coverage | Global |
| Spatial sampling | 12 to 40 km |
| Projection | |
| Characteristics & methods | IASI L2 package |
| | |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 0.8 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.3 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| | |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| | |
| COMMENTS | |
| Will replace OSI-208-b | |

| IDENTIFICATION | |
|-------------------------------------|--|
| Name | IASI-NG Sea Surface Temperature |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-208-e |
| Acronym | IASI-NG SST |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Metop-SG / IASI-NG |
| Other input | L2P core IASI-NG SST produced by EUMETSAT Secr. |
| Frequency | 3 min |
| Central time | |
| Timeliness | 3 h |
| Spatial coverage | Global |
| Spatial sampling | 12 to 40 km |
| Projection | |
| Characteristics & methods | IASI L2 package |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias : 1 K, sdt. dev. : 1.5 K |
| Target accuracy | Monthly bias : 0.5 K, sdt. dev. : 0.8 K |
| Optimal accuracy | Monthly bias : 0.1 K, sdt. dev. : 0.3 K |
| Verification/ validation methods | Routine comparison with drifting buoy measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | * Atmosphere and ocean models; * Oceanography and * Fisheries. |
| COMMENTS | |
| Will replace OSI-206-c | |

| IDENTIFICATION | |
|---------------------------------|---|
| Name | MSG/SEVIRI Sea Surface Temperature data record, release 1 |
| Description | Subskin Sea Surface Temperature derived from the imager SEVIRI on MSG satellites (Meteosat-8 and Meteosat-9). SST is retrieved from SEVIRI infrared channels (10.8 and 12.0µm) using a nonlinear algorithm and the cloud mask from CM SAF. NWP outputs (temperature and humidity profiles), OSTIA Sea Surface Temperature re-analysis and analysis, together with a radiative transfer model (RTTOV), are used to correct the multispectral algorithm for regional and seasonal biases due to changing atmospheric conditions. The product is hourly and remapped onto a regular cylindrical equidistant latitude/longitude grid at 0.05° resolution and extends from 60°S to 60°N and 60°W to 60°E. The product format is compliant with the Data Specification (GDS) version 2 from the Group for High Resolution Sea Surface Temperatures (GHR SST). |
| Product type | Data Record |
| Identifier | OSI-250 |
| Acronym | MSG SST DR 1 |
| CHARACTERISTICS | |
| Processing level | L3C |
| Satellite input | MSG / SEVIRI (Meteosat-8, Meteosat-9) |
| Other input | NWP outputs (temperature and humidity profiles, aerosols optical depth), OSTIA Sea Surface Temperature re-analysis and analysis, CM SAF cloud mask |
| Frequency | 1 h |
| Time period | 19/01/2004 – 31/12/2012 |
| Central time | 00:00, 01:00, ..., 23:00 |
| Timeliness | Offline |
| Spatial coverage | East Atlantic, West Indian: 60N-60S 60W-60E |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | Cylindrical equidistant |
| Characteristics & methods | Subskin temperature; multispectral algorithm + use of NWP output |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | Monthly bias: 1 K, sdt. dev.: 1 K |
| Target accuracy | Monthly bias: 0.3 K, sdt. dev.: 0.8 K |
| Optimal accuracy | Monthly bias: 0.1 K, sdt. dev.: 0.3 K |
| Verification/validation methods | Comparison with drifting buoy measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EDC |
| Format | GHR SST NetCDF4 |
| Applications and users | Climate |
| COMMENTS | |
| | |

- OSI-PRD-PRO-2** The OSI SAF shall produce SST values in cloud clear areas only. In particular, no interpolation or analysis method shall be used to estimate SST in cloudy areas.
- OSI-PRD-PRO-3** Each grid node of a SST product shall include the SST value, the representative time of the SST value and the confidence level, defined in compliance with the GHRSSST recommendations.
- OSI-PRD-PRO-4** SST values shall be continuously quality controlled by comparison with night-time buoy measurements gathered in a match-up data set.
- OSI-PRD-PRO-5** The SST match-up data set shall be available to interested users on request.
- OSI-PRD-PRO-6** The SST products shall include Surface Temperature over selected lakes as derived from the standard SST algorithm, with no commitment on the accuracy and validation.

6.2. Radiative Fluxes (DLI and SSI) requirements

- OSI-PRD-PRO-100** The OSI SAF shall deliver the following Radiative Fluxes products :

| IDENTIFICATION | |
|-------------------------------------|---|
| Name | AHL Downward Longwave Irradiance |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-301 |
| Acronym | AHL DLI |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | AVHRR (NOAA, Metop) |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | 12:00 |
| Timeliness | 3 h 30 |
| Spatial coverage | Atlantic North of 50N |
| Spatial sampling | 5 km |
| Projection | Polar Stereographic |
| Characteristics & methods | Bulk parameterization |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | monthly relative bias : 10 %, monthly relative std. dev. : 20 % |
| Target accuracy | monthly relative bias : 5 %, monthly relative std. dev. : 10 % |
| Optimal accuracy | monthly relative bias : 0 %, monthly relative std. dev. : 3 % |
| Verification/ validation methods | Routine comparison with pyrgeometer measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | GRIB, NetCDF, HDF5 |
| Applications and users | * NWP, * Ocean and biological modeling at operational and research centers |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|-------------------------------------|---|
| Name | AHL Downward Longwave Irradiance |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-301-b |
| Acronym | AHL DLI |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | AVHRR, VIIRS (NPP, JPSS) |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | 12:00 |
| Timeliness | 3 h 30 |
| Spatial coverage | Atlantic North of 50N |
| Spatial sampling | 5 km |
| Projection | Polar Stereographic |
| Characteristics & methods | Bulk parameterization, including over sea ice |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | monthly relative bias : 10 %, monthly relative std. dev. : 20 % |
| Target accuracy | monthly relative bias : 5 %, monthly relative std. dev. : 10 % |
| Optimal accuracy | monthly relative bias : 0 %, monthly relative std. dev. : 3 % |
| Verification/ validation methods | Routine comparison with pyrgeometer measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | GRIB, NetCDF, HDF5 |
| Applications and users | * NWP, * Ocean and biological modeling at operational and research centers |
| COMMENTS | |
| Will replace OSI-301 | |

| IDENTIFICATION | |
|---|---|
| Name | AHL Downward Longwave Irradiance |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-301-c |
| Acronym | AHL DLI |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | AVHRR (+ Metop-C), VIIRS (NPP, JPSS) |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | 12:00 |
| Timeliness | 3 h 30 |
| Spatial coverage | Atlantic North of 50N |
| Spatial sampling | 5 km |
| Projection | Polar Stereographic |
| Characteristics & methods | Bulk parameterization, including over sea ice |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | monthly relative bias : 10%, monthly relative std. dev. : 20% |
| Target accuracy | monthly relative bias : 5%, monthly relative std. dev. : 10% |
| Optimal accuracy | monthly relative bias : 0%, monthly relative std. dev. : 3% |
| Verification/ validation methods | Routine comparison with pyrgeometer measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | GRIB NetCDF |
| Applications and users | * NWP, * Ocean and biological modeling at operational and research centers |
| COMMENTS | |
| Will replace OSI-301-b. Include Metop-C. | |

| IDENTIFICATION | |
|-------------------------------------|---|
| Name | AHL Surface Solar Irradiance |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-302 |
| Acronym | AHL SSI |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | AVHRR (NOAA, Metop) |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | 12:00 |
| Timeliness | 3 h 30 |
| Spatial coverage | Atlantic North of 50N |
| Spatial sampling | 5 km |
| Projection | Polar Stereographic |
| Characteristics & methods | Bulk parameterization |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | monthly relative bias : 20 %, monthly relative std. dev. : 50 % |
| Target accuracy | monthly relative bias : 10 %, monthly relative std. dev. : 30 % |
| Optimal accuracy | monthly relative bias : 0 %, monthly relative std. dev. : 10 % |
| Verification/ validation methods | Routine comparison with pyranometer measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | GRIB, NetCDF, HDF5 |
| Applications and users | * NWP, * Ocean and biological modeling at operational and research centers |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|-------------------------------------|---|
| Name | AHL Surface Solar Irradiance |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-302-b |
| Acronym | AHL SSI |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | AVHRR, VIIRS (NPP, JPSS) |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | 12:00 |
| Timeliness | 3 h 30 |
| Spatial coverage | Atlantic North of 50N |
| Spatial sampling | 5 km |
| Projection | Polar Stereographic |
| Characteristics & methods | Bulk parameterization, including over sea ice |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | monthly relative bias : 20 %, monthly relative std. dev. : 50 % |
| Target accuracy | monthly relative bias : 10 %, monthly relative std. dev. : 30 % |
| Optimal accuracy | monthly relative bias : 0 %, monthly relative std. dev. : 10 % |
| Verification/ validation methods | Routine comparison with pyranometer measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | GRIB, NetCDF, HDF5 |
| Applications and users | * NWP, * Ocean and biological modeling at operational and research centers |
| COMMENTS | |
| Will replace OSI-302. | |

| IDENTIFICATION | |
|---|---|
| Name | AHL Surface Solar Irradiance |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-302-c |
| Acronym | AHL SSI |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | AVHRR, VIIRS (NPP, JPSS) |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | 12:00 |
| Timeliness | 3 h 30 |
| Spatial coverage | Atlantic North of 50N |
| Spatial sampling | 5 km |
| Projection | Polar Stereographic |
| Characteristics & methods | Bulk parameterization, including over sea ice |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | monthly relative bias : 20 %, monthly relative std. dev. : 50 % |
| Target accuracy | monthly relative bias : 10 %, monthly relative std. dev. : 30 % |
| Optimal accuracy | monthly relative bias : 0 %, monthly relative std. dev. : 10 % |
| Verification/ validation methods | Routine comparison with pyranometer measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | GRIB NetCDF |
| Applications and users | * NWP, * Ocean and biological modeling at operational and research centers |
| COMMENTS | |
| Will replace OSI-302-b. Include Metop-C. | |

| IDENTIFICATION | |
|--|---|
| Name | METEOSAT Downward Longwave Irradiance |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-303 |
| Acronym | MET DLI |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | MSG / SEVIRI |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 1 h – 24 h |
| Central time | |
| Timeliness | 2 h |
| Spatial coverage | East Atlantic, West Indian: 60N-60S 60W-60E |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | |
| Characteristics & methods | Bulk parametrization |
| ACCURACY REQUIREMENTS (on hourly products) | |
| Threshold accuracy | monthly relative bias : 10 %, monthly relative std. dev. : 20 % |
| Target accuracy | monthly (TBC) relative bias : 5 %, monthly relative std. dev. : 10 % |
| Optimal accuracy | monthly relative bias : 0 %, monthly relative std. dev. : 3 % |
| Verification/ validation methods | Routine comparison with pyrgeometer measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF, GRIB2 |
| Applications and users | Ocean atmosphere studies |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|--|---|
| Name | METEOSAT Downward Longwave Irradiance |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-303-a |
| Acronym | MET DLI |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | MSG4/ SEVIRI |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 1 h – 24 h |
| Central time | |
| Timeliness | 2 h |
| Spatial coverage | East Atlantic, West Indian: 60N-60S 60W-60E |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | |
| Characteristics & methods | Bulk parametrization |
| ACCURACY REQUIREMENTS (on hourly products) | |
| Threshold accuracy | monthly relative bias : 10 %, monthly relative std. dev. : 20 % |
| Target accuracy | monthly (TBC) relative bias : 5 %, monthly relative std. dev. : 10 % |
| Optimal accuracy | monthly relative bias : 0 %, monthly relative std. dev. : 3 % |
| Verification/ validation methods | Routine comparison with pyrgeometer measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF, GRIB2 |
| Applications and users | Ocean atmosphere studies |
| COMMENTS | |
| MSG4 replaces MSG3. Will replace OSI-303. | |

| IDENTIFICATION | | |
|--|---|---------------|
| Name | METEOSAT Downward Longwave Irradiance | |
| Description | | |
| Product type | NRT Product | |
| Identifier | OSI-303-b | |
| Acronym | MET DLI | |
| CHARACTERISTICS | | |
| Processing level | | |
| Satellite input | MTG / FCI | |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) | |
| Frequency | 1 h - 24 h | |
| Central time | | |
| Timeliness | 35 min for hourly product, 65 min for daily product | |
| Spatial coverage | East Atlantic, West Indian: 60N-60S 60W-60E | |
| Spatial sampling | 0.05° Lat-Lon | |
| Projection | | |
| Characteristics & methods | Bulk parametrization | |
| ACCURACY REQUIREMENTS | | |
| | Hourly product | Daily product |
| Threshold accuracy | monthly relative bias : 10 %, | |
| | monthly relative std. Dev. : 20 % | 10 % |
| Target accuracy | monthly (TBC) relative bias : 5 % | |
| | monthly relative std. Dev. : 10 % | 5 % |
| Optimal accuracy | monthly relative bias : 0 % | |
| | monthly relative std. Dev. : 3 % | 2 % |
| Verification/validation methods | Routine comparison with pyrgeometer measurements | |
| DATA ACCESS | | |
| Dissemination means | FTP server, EUMETCast, EDC | |
| Format | NetCDF | |
| Applications and users | Ocean atmosphere studies | |
| COMMENTS | | |
| MTG replaces MSG. Will replace OSI-303-a. | | |

| IDENTIFICATION | |
|--|--|
| Name | METEOSAT Surface Solar Irradiance |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-304 |
| Acronym | MET SSI |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | MSG / SEVIRI |
| Other input | NA |
| Frequency | 1 h - 24 h |
| Central time | |
| Timeliness | 2 h |
| Spatial coverage | East Atlantic, West Indian: 60N-60S 60W-60E |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | |
| Characteristics & methods | Physical method |
| ACCURACY REQUIREMENTS (on hourly products) | |
| Threshold accuracy | monthly relative bias : 20 %, monthly relative std. dev. : 50 % |
| Target accuracy | monthly (TBC) relative bias : 10 %, monthly relative std. dev. : 30 % |
| Optimal accuracy | monthly relative bias : 0 %, monthly relative std. dev. : 10 % |
| Verification/ validation methods | Routine comparison with pyranometer measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF, GRIB2 |
| Applications and users | Ocean atmosphere studies |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|--|--|
| Name | METEOSAT Surface Solar Irradiance |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-304-a |
| Acronym | MET SSI |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | MSG4/ SEVIRI |
| Other input | NA |
| Frequency | 1 h – 24 h |
| Central time | |
| Timeliness | 2 h |
| Spatial coverage | East Atlantic, West Indian: 60N-60S 60W-60E |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | |
| Characteristics & methods | Physical method |
| ACCURACY REQUIREMENTS (on hourly products) | |
| Threshold accuracy | monthly relative bias : 20 %, monthly relative std. dev. : 50 % |
| Target accuracy | monthly (TBC) relative bias : 10 %, monthly relative std. dev. : 30 % |
| Optimal accuracy | monthly relative bias : 0 %, monthly relative std. dev. : 10 % |
| Verification/ validation methods | Routine comparison with pyranometer measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF, GRIB2 |
| Applications and users | Ocean atmosphere studies |
| COMMENTS | |
| MSG4 replaces MSG3. Will replace OSI-304. | |

| IDENTIFICATION | | |
|--|---|---------------|
| Name | METEOSAT Surface Solar Irradiance | |
| Description | | |
| Product type | NRT Product | |
| Identifier | OSI-304-b | |
| Acronym | MET SSI | |
| | | |
| CHARACTERISTICS | | |
| Processing level | | |
| Satellite input | MTG / FCI | |
| Other input | NA | |
| Frequency | 1 h – 24 h | |
| Central time | | |
| Timeliness | 35 min for hourly product, 65 min for daily product | |
| Spatial coverage | East Atlantic, West Indian: 60N-60S 60W-60E | |
| Spatial sampling | 0.05° Lat-Lon | |
| Projection | | |
| Characteristics & methods | Physical method | |
| | | |
| ACCURACY REQUIREMENTS | | |
| | Hourly product | Daily product |
| Threshold accuracy | monthly relative bias : 20 %, | |
| | monthly relative std. Dev. : 50 % | 25 % |
| Target accuracy | monthly (TBC) relative bias : 10 % | |
| | monthly relative std. Dev. : 30 % | 15 % |
| Optimal accuracy | monthly relative bias : 0 % | |
| | monthly relative std. Dev. : 10 % | 5 % |
| Verification/validation methods | Routine comparison with pyranometer measurements | |
| | | |
| DATA ACCESS | | |
| Dissemination means | FTP server, EUMETCast, EDC | |
| Format | NetCDF | |
| Applications and users | Ocean atmosphere studies | |
| | | |
| COMMENTS | | |
| MTG replaces MSG. Will replace OSI-304-a. | | |

| IDENTIFICATION | |
|--|---|
| Name | GOES-E Downward Longwave Irradiance |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-305 |
| Acronym | GOES-E DLI |
| CHARACTERISTICS | |
| Processing level | L3 |
| Satellite input | GOES-E imager (GOES-13) |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 1 h – 24 h |
| Central time | |
| Timeliness | 2 h |
| Spatial coverage | West Atlantic East Pacific 60N-60S 135W-15W |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | |
| Characteristics & methods | Bulk parametrization |
| ACCURACY REQUIREMENTS (on hourly products) | |
| Threshold accuracy | monthly relative bias : 10 %, monthly relative std. dev. : 20 % |
| Target accuracy | monthly (TBC) relative bias : 5 %, monthly relative std. dev. : 10 % |
| Optimal accuracy | monthly relative bias : 0 %, monthly relative std. dev. : 3 % |
| Verification/ validation methods | Routine comparison with pyrgeometer measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF, GRIB2 |
| Applications and users | Ocean atmosphere studies |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|--|---|
| Name | GOES-E Downward Longwave Irradiance |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-305-a |
| Acronym | GOES-E DLI |
| CHARACTERISTICS | |
| Processing level | L3 |
| Satellite input | GOES-R ABI (GOES-16) |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 1 h – 24 h |
| Central time | |
| Timeliness | 2 h |
| Spatial coverage | West Atlantic East Pacific 60N-60S 135W-15W |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | |
| Characteristics & methods | Bulk parametrization |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | monthly relative bias : 10 %, monthly relative std. dev. : 20 % |
| Target accuracy | monthly (TBC) relative bias : 5 %, monthly relative std. dev. : 10 % |
| Optimal accuracy | monthly relative bias : 0 %, monthly relative std. dev. : 3 % |
| Verification/ validation methods | Routine comparison with pyrgeometer measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | Ocean atmosphere studies |
| COMMENTS | |
| <p>GOES new generation replaces GOES. This temporary product (processed with a temporary chain previously processing OSI-305) will replace OSI-305 and will be replaced by OSI-305-b.</p> | |

| IDENTIFICATION | |
|---|---|
| Name | GOES-E Downward Longwave Irradiance |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-305-b |
| Acronym | GOES-E DLI |
| CHARACTERISTICS | |
| Processing level | L3 |
| Satellite input | GOES-R ABI (GOES-16) |
| Other input | NWP outputs (temperature, humidity and aerosols profiles) |
| Frequency | 1 h – 24 h |
| Central time | |
| Timeliness | 2 h |
| Spatial coverage | West Atlantic East Pacific 60N-60S 135W-15W |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | |
| Characteristics & methods | Bulk parametrization |
| ACCURACY REQUIREMENTS (on hourly products) | |
| Threshold accuracy | monthly relative bias : 10 %, monthly relative std. dev. : 20 % |
| Target accuracy | monthly (TBC) relative bias : 5 %, monthly relative std. dev. : 10 % |
| Optimal accuracy | monthly relative bias : 0 %, monthly relative std. dev. : 3 % |
| Verification/ validation methods | Routine comparison with pyrgeometer measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | Ocean atmosphere studies |
| COMMENTS | |
| Will replace OSI-305-a Product processed with a new chain designed to process GOES new generation (GOES-16). | |

| IDENTIFICATION | |
|--|--|
| Name | GOES-E Surface Solar Irradiance |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-306 |
| Acronym | GOES-E SSI |
| CHARACTERISTICS | |
| Processing level | L3 |
| Satellite input | GOES-E imager (GOES-13) |
| Other input | NA |
| Frequency | 1 h – 24 h |
| Central time | |
| Timeliness | 2 h |
| Spatial coverage | West Atlantic East Pacific 60N-60S 135W-15W |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | |
| Characteristics & methods | Physical method |
| ACCURACY REQUIREMENTS (on hourly products) | |
| Threshold accuracy | monthly relative bias : 20 %, monthly relative std. dev. : 50 % |
| Target accuracy | monthly (TBC) relative bias : 10 %, monthly relative std. dev. : 30 % |
| Optimal accuracy | monthly relative bias : 0 %, monthly relative std. dev. : 10 % |
| Verification/ validation methods | Routine comparison with pyranometer measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF, GRIB2 |
| Applications and users | Ocean atmosphere studies |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|---|--|
| Name | GOES-E Surface Solar Irradiance |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-306-a |
| Acronym | GOES-E SSI |
| CHARACTERISTICS | |
| Processing level | L3 |
| Satellite input | GOES-R ABI (GOES-16) |
| Other input | NA |
| Frequency | 1 h – 24 h |
| Central time | |
| Timeliness | 2 h |
| Spatial coverage | West Atlantic East Pacific 60N-60S 135W-15W |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | |
| Characteristics & methods | Physical method |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | monthly relative bias : 20 %, monthly relative std. dev. : 50 % |
| Target accuracy | monthly (TBC) relative bias : 10 %, monthly relative std. dev. : 30 % |
| Optimal accuracy | monthly relative bias : 0 %, monthly relative std. dev. : 10 % |
| Verification/ validation methods | Routine comparison with pyranometer measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | Ocean atmosphere studies |
| COMMENTS | |
| <p>GOES new generation replaces GOES. This temporary product (processed with a temporary chain previously processing OSI-306) will replace OSI-306 and will be replaced by OSI-306-b.</p> | |

| IDENTIFICATION | |
|---|--|
| Name | GOES-E Surface Solar Irradiance |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-306-b |
| Acronym | GOES-E SSI |
| CHARACTERISTICS | |
| Processing level | L3 |
| Satellite input | GOES-R ABI (GOES-16) |
| Other input | NA |
| Frequency | 1 h – 24 h |
| Central time | |
| Timeliness | 2 h |
| Spatial coverage | West Atlantic East Pacific 60N-60S 135W-15W |
| Spatial sampling | 0.05° Lat-Lon |
| Projection | |
| Characteristics & methods | Physical method |
| ACCURACY REQUIREMENTS (on hourly products) | |
| Threshold accuracy | monthly relative bias : 20 %, monthly relative std. dev. : 50 % |
| Target accuracy | monthly (TBC) relative bias : 10 %, monthly relative std. dev. : 30 % |
| Optimal accuracy | monthly relative bias : 0 %, monthly relative std. dev. : 10 % |
| Verification/ validation methods | Routine comparison with pyranometer measurements |
| DATA ACCESS | |
| Dissemination means | FTP server, EUMETCast, EDC |
| Format | NetCDF |
| Applications and users | Ocean atmosphere studies |
| COMMENTS | |
| Will replace OSI-306-a Product processed with a new chain designed to process GOES new generation (GOES-16). | |

- OSI-PRD-PRO-101** Each grid node of a SSI and DLI product shall include the flux value and the confidence level of the flux value labelled on a five level scale: 5 = “excellent”, 4= “good”, 3=“acceptable”, 2=“bad”, 1=“erroneous”,and 0=“unprocessed”.
- OSI-PRD-PRO-102** Hourly SSI products quality shall be continuously quality controlled against a set of pyranometers measurement stations selected over land and gathered in a match-up data set.
- OSI-PRD-PRO-103** Hourly DLI products quality shall be continuously quality controlled against a set of pyrgeometer measurement stations selected over land and gathered in match-up data set.
- OSI-PRD-PRO-104** The DLI and SSI match-up data sets shall be available to interested users on request.
- OSI-PRD-PRO-105** GOES-E and MET satellite-derived SSI and DLI inter-comparison shall be made in overlapping areas.

6.3. Sea Ice requirements

The OSI SAF shall deliver the following Sea Ice products :

| IDENTIFICATION | |
|---------------------------------|---|
| Name | Global Sea Ice Concentration |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-401-b |
| Acronym | GBL SICO |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Daily averaged fractional ice cover in percentage. Include uncertainty estimates. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 20% ⁽⁴⁾ |
| Target accuracy | 10% for NH-product. 15% for SH-product ⁽⁴⁾ |
| Optimal accuracy | 10% ⁽⁴⁾ |
| Verification/validation methods | Comparison with high resolution manual ice charts |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | GRIB, NetCDF, HDF5 |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|--|---|
| Name | Global Sea Ice Concentration |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-401-d |
| Acronym | GBL SICO |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Daily averaged fractional ice cover in percentage. Include uncertainty estimates. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 20% ⁽⁴⁾ |
| Target accuracy | 10% for NH-product. 15% for SH-product ⁽⁴⁾ |
| Optimal accuracy | 10% ⁽⁴⁾ |
| Verification/validation methods | Comparison with high resolution manual ice charts |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | GRIB, NetCDF |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| Improve algorithm. Will replace OSI-401-b | |

| IDENTIFICATION | |
|--|---|
| Name | Global Sea Ice Concentration |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-401-e |
| Acronym | GBL SICO |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS, MWI |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Daily averaged fractional ice cover in percentage. Include uncertainty estimates. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 20% |
| Target accuracy | 10% for NH-product. 15% for SH-product |
| Optimal accuracy | 10% |
| Verification/validation methods | Comparison with high resolution manual ice charts |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | GRIB, NetCDF |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| Include EPS-SG Will replace OSI-401-d | |

| IDENTIFICATION | |
|---------------------------------|---|
| Name | Global Sea Ice Edge |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-402-b |
| Acronym | GBL SIED |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS, ASCAT |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Discrimination Open ice/Closed ice/No ice. Multisensor analysis, daily average. Risk mitigation against sensor degradation. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 30 km, distance to ice edge (yearly average) |
| Target accuracy | 20 km (yearly average) |
| Optimal accuracy | 10 km (yearly average) |
| Verification/validation methods | Comparison with high resolution manual ice charts |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | GRIB, NetCDF, HDF5 |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|---|---|
| Name | Global Sea Ice Edge |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-402-c |
| Acronym | GBL SIED |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS, ASCAT, AMSR-2 |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Discrimination Open ice/Closed ice/No ice. Multisensor analysis, daily average. Risk mitigation against sensor degradation. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NH : 30 km, distance to ice edge (yearly average) SH : 70 km, distance to ice edge (yearly average) |
| Target accuracy | NH : 20 km (yearly average) SH : 45 km (yearly average) |
| Optimal accuracy | 10 km (yearly average) |
| Verification/validation methods | Comparison with high resolution manual ice charts |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | GRIB, NetCDF, HDF5 |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| Include AMSR-2, ASCAT-B, DMSP-F18 Will replace OSI-402-b | |

| IDENTIFICATION | |
|--|---|
| Name | Global Sea Ice Edge |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-402-d |
| Acronym | GBL SIED |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS, ASCAT, AMSR-2 |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Discrimination Open ice/Closed ice/No ice. Multisensor analysis, daily average. Risk mitigation against sensor degradation. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 30 km, distance to ice edge (yearly average) |
| Target accuracy | 20 km (yearly average) |
| Optimal accuracy | 10 km (yearly average) |
| Verification/validation methods | Comparison with high resolution manual ice charts |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | GRIB, NetCDF |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| Improve algorithm. Will replace OSI-402-c | |

| IDENTIFICATION | |
|--|--|
| Name | Global Sea Ice Edge |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-402-e |
| Acronym | GBL SIED |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS, ASCAT, AMSR-2 + MWI, SCA |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Discrimination Open ice/Closed ice/No ice. Multisensor analysis, daily average. Risk mitigation against sensor degradation. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 30 km, distance to ice edge (yearly average) |
| Target accuracy | 20 km (yearly average) |
| Optimal accuracy | 10 km (yearly average) |
| Verification/validation methods | Comparison with high resolution manual ice charts |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | GRIB, NetCDF |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| Include EPS-SG Will replace OSI-402-d | |

| IDENTIFICATION | |
|---|---|
| Name | Global Sea Ice Type |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-403-b |
| Acronym | GBL SITY |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS, ASCAT |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Discrimination First year, Multi year. Multisensor analysis, daily average. Risk mitigation against sensor degradation. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 200000 km ² monthly std.dev. in difference from running mean. |
| Target accuracy | 100000 km ² monthly std.dev. in difference from running mean. |
| Optimal accuracy | 50000 km ² monthly std.dev. in difference from running mean. |
| Verification/validation methods | Compare NH mult-year area with 11-days running mean ⁽¹⁾ |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | GRIB, NetCDF, HDF5 |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| <p>(1) Monitoring/validation of ice type : There are no routinely updated sea ice type in situ measurements available, so monitoring of the sea ice type product is done by monitoring the daily variation in area extent of the multi-year sea ice type fraction through the season. This daily area extent is compared against a 11-days running mean, and should not vary too much.</p> | |

| IDENTIFICATION | |
|---|---|
| Name | Global Sea Ice Type |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-403-c |
| Acronym | GBL SITY |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS, ASCAT, AMSR-2 |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Discrimination First year, Multi year. Multisensor analysis, daily average. Risk mitigation against sensor degradation. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 200000 km ² monthly std.dev. in difference from running mean. |
| Target accuracy | 100000 km ² monthly std.dev. in difference from running mean. |
| Optimal accuracy | 50000 km ² monthly std.dev. in difference from running mean. |
| Verification/validation methods | Compare NH mult-year area with 11-days running mean ⁽¹⁾ |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | GRIB, NetCDF, HDF5 |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| Include AMSR-2, ASCAT-B, DMSP-F18 Will replace OSI-402-b (1) Monitoring/validation of ice type : There are no routinely updated sea ice type in situ measurements available, so monitoring of the sea ice type product is done by monitoring the daily variation in area extent of the multi-year sea ice type fraction through the season. This daily area extent is compared against a 11-days running mean, and should not vary too much. | |

| IDENTIFICATION | |
|--|---|
| Name | Global Sea Ice Type |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-403-d |
| Acronym | GBL SITY |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS, ASCAT, AMSR-2 |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Discrimination First year, Multi year. Multisensor analysis, daily average. Risk mitigation against sensor degradation. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 200000 km ² monthly std.dev. in difference from running mean. |
| Target accuracy | 100000 km ² monthly std.dev. in difference from running mean. |
| Optimal accuracy | 50000 km ² monthly std.dev. in difference from running mean. |
| Verification/validation methods | Compare NH mult-year area with 11-days running mean ⁽¹⁾ |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | GRIB, NetCDF |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| <p>Improve algorithm. Will replace OSI-403-c</p> <p>(1) Monitoring/validation of ice type : There are no routinely updated sea ice type in situ measurements available, so monitoring of the sea ice type product is done by monitoring the daily variation in area extent of the multi-year sea ice type fraction through the season. This daily area extent is compared against a 11-days running mean, and should not vary too much.</p> | |

| IDENTIFICATION | |
|--|---|
| Name | Global Sea Ice Type |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-403-e |
| Acronym | GBL SITY |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS, ASCAT, AMSR-2 + +MWI,SCA |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Discrimination First year, Multi year. Multisensor analysis, daily average. Risk mitigation against sensor degradation. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 200000 km2 monthly std.dev. in difference from running mean. |
| Target accuracy | 100000 km2 monthly std.dev. in difference from running mean. |
| Optimal accuracy | 50000 km2 monthly std.dev. in difference from running mean. |
| Verification/validation methods | Compare NH mult-year area with 11-days running mean |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | GRIB, NetCDF |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| Include EPS-SG Will replace OSI-403-d | |

| IDENTIFICATION | |
|---------------------------------|---|
| Name | Global Sea Ice Emissivity |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-404 |
| Acronym | GBL SIEM |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS |
| Other input | None |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Sea ice emissivity at 50GHz, daily average. Simulated with measured coefficients |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 15% (yearly average) ⁽⁴⁾ |
| Target accuracy | 5% (yearly average) ⁽⁴⁾ |
| Optimal accuracy | 1% (yearly average) ⁽⁴⁾ |
| Verification/validation methods | Compare with RTM simulations using NWP |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | NetCDF, (GRIB if requested) |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|--|---|
| Name | Global Sea Ice Emissivity |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-404-a |
| Acronym | GBL SIEM |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS |
| Other input | None |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Sea ice emissivity at 50GHz, daily average. Simulated with measured coefficients Including uncertainties. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 15% (yearly average) ⁽⁴⁾ |
| Target accuracy | 5% (yearly average) ⁽⁴⁾ |
| Optimal accuracy | 1% (yearly average) ⁽⁴⁾ |
| Verification/validation methods | Compare with RTM simulations using NWP |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | NetCDF, (GRIB if requested) |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| Include uncertainties and internal temperature Will replace OSI-404 | |

| IDENTIFICATION | |
|--|---|
| Name | Global Sea Ice Emissivity |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-404-b |
| Acronym | GBL SIEM |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS |
| Other input | None |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Sea ice emissivity at 50GHz, daily average. Simulated with measured coefficients Including uncertainties. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 15% (yearly average) ⁽⁴⁾ |
| Target accuracy | 5% (yearly average) ⁽⁴⁾ |
| Optimal accuracy | 1% (yearly average) ⁽⁴⁾ |
| Verification/validation methods | Compare with RTM simulations using NWP |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | NetCDF, (GRIB if requested) |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| Improve algorithm. Will replace OSI-404-a | |

| IDENTIFICATION | |
|--|---|
| Name | Global Sea Ice Emissivity |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-404-e |
| Acronym | GBL SIEM |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | MWI |
| Other input | None |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Sea ice emissivity at 50GHz, daily average. Simulated with measured coefficients Including uncertainties. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 15% (yearly average) |
| Target accuracy | 5% (yearly average) |
| Optimal accuracy | 1% (yearly average) |
| Verification/validation methods | Compare with RTM simulations using NWP |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | NetCDF, (GRIB if requested) |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| Include EPS-SG Will replace OSI-404-b | |

| IDENTIFICATION | |
|---------------------------------|---|
| Name | Global Low Resolution Sea Ice Drift |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-405-b |
| Acronym | GBL LR SIDR |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS, ASCAT, AMSR-2 |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 6 h |
| Spatial coverage | Global |
| Spatial sampling | 62.5 km |
| Projection | |
| Characteristics & methods | Single and multi sensor analysis. Displacement after 48 hours in km. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 10 km yearly std. dev. after 48 hours displacement |
| Target accuracy | 5 km yearly std. dev. after 48 hours displacement |
| Optimal accuracy | 2 km yearly std. dev. after 48 hours displacement |
| Verification/validation methods | Collocation with buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | NetCDF, (GRIB if requested) |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|--|---|
| Name | Global Low Resolution Sea Ice Drift |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-405-c |
| Acronym | GBL LR SIDR |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS, ASCAT, AMSR-2 |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 6 h |
| Spatial coverage | Global |
| Spatial sampling | 62.5 km |
| Projection | |
| Characteristics & methods | Single and multi sensor analysis. Displacement after 48 hours in km. Including uncertainties. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 10 km yearly std. dev. after 48 hours displacement |
| Target accuracy | 5 km yearly std. dev. after 48 hours displacement |
| Optimal accuracy | 2 km yearly std. dev. after 48 hours displacement |
| Verification/validation methods | Collocation with buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | NetCDF, (GRIB if requested) |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| Include uncertainties, improve in summer Will replace OSI-405-b | |

| IDENTIFICATION | |
|--|---|
| Name | Global Low Resolution Sea Ice Drift |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-405-d |
| Acronym | GBL LR SIDR |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS, ASCAT, AMSR-2 |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 6 h |
| Spatial coverage | Global |
| Spatial sampling | 62.5 km |
| Projection | |
| Characteristics & methods | Single and multi sensor analysis. Displacement after 48 hours in km. Including uncertainties. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 10 km yearly std. dev. after 48 hours displacement |
| Target accuracy | 5 km yearly std. dev. after 48 hours displacement |
| Optimal accuracy | 2 km yearly std. dev. after 48 hours displacement |
| Verification/validation methods | Collocation with buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | NetCDF (GRIB if requested) |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| Improve algorithm and include Metop-C. Will replace OSI-405-c | |

| IDENTIFICATION | |
|--|---|
| Name | Global Low Resolution Sea Ice Drift |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-405-e |
| Acronym | GBL LR SIDR |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS, ASCAT, AMSR-2 +MWI,SCA |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 6 h |
| Spatial coverage | Global |
| Spatial sampling | 62.5 km |
| Projection | |
| Characteristics & methods | Single and multi sensor analysis. Displacement after 48 hours in km. Including uncertainties. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 10 km yearly std. dev. after 48 hours displacement |
| Target accuracy | 5 km yearly std. dev. after 48 hours displacement |
| Optimal accuracy | 2 km yearly std. dev. after 48 hours displacement |
| Verification/ validation methods | Collocation with buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | NetCDF (GRIB if requested) |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| Include EPS-SG Will replace OSI-405-d | |

| IDENTIFICATION | |
|---------------------------------|---|
| Name | Medium Resolution Sea Ice Drift |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-407 |
| Acronym | NH MR SIDR |
| CHARACTERISTICS | |
| Processing level | L3 |
| Satellite input | AVHRR |
| Other input | NWP outputs |
| Frequency | 12 h |
| Central time | ~06:00, ~18:00 |
| Timeliness | 6 h |
| Spatial coverage | Northern Hemisphere |
| Spatial sampling | 20 km |
| Projection | Polar Stereographic |
| Characteristics & methods | Single sensor analysis. Displacement after 24 hours in km. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 5 km yearly std. dev. after 24 hours displacement |
| Target accuracy | 2 km yearly std. dev. after 24 hours displacement |
| Optimal accuracy | 1 km yearly std. dev. after 24 hours displacement |
| Verification/validation methods | Collocation with buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | NetCDF, (GRIB if requested) |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|---|--|
| Name | Medium Resolution Sea Ice Drift |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-407-a |
| Acronym | NH MR SIDR |
| CHARACTERISTICS | |
| Processing level | L3 |
| Satellite input | AVHRR |
| Other input | NWP outputs |
| Frequency | 6 h |
| Central time | ~00:00, ~06:00, ~12:00, ~18:00 |
| Timeliness | 6 h |
| Spatial coverage | Northern Hemisphere |
| Spatial sampling | 20 km |
| Projection | Polar Stereographic |
| Characteristics & methods | Single sensor analysis. Displacement after 24 hours in km. Including uncertainties |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 5 km yearly std. dev. after 24 hours displacement |
| Target accuracy | 2 km yearly std. dev. after 24 hours displacement |
| Optimal accuracy | 1 km yearly std. dev. after 24 hours displacement |
| Verification/validation methods | Collocation with buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | NetCDF, (GRIB if requested) |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| Include uncertainties Will replace OSI-407 | |

| IDENTIFICATION | |
|---|--|
| Name | Medium Resolution Sea Ice Drift |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-407-b |
| Acronym | NH MR SIDR |
| CHARACTERISTICS | |
| Processing level | L3 |
| Satellite input | AVHRR |
| Other input | NWP outputs |
| Frequency | 6 h |
| Central time | ~00:00, ~06:00, ~12:00, ~18:00 |
| Timeliness | 6 h |
| Spatial coverage | Northern Hemisphere |
| Spatial sampling | 20 km |
| Projection | Polar Stereographic |
| Characteristics & methods | Single sensor analysis. Displacement after 24 hours in km. Including uncertainties |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 5 km yearly std. dev. after 24 hours displacement |
| Target accuracy | 2 km yearly std. dev. after 24 hours displacement |
| Optimal accuracy | 1 km yearly std. dev. after 24 hours displacement |
| Verification/validation methods | Collocation with buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | NetCDF (GRIB if requested) |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| Include Metop-C Will replace OSI-407-a | |

| IDENTIFICATION | |
|---------------------------------|--|
| Name | Global AMSR Sea Ice Concentration |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-408 |
| Acronym | GBL AMSR SICO |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | AMSR-2 |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Daily averaged fractional ice cover in percentage |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 20% ⁽⁴⁾ |
| Target accuracy | 10% for NH-product. 15% for SH-product ⁽⁴⁾ |
| Optimal accuracy | 10% ⁽⁴⁾ |
| Verification/validation methods | Comparison with high spatial resolution manual ice charts (available between twice a week and once a week) : the performance shall be valid for the total range of ice percentage (not limited to "ice" (100% ice) and "water" (0 % ice) conditions) |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | GRIB, NetCDF |
| Applications and users | * Climate models, * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|--|--|
| Name | Global AMSR Sea Ice Concentration |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-408-a |
| Acronym | GBL AMSR SICO |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | AMSR-2 |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 5 h |
| Spatial coverage | Global |
| Spatial sampling | 10 km |
| Projection | |
| Characteristics & methods | Daily averaged fractional ice cover in percentage |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 20% ⁽⁴⁾ |
| Target accuracy | 10% for NH-product. 15% for SH-product ⁽⁴⁾ |
| Optimal accuracy | 10% ⁽⁴⁾ |
| Verification/validation methods | Comparison with high spatial resolution manual ice charts (available between twice a week and once a week) : the performance shall be valid for the total range of ice percentage (not limited to “ice” (100% ice) and “water” (0 % ice) conditions) |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | GRIB, NetCDF |
| Applications and users | * Climate models, * NWP and Ocean/Ice models, * Operational Met and Sea Ice services |
| COMMENTS | |
| Improve algorithm. Will replace OSI-408 | |

| IDENTIFICATION | |
|---------------------------------|--|
| Name | L2 PMW sea ice concentration |
| Description | Sea ice concentration product on satellite swath for SSMIS and AMSR-2 instruments. The product is delivered on the native spatial sampling, and with separate product files for SSMIS and AMSR-2. For both SSMIS and AMSR-2 the low frequency channels (19V, 37H and 37V) are used. For the AMSR-2 also the two high frequency channels (89H and 89V) are used. The product also includes uncertainty estimates and product quality flags. |
| Product type | NRT Product |
| Identifier | OSI-410 |
| Acronym | L2 SICO |
| CHARACTERISTICS | |
| Processing level | L2 |
| Satellite input | SSMIS, AMSR-2 |
| Other input | NWP outputs |
| Frequency | Up to 15 times per day for each SSMIS satellite, and 30 times per day for AMSR-2. The difference in frequency is due to the recipient of input data. SSMIS is received per orbit while AMSR-2 is received per half-orbit. |
| Central time | NA |
| Timeliness | 220 min (from last observation time on swath to product dissemination) |
| Spatial coverage | Global |
| Spatial sampling | SSMIS: 25 km, AMSR-2: 10 km |
| Projection | Swath |
| Characteristics & methods | L2 fractional ice cover in percentage |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 20 % ⁽⁴⁾ |
| Target accuracy | 10 % for NH-product, 15 % for SH-product ⁽⁴⁾ |
| Optimal accuracy | 5 % ⁽⁴⁾ |
| Verification/validation methods | Comparison with high resolution manual ice charts (Frequency of availability between once a day and once a week): the performance shall be validated for only the “ice” (100 % ice) and “water” (0 % ice) cases, separately. |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP, EDC |
| Format | NetCDF |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services. |
| COMMENTS | |
| New product | |

| IDENTIFICATION | |
|--|--|
| Name | L2 PMW sea ice concentration |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-410-a |
| Acronym | L2 SICO |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS, AMSR-2 |
| Other input | NWP outputs |
| Frequency | Continuous |
| Central time | |
| Timeliness | TBD |
| Spatial coverage | Global |
| Spatial sampling | 12.5 km / 25 km |
| Projection | |
| Characteristics & methods | L2 fractional ice cover in percentage |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | TBD |
| Target accuracy | TBD |
| Optimal accuracy | TBD |
| Verification/validation methods | Comparison with high resolution manual ice charts |
| DATA ACCESS | |
| Dissemination means | |
| Format | NetCDF |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services. |
| COMMENTS | |
| Improve algorithm. Will replace OSI-410 | |

| IDENTIFICATION | |
|---------------------------------|--|
| Name | L2 PMW sea ice concentration |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-410-e |
| Acronym | L2 SICO |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS, AMSR-2, MWI |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | TBD |
| Spatial coverage | Global |
| Spatial sampling | 12.5 km / 25 km |
| Projection | |
| Characteristics & methods | L2 fractional ice cover in percentage |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | TBD |
| Target accuracy | TBD |
| Optimal accuracy | 0% |
| Verification/validation methods | Comparison with high resolution manual ice charts |
| DATA ACCESS | |
| Dissemination means | |
| Format | NetCDF |
| Applications and users | * NWP and Ocean/Ice models, * Operational Met and Sea Ice services. |
| COMMENTS | |
| Include EPS-SG MWI | |

| IDENTIFICATION | |
|---|--|
| Name | Global continuous reprocessed Sea Ice Concentration |
| Description | |
| Product type | Off line product |
| Identifier | OSI-430 ⁽²⁾ |
| Acronym | GBL REPU SICO |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SSMIS from EUMETCast |
| Other input | NWP outputs |
| Frequency | 24 h |
| Central time | |
| Timeliness | 1 month |
| Spatial coverage | Global |
| Spatial sampling | 10 km and 12.5 km ⁽³⁾ |
| Projection | |
| Characteristics & methods | Daily averaged fractional ice cover in percentage. Fully consistent with with OSI-409, to ensure homogeneity. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 20 % (yearly average) ⁽⁴⁾ |
| Target accuracy | 10% for NH-product. 15% for SH-product ⁽⁴⁾ |
| Optimal accuracy | 10% ⁽⁴⁾ |
| Verification/validation methods | Comparison with high spatial resolution manual ice charts (available between twice a week and once a week) : the performance shall be valid for the total range of ice percentage (not limited to “ice” (100% ice) and “water” (0 % ice) conditions) |
| DATA ACCESS | |
| Dissemination means | FTP, EDC |
| Format | NetCDF |
| Applications and users | * Climate models, * NWP and Ocean/Ice hindcast models, * Environmental agencies |
| COMMENTS | |
| (3) The products are provided in two different projections/grids. Polar stereographic at 10km and Lambert azimuthal at 12.5km. Both are provided to be consistent with NSIDC products. Will be replaced by OSI-430-b | |

| IDENTIFICATION | |
|--|---|
| Name | Global Sea Ice Concentration interim climate data record, release 2 |
| Description | |
| Product type | Off line product |
| Identifier | OSI-430-b ⁽²⁾ |
| Acronym | GBL SICO ICDR 2 |
| CHARACTERISTICS | |
| Processing level | L3/L4 |
| Satellite input | SSMIS from EUMETCast |
| Other input | NWP outputs |
| Frequency | 24 h |
| Time period | From 01/01/2016 |
| Central time | 12:00 |
| Timeliness | 1 month |
| Spatial coverage | Global |
| Spatial sampling | 25 km |
| Projection | Lambert azimuthal |
| Characteristics & methods | Daily averaged fractional ice cover in percentage. Includes per-grid cell uncertainties. Fully consistent with OSI-450, to ensure homogeneity. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 15 % ⁽⁴⁾ |
| Target accuracy | 8 % ⁽⁴⁾ |
| Optimal accuracy | 5 % ⁽⁴⁾ |
| Verification/validation methods | Comparison with high spatial resolution manual ice charts (available between twice a week and once a week) : the performance shall be validated for only the "ice" and "water" cases, separately. |
| DATA ACCESS | |
| Dissemination means | FTP, EDC |
| Format | NetCDF4 |
| Applications and users | * Climate models, * NWP and Ocean/Ice hindcast models, * Environmental agencies |
| COMMENTS | |
| <p>Same algorithms as OSI-450, improved wrt to OSI-430. Will replace OSI-430. Will be replaced by OSI-430-a. See note about spatial sampling in OSI-450 table.</p> | |

| IDENTIFICATION | |
|--|---|
| Name | Global Sea Ice Concentration interim climate data record, release 3 |
| Description | |
| Product type | Off line product |
| Identifier | OSI-430-a ⁽²⁾ |
| Acronym | GBL SICO ICDR 3 |
| CHARACTERISTICS | |
| Processing level | L3/L4 |
| Satellite input | SSMIS from EUMETCast |
| Other input | NWP outputs |
| Frequency | 24 h |
| Time period | TBD |
| Central time | 12:00 |
| Timeliness | 1 month |
| Spatial coverage | Global |
| Spatial sampling | 25 km |
| Projection | |
| Characteristics & methods | Daily averaged fractional ice cover in percentage. Includes per-grid cell uncertainties. Fully consistent with OSI-450-a, to ensure homogeneity. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 15 % ⁽⁴⁾ |
| Target accuracy | 8 % ⁽⁴⁾ |
| Optimal accuracy | 5 % ⁽⁴⁾ |
| Verification/validation methods | Comparison with high spatial resolution manual ice charts (available between twice a week and once a week) : the performance shall be validated for only the “ice” and “water” cases, separately. |
| DATA ACCESS | |
| Dissemination means | FTP, EDC |
| Format | NetCDF4 |
| Applications and users | * Climate models, * NWP and Ocean/Ice hindcast models, * Environmental agencies |
| COMMENTS | |
| Same algorithms as OSI-450-a, improved wrt to OSI-430-b. Will replace OSI-430-b. See note about spatial sampling in OSI-450 table. | |

| IDENTIFICATION | |
|---|--|
| Name | Global Sea Ice Concentration data record, release 1 |
| Description | |
| Product type | Data Record |
| Identifier | OSI-409 ⁽²⁾ , OSI-409-a ⁽²⁾ |
| Acronym | GBL REP SICO |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SMMR, SSM/I and SSMIS from CM SAF |
| Other input | ECMWF outputs |
| Frequency | 24 h |
| Time period | October 1978 – 15 April 2015 |
| Central time | 12:00 |
| Timeliness | Offline |
| Spatial coverage | Global |
| Spatial sampling | 10 km and 12.5 km ⁽³⁾ |
| Projection | |
| Characteristics & methods | Daily averaged fractional ice cover in percentage. Includes per-grid cell uncertainties. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 20% ⁽⁴⁾ |
| Target accuracy | 10% for NH-product. 15% for SH-product ⁽⁴⁾ |
| Optimal accuracy | 10% ⁽⁴⁾ |
| Verification/validation methods | Comparison with high spatial resolution manual ice charts (available between twice a week and once a week) : the performance shall be valid for the total range of ice percentage (not limited to “ice” (100% ice) and “water” (0 % ice) conditions) |
| DATA ACCESS | |
| Dissemination means | FTP, EDC |
| Format | NetCDF |
| Applications and users | * Climate models, * NWP and Ocean/Ice hindcast models, * Environmental agencies |
| COMMENTS | |
| ⁽³⁾ The products are provided in two different projections/grids. Polar stereographic at 10km and Lambert azimuthal at 12.5km. Both are provided to be consistent with NSIDC products. | |

| IDENTIFICATION | |
|--|---|
| Name | Global Sea Ice Concentration climate data record, release 2 |
| Description | |
| Product type | Data Record |
| Identifier | OSI-450 ⁽²⁾ |
| Acronym | GBL SICO CDR 2 |
| CHARACTERISTICS | |
| Processing level | L3/L4 |
| Satellite input | SMMR, SSM/I and SSMIS from CM SAF |
| Other input | NWP outputs |
| Frequency | 24 h |
| Time period | January 1979 – December 2015 |
| Central time | 12:00 |
| Timeliness | Offline |
| Spatial coverage | Global |
| Spatial sampling | 25 km |
| Projection | Lambert azimuthal |
| Characteristics & methods | Daily averaged fractional ice cover in percentage. Includes per-grid cell uncertainties. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 15% ⁽⁴⁾ |
| Target accuracy | 8% ⁽⁴⁾ |
| Optimal accuracy | 5% ⁽⁴⁾ |
| Verification/validation methods | Comparison with high spatial resolution manual ice charts (available between twice a week and once a week) : the performance shall be validated for only the “ice” and “water” cases, separately. |
| DATA ACCESS | |
| Dissemination means | FTP, EDC |
| Format | NetCDF4 |
| Applications and users | * Climate models, * NWP and Ocean/Ice hindcast models, * Environmental agencies |
| COMMENTS | |
| <p>Will replace OSI-409 and OSI-409-a</p> <p>Spatial sampling of OSI-450: The sensors entering OSI-450 do not justify the daily sea ice concentration fields to be presented at 10 or 12.5 km sampling without dedicated additional work on the processing algorithms and/or uncertainties. An EASE2 grid with 25 km resolution is a more sensible spatial sampling for OSI-450 (OSI-450 will go back to 1979 only, justified by the late start of ERA-Interim data).</p> | |

| IDENTIFICATION | |
|--|---|
| Name | Global Sea Ice Concentration climate data record, release 3 |
| Description | |
| Product type | Data Record |
| Identifier | OSI-450-a |
| Acronym | GBL SICO CDR 3 |
| CHARACTERISTICS | |
| Processing level | L3/L4 |
| Satellite input | SMMR, SSM/I and SSMIS from CM SAF |
| Other input | NWP outputs |
| Frequency | 24 h |
| Time period | January 1979 – December 2015+ |
| Central time | 12:00 |
| Timeliness | Offline |
| Spatial coverage | Global |
| Spatial sampling | 25 km |
| Projection | Lambert azimuthal |
| Characteristics & methods | Daily averaged fractional ice cover in percentage. Includes per-grid cell uncertainties. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | 15% ⁽⁴⁾ |
| Target accuracy | 8% ⁽⁴⁾ |
| Optimal accuracy | 5% ⁽⁴⁾ |
| Verification/ validation methods | Comparison with high spatial resolution manual ice charts (available between twice a week and once a week) : the performance shall be validated for only the “ice” and “water” cases, separately. |
| DATA ACCESS | |
| Dissemination means | FTP, EDC |
| Format | NetCDF4 |
| Applications and users | * Climate models, * NWP and Ocean/Ice hindcast models, * Environmental agencies |
| COMMENTS | |
| Extend period with new CM SAF PMW release. Will replace OSI-450. See note about spatial sampling in OSI-450 table. | |

| IDENTIFICATION | |
|---------------------------------|---|
| Name | Low Resolution Sea Ice Drift data record, release 1 |
| Description | |
| Product type | Data Record |
| Identifier | OSI-455 |
| Acronym | GBL LR SIDR CDR 1 |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | SMMR, SSM/I and SSMIS from CM SAF |
| Other input | NWP outputs |
| Frequency | 24 h |
| Time period | |
| Central time | |
| Timeliness | Offline |
| Spatial coverage | Global |
| Spatial sampling | 62.5 km |
| Projection | |
| Characteristics & methods | Single and multi sensor analysis. Displacement after 48 hours in km. |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | TBD |
| Target accuracy | TBD |
| Optimal accuracy | TBD |
| Verification/validation methods | Collocation with buoys |
| DATA ACCESS | |
| Dissemination means | FTP, EDC |
| Format | NetCDF |
| Applications and users | * Climate models, * NWP and Ocean/Ice hindcast models, * Environmental agencies |
| COMMENTS | |
| New product | |

| IDENTIFICATION | |
|----------------------------------|---|
| Name | AMSR Global Sea Ice Concentration climate data record, release 1 |
| Description | |
| Product type | Data Record |
| Identifier | OSI-458 |
| Acronym | AMSR GBL SICO CDR 1 |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | ASMR-E and AMSR-2 |
| Other input | NWP outputs |
| Frequency | 24 h |
| Time period | |
| Central time | |
| Timeliness | Offline |
| Spatial coverage | Global |
| Spatial sampling | 12.5 km |
| Projection | |
| Characteristics & methods | Daily averaged fractional ice cover in percentage |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | TBD |
| Target accuracy | TBD |
| Optimal accuracy | TBD |
| Verification/ validation methods | Comparison with high resolution manual ice charts |
| DATA ACCESS | |
| Dissemination means | FTP, EDC |
| Format | NetCDF |
| Applications and users | * Climate models, * NWP and Ocean/Ice hindcast models, * Environmental agencies |
| COMMENTS | |
| New product | |

Note : **Accuracy of the different sea ice products upgrades** : The target accuracy requirement of the sea ice products have usually not been changed for upgrades to the products, which is the case for other OSI SAF products also. But we do not introduce an algorithm update if the validation do not show equal or better performance. Still, some upgrades are not related to algorithm changes, but introduction of new sensors that improve resolution or coverage (***all sea ice products***).

(2) **Interaction with ESA CCI projects** : the Project Teams at MET Norway and DMI were engaged from December 2011 to January 2018 in a project with ESA under the Climate Change Initiative program. One aim of the project was to develop a time-series of sea ice concentration CDR, which is very similar in scope to the datasets developed in the OSI SAF. An agreement was reached between EUMETSAT (SAF Network) and ESA (CCI) that allowed coordinated R&D and processing of two self-standing SIC CDRs: OSI-450 (using SMMR, SSM/I, and SSMIS) from OSI SAF, and a CCI CDR (using AMSR-E and AMSR2). Both CDRs were released in 2017 independently of each others, and the ownership of each CDR is clear to everyone (different websites, documents, etc..). This coordination is a success. Mutual contributions to the CDRs are well acknowledged in the open by both parties.

For future phases of CCI+ on sea ice, it is anticipated to have similar arrangements than in the past : EUMETSAT OSI SAF would like to follow the same concept with ESA CCI+.

(4) **Sea Ice concentration and emissivity accuracy** : these numbers are standard deviation of the difference between sea ice concentration/emissivity and sea ice charts, averaged over one year.

OSI-PRD-PRO-200 Each grid node of a sea ice field shall contain the sea ice value and a confidence or uncertainty parameter.

OSI-PRD-PRO-201 The following quality control shall be implemented on sea ice products:

- monitor confidence parameters,
- for sea ice concentration and ice edge, compare ice estimates with ice analyses from regional ice centres,
- for northern hemisphere, ice type compare multi-year ice area estimates with running mean for consistency checking,
- for sea ice drift, compare drift estimate with drift of buoys or other installations on the ice reporting GPS position.

OSI-PRD-PRO-202 The low resolution ice drift product shall not be delivered during the summer season. The duration of the summer interruption can be different for each sensor, depending on the sensors sensitivity to atmospheric noise and surface melting.

OSI-PRD-PRO-203 The medium resolution ice drift product shall only deliver values in cloud free conditions.

- OSI-PRD-PRO-204** The OSI SAF shall reprocess the time series of SMMR, SSM/I and SSMIS data back to 1978 to expand the time series of global sea ice products.
- OSI-PRD-PRO-205** The OSI SAF shall test new methods for ensuring a climate consistent data set.
- OSI-PRD-PRO-206** The OSI SAF shall improve the coverage of the existing sea ice concentration, edge and type products by adding interpolation in the coastal zone and the area close to the pole where there is no satellite data coverage.
- OSI-PRD-PRO-207** (removed)
- OSI-PRD-PRO-208** The Sea Ice Regional Edge product (OSI-406) shall be only valid when the sun is above 5° elevation.
- OSI-PRD-PRO-209** The Sea Ice Regional Edge product (OSI-406) shall be monitored on PoD (Probability of Detection) and FAR (False Alarm Ratio), which definition is given in the OSI-406 validation report.

6.4. Wind products requirements

- OSI-PRD-PRO-300** The OSI SAF shall deliver the following Wind products :

| IDENTIFICATION | |
|----------------------------------|---|
| Name | ASCAT 25 km Winds |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-102 |
| Acronym | ASCAT25 |
| CHARACTERISTICS | |
| Processing level | L2 |
| Satellite input | Metop-A/ ASCAT |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | Continuous |
| Central time | |
| Timeliness | 2 h 45 |
| Spatial coverage | Global |
| Spatial sampling | 25 km |
| Projection | |
| Characteristics & methods | Swath sigma0's, wind vectors and ice probabilities |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP server, GTS, EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Operational Met Services (including assimilation in at least 8 NWP models, nowcasting) * Operational analyses and ocean models * Research or Environmental monitoring |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|----------------------------------|---|
| Name | ASCAT 25 km Winds |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-102-b |
| Acronym | ASCAT25 |
| CHARACTERISTICS | |
| Processing level | L2 |
| Satellite input | Metop-B/ ASCAT |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | Continuous |
| Central time | |
| Timeliness | 2 h 45 |
| Spatial coverage | Global |
| Spatial sampling | 25 km |
| Projection | |
| Characteristics & methods | Swath sigma0's, wind vectors and ice probabilities |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP server, GTS, EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Operational Met Services (including assimilation in at least 8 NWP models, nowcasting) * Operational analyses and ocean models * Research or Environmental monitoring |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|----------------------------------|---|
| Name | ASCAT 25 km Winds |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-102-c |
| Acronym | ASCAT25 |
| CHARACTERISTICS | |
| Processing level | L2 |
| Satellite input | Metop-C/ ASCAT |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | Continuous |
| Central time | |
| Timeliness | 2 h 45 |
| Spatial coverage | Global |
| Spatial sampling | 25 km |
| Projection | |
| Characteristics & methods | Swath sigma0's, wind vectors and ice probabilities |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP server, GTS, EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Operational Met Services (including assimilation in at least 8 NWP models, nowcasting) * Operational analyses and ocean models * Research or Environmental monitoring |
| COMMENTS | |
| Expected launch in 2018 | |

| IDENTIFICATION | |
|---|---|
| Name | ASCAT 25 km Winds |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-102-e |
| Acronym | ASCAT25 |
| CHARACTERISTICS | |
| Processing level | L2 |
| Satellite input | Metop-SG/ SCA |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | Continuous |
| Central time | |
| Timeliness | 2 h 45 |
| Spatial coverage | Global |
| Spatial sampling | 25 km |
| Projection | |
| Characteristics & methods | Swath sigma0's and wind vectors |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP server, GTS, EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Operational Met Services (including assimilation in at least 8 NWP models, nowcasting) * Operational analyses and ocean models * Research or Environmental monitoring |
| COMMENTS | |
| If a NRT 25 km L1b product is not available, this product will be based on full resolution data | |

| IDENTIFICATION | |
|----------------------------------|---|
| Name | ASCAT coastal Winds |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-104 |
| Acronym | ASCAT12+ |
| CHARACTERISTICS | |
| Processing level | L2 |
| Satellite input | Metop-A/ ASCAT |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | Continuous |
| Central time | |
| Timeliness | 2 h 45 |
| Spatial coverage | Global |
| Spatial sampling | 12.5 km |
| Projection | |
| Characteristics & methods | Swath sigma0's, wind vectors and ice probabilities |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP server, GTS, EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Operational Met Services (including assimilation in at least 8 NWP models, nowcasting) * Operational analyses and ocean models * Research or Environmental monitoring |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|----------------------------------|---|
| Name | ASCAT coastal Winds |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-104-b |
| Acronym | ASCAT12+ |
| CHARACTERISTICS | |
| Processing level | L2 |
| Satellite input | Metop-B/ ASCAT |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | Continuous |
| Central time | |
| Timeliness | 2 h 45 |
| Spatial coverage | Global |
| Spatial sampling | 12.5 km |
| Projection | |
| Characteristics & methods | Swath sigma0's, wind vectors and ice probabilities |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP server, GTS, EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Operational Met Services (including assimilation in at least 8 NWP models, nowcasting) * Operational analyses and ocean models * Research or Environmental monitoring |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|----------------------------------|---|
| Name | ASCAT coastal Winds |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-104-c |
| Acronym | ASCAT12+ |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Metop-C/ ASCAT |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | Continuous |
| Central time | |
| Timeliness | 2 h 45 |
| Spatial coverage | Global |
| Spatial sampling | 12.5 km |
| Projection | |
| Characteristics & methods | Swath sigma0's, wind vectors and ice probabilities |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP server, GTS, EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Operational Met Services (including assimilation in at least 8 NWP models, nowcasting) * Operational analyses and ocean models * Research or Environmental monitoring |
| COMMENTS | |
| Expected launch in 2018 | |

| IDENTIFICATION | |
|----------------------------------|---|
| Name | ASCAT coastal Winds |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-104-e |
| Acronym | ASCAT12+ |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Metop-SG/ SCA |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | Continuous |
| Central time | |
| Timeliness | 2 h 45 |
| Spatial coverage | Global |
| Spatial sampling | 12.5 km |
| Projection | |
| Characteristics & methods | Swath sigma0's and wind vectors |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP server, GTS, EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Operational Met Services (including assimilation in at least 8 NWP models, nowcasting) * Operational analyses and ocean models * Research or Environmental monitoring |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|----------------------------------|---|
| Name | CFOSAT winds |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-106 |
| Acronym | TBD |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | CFOSAT/ RFSCAT (France, China) |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | Continuous |
| Central time | |
| Timeliness | TBD |
| Spatial coverage | Global |
| Spatial sampling | TBD |
| Projection | |
| Characteristics & methods | Swath sigma0's and wind vectors |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP server, GTS, EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Operational Met Services (including assimilation in at least 8 NWP models, nowcasting) * Operational analyses and ocean models * Research or Environmental monitoring |
| COMMENTS | |
| Expected launch in 2018 | |

| IDENTIFICATION | |
|--|---|
| Name | RadipScat 25 km winds |
| Description | |
| Product type | Archived NRT Product |
| Identifier | OSI-109-c |
| Acronym | RSCAT25 |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | RapidScat Scatterometer on ISS |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | Continuous |
| Central time | |
| Timeliness | Offline |
| Spatial coverage | Between 56N and 56S |
| Spatial sampling | 25 km |
| Projection | |
| Characteristics & methods | Swath sigma0's and wind vectors |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | FTP server, EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Operational Met Services (including assimilation in at least 8 NWP models, nowcasting) * Operational analyses and ocean models * Research or Environmental monitoring |
| COMMENTS | |
| Discontinued since 19 August 2016. Archive available | |

| IDENTIFICATION | |
|--|---|
| Name | RadipScat 50 km winds |
| Description | |
| Product type | Archived NRT Product |
| Identifier | OSI-109-d |
| Acronym | RSCAT50 |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | RapidScat Scatterometer on ISS |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | Continuous |
| Central time | |
| Timeliness | Offline |
| Spatial coverage | Between 56N and 56S |
| Spatial sampling | 50 km |
| Projection | |
| Characteristics & methods | Swath sigma0's and wind vectors |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | FTP server, EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Operational Met Services (including assimilation in at least 8 NWP models, nowcasting) * Operational analyses and ocean models * Research or Environmental monitoring |
| COMMENTS | |
| Discontinued since 19 August 2016. Archive available | |

| IDENTIFICATION | |
|----------------------------------|---|
| Name | Feng-Yun 3E winds |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-111 |
| Acronym | TBD |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | FY-3E/ WindRAD |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | Continuous |
| Central time | |
| Timeliness | TBD |
| Spatial coverage | Global |
| Spatial sampling | TBD |
| Projection | |
| Characteristics & methods | Swath sigma0's and wind vectors |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP server, GTS, EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Operational Met Services * Operational analyses and ocean models * Research or Environmental monitoring |
| COMMENTS | |
| Expected launch in 2018 | |

| IDENTIFICATION | |
|----------------------------------|---|
| Name | ScatSat winds |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-112 |
| Acronym | TBD |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | ScatSat/ OSCAT |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | Continuous |
| Central time | |
| Timeliness | TBD |
| Spatial coverage | Global |
| Spatial sampling | 25 km, 50 km |
| Projection | |
| Characteristics & methods | Swath sigma0's and wind vectors |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP server, GTS, EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Operational Met Services * Operational analyses and ocean models * Research or Environmental monitoring |
| COMMENTS | |
| Launched on 26 September 2016 | |

| IDENTIFICATION | |
|----------------------------------|---|
| Name | Oceansat-3 winds |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-113 |
| Acronym | TBD |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Oceansat-3/ OSCAT |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | Continuous |
| Central time | |
| Timeliness | TBD |
| Spatial coverage | Global |
| Spatial sampling | 25 km, 50 km |
| Projection | |
| Characteristics & methods | Swath sigma0's and wind vectors |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP server, GTS, EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Operational Met Services * Operational analyses and ocean models * Research or Environmental monitoring |
| COMMENTS | |
| Expected launch in 2018 | |

| IDENTIFICATION | |
|----------------------------------|---|
| Name | Sea Surface wind speed |
| Description | |
| Product type | NRT Product |
| Identifier | OSI-130 |
| Acronym | MWIWS |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Metop-SG/ MWI |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | Continuous |
| Central time | |
| Timeliness | 2h45 |
| Spatial coverage | Global |
| Spatial sampling | 25 km (TBC) |
| Projection | |
| Characteristics & methods | Swath sigma0's and wind vectors |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EUMETCast, FTP server, GTS, EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Operational Met Services * Operational analyses and ocean models * Research or Environmental monitoring |
| COMMENTS | |
| New product | |

| IDENTIFICATION | |
|---------------------------------|---|
| Name | Metop-A ASCAT L2 25 km and 12.5 km winds data record, release 1 |
| Description | |
| Product type | Data Record |
| Identifier | OSI-150-a (25 km), OSI-150-b (12.5 km) |
| Acronym | ASCAT DR 1 |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | EUMETSAT Secr. reprocessed Metop-A ASCAT L1b |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | NA |
| Time period | 2007-2014 |
| Central time | |
| Timeliness | Offline |
| Spatial coverage | Global |
| Spatial sampling | 25 km, coastal at 12.5 km |
| Projection | Swath |
| Characteristics & methods | Swath sigma0's, wind vectors and ice probabilities |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Reanalyses * Ocean models, air-sea interaction * Climate research, Environmental monitoring |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|---|---|
| Name | Metop-A and Metop-B ASCAT L2 25 km and 12.5 km winds data record, release 2 |
| Description | |
| Product type | Data Record |
| Identifier | OSI-150-c (25 km), OSI-150-d (12.5 km) |
| Acronym | ASCAT DR 2 |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | EUMETSAT Secr. reprocessed Metop-A and Metop-B ASCAT L1b |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | NA |
| Time period | 2007-20?? |
| Central time | |
| Timeliness | Offline |
| Spatial coverage | Global |
| Spatial sampling | 25 km, coastal at 12.5 km |
| Projection | Swath |
| Characteristics & methods | Swath sigma0's, wind vectors and ice probabilities |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Reanalyses * Ocean models, air-sea interaction * Climate research, Environmental monitoring |
| COMMENTS | |
| Will replace OSI-150-a (25 km), OSI-150-b (12.5 km) | |

| IDENTIFICATION | |
|---------------------------------|---|
| Name | SeaWinds L2 25 km and 50 km winds data record, release 1 |
| Description | |
| Product type | Data Record |
| Identifier | OSI-151-a (25 km), OSI-151-b (50 km) |
| Acronym | SW DR 1 |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | QuikSCAT SeaWinds L2A from PO.DAAC |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | NA |
| Time period | 1999-2009 |
| Central time | |
| Timeliness | Offline |
| Spatial coverage | Global |
| Spatial sampling | 25km, 50 km |
| Projection | |
| Characteristics & methods | Swath sigma0's and wind vectors |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. Wind speed stability better than 0.1 m/s in 10 years. |
| Optimal accuracy | NA |
| Verification/validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EDC |
| Format | BUFR, NetCDF |
| Applications and users | * Reanalyses * Ocean models, air-sea interaction * Climate research, Environmental monitoring |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|---|---|
| Name | SeaWinds L2 25 km and 50 km winds data record, release 2 |
| Description | |
| Product type | Data Record |
| Identifier | OSI-151-c (25 km), OSI-151-d (50 km) |
| Acronym | SW DR 2 |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | QuikSCAT SeaWinds L2A from PO.DAAC |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | NA |
| Time period | 1999-2009 |
| Central time | |
| Timeliness | Offline |
| Spatial coverage | Global |
| Spatial sampling | 25km, 50 km |
| Projection | |
| Characteristics & methods | Swath sigma0's and wind vectors |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. Wind speed stability better than 0.1 m/s in 10 years. |
| Optimal accuracy | NA |
| Verification/validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EDC |
| Format | BUFR, NetCDF |
| Applications and users | * Reanalyses * Ocean models, air-sea interaction * Climate research, Environmental monitoring |
| COMMENTS | |
| Will replace OSI-151-a (25 km), OSI-151-b (50 km) | |

| IDENTIFICATION | |
|---------------------------------|---|
| Name | ERS SCAT L2 25 km winds data record, release 1 |
| Description | |
| Product type | Data Record |
| Identifier | OSI-152 |
| Acronym | ERS DR 1 |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | ERS-1 and ERS-2 SCAT reprocessed by ESA (SCIRoCCo project) |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | NA |
| Time period | 2 March 1992 to 15 January 2001 |
| Central time | |
| Timeliness | Offline |
| Spatial coverage | Global |
| Spatial sampling | 25 km |
| Projection | |
| Characteristics & methods | Swath sigma0's and wind vectors |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Reanalyses * Ocean models, air-sea interaction * Climate research, Environmental monitoring |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|----------------------------------|---|
| Name | ERS SCAT L2 25 km winds data record, release 2 |
| Description | |
| Product type | Data Record |
| Identifier | OSI-152-a |
| Acronym | ERS DR 1 |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | ERS-1 and ERS-2 SCAT reprocessed by ESA (SCIRoCCo project) |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | NA |
| Time period | 1991 - begin. of 2001 |
| Central time | |
| Timeliness | Offline |
| Spatial coverage | Global |
| Spatial sampling | 25 km |
| Projection | |
| Characteristics & methods | Swath sigma0's and wind vectors |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Reanalyses * Ocean models, air-sea interaction * Climate research, Environmental monitoring |
| COMMENTS | |
| Will replace OSI-152 | |

| IDENTIFICATION | |
|----------------------------------|---|
| Name | Oceansat-2 L2 25 km and 50 km winds data record, release 1 |
| Description | |
| Product type | Data Record |
| Identifier | OSI-153-a (25 km), OSI-153-b (50 km) |
| Acronym | OSCAT DR 1 |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Oceansat-2 scatterometer |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | NA |
| Time period | 2009-2014 |
| Central time | |
| Timeliness | Offline |
| Spatial coverage | Global |
| Spatial sampling | 25km, 50 km |
| Projection | |
| Characteristics & methods | Swath sigma0's and wind vectors |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Reanalyses * Ocean models, air-sea interaction * Climate research, Environmental monitoring |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|---|---|
| Name | Oceansat-2 L2 25 km and 50 km winds data record, release 2 |
| Description | |
| Product type | Data Record |
| Identifier | OSI-153-c (25 km), OSI-153-d (50 km) |
| Acronym | OSCAT DR 2 |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | Oceansat-2 scatterometer |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | NA |
| Time period | 2009-2014 |
| Central time | |
| Timeliness | Offline |
| Spatial coverage | Global |
| Spatial sampling | 25km, 50 km |
| Projection | |
| Characteristics & methods | Swath sigma0's and wind vectors |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EDC |
| Format | BUFR, NetCDF |
| Applications and users | <ul style="list-style-type: none"> * Reanalyses * Ocean models, air-sea interaction * Climate research, Environmental monitoring |
| COMMENTS | |
| Will replace OSI-153-a (25 km), OSI-153-b (50 km) | |

| IDENTIFICATION | |
|----------------------------------|---|
| Name | HY-2A L2 winds data record, release 1 |
| Description | |
| Product type | Data Record |
| Identifier | OSI-157 |
| Acronym | TBD |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | HY-2A/ HSCAT |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | NA |
| Time period | |
| Central time | |
| Timeliness | Offline |
| Spatial coverage | Global |
| Spatial sampling | 25, 50 km |
| Projection | |
| Characteristics & methods | Swath sigma0's and wind vectors |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. Wind speed stability better than 0.1 m/s in 10 years. |
| Optimal accuracy | NA |
| Verification/ validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EDC |
| Format | BUFR, NetCDF |
| Applications and users | * Reanalyses * Ocean models, air-sea interaction * Climate research, Environmental monitoring |
| COMMENTS | |
| | |

| IDENTIFICATION | |
|---------------------------------|---|
| Name | RapidScat L2 winds data record, release 1 |
| Description | |
| Product type | Data Record |
| Identifier | OSI-159 |
| Acronym | TBD |
| CHARACTERISTICS | |
| Processing level | |
| Satellite input | RapidScat Scatterometer on ISS |
| Other input | NWP outputs (wind, SST, land-sea mask) |
| Frequency | NA |
| Time period | 2014-end of mission |
| Central time | Offline |
| Timeliness | Global |
| Spatial coverage | 25, 50 km |
| Spatial sampling | |
| Projection | Swath sigma0's and wind vectors |
| Characteristics & methods | |
| ACCURACY REQUIREMENTS | |
| Threshold accuracy | NA |
| Target accuracy | Better than 2 m/s in wind component std. dev. with a bias of less than 0.5 m/s in wind speed on a monthly basis. Wind speed stability better than 0.1 m/s in 10 years. |
| Optimal accuracy | NA |
| Verification/validation methods | Triple collocation with NWP and buoys |
| DATA ACCESS | |
| Dissemination means | EDC |
| Format | BUFR, NetCDF |
| Applications and users | * Reanalyses * Ocean models, air-sea interaction * Climate research, Environmental monitoring |
| COMMENTS | |
| | |

OSI-PRD-PRO-301 Each Wind Vector Cell (WVC) of a BUFR wind product shall include:

- input product data, e.g. location, backscatter data and measurement geometry,
- unique wind solution (chosen) and its corresponding ambiguity,
- quality information, such as wind quality indicator, wind direction skill, ice screening information, and a recommendation for use.

OSI-PRD-PRO-302 Each Wind Vector Cell (WVC) of a NetCDF wind product shall include:

- input product data, e.g. location,
- unique wind solution (chosen),
- quality information, such as wind quality indicator, wind direction skill, ice screening information, and a recommendation for use.

OSI-PRD-PRO-303 NWP 10 m winds shall be appended to the satellite data in the wind product.

OSI-PRD-PRO-304 The wind products quality control shall include a global checking of the mean inversion residual (“cone” distance) and wind speed difference with the reference global NWP model over a 1-hour period.

OSI-PRD-PRO-305 The wind products quality control shall include a WVC-by-WVC checking of the wind inversion residual (“cone” distance) and ice detection at each node.

OSI-PRD-PRO-306 In the case of missing NWP wind input, where no ambiguity removal may be performed, the inverted winds shall be disseminated with ambiguity, and flagged as such in the BUFR wind products. In the NetCDF products, no winds will be present in the case of missing NWP wind input.

7. Wind software requirements

OSI-PRD-PRO-307 The OSI SAF shall deliver the following Wind software :

| Product (software) ID | Product (software) Name | Product (software) Acronym | Product Type | Operational Satellite Input Data | Characteristics and Methods. Packages process scatterometer backscatter data to wind vector field solutions featuring: local representation of the full wind vector PDF, state of the art QC, and 2D variational ambiguity removal. The basis of each package is the GenScat generic code, overlaid with instrument-specific routines. | Dissemination Means | Applications and Users | Product Heritage | Operational Product Status at Beginning of CDOP 3 | (Expected) Start of Operations | Comments |
|-----------------------|---|----------------------------|--------------|---|--|-------------------------|-------------------------|-------------------|---|--------------------------------|--|
| NWP_SCAT.1-S2 | Rotating pencil-beam scatterometer processors | SDP v2 | software | SeaWinds | Processes SeaWinds radar backscatter data to wind vector field solutions. | through NWP SAF website | NWP centres and OSI SAF | CDOP Continuation | Superseded | Jan 2009 (v1 since Mar 2006) | Continued use for reprocessing and reanalysis activities |
| NWP_SCAT.1-O1 | Rotating pencil-beam scatterometer processors | OWDP v1 | | OSCAT | Wind processor for Indian OSCAT | | | | Superseded | avr.-13 | |
| NWP_SCAT.1-P2 | Rotating pencil-beam scatterometer processors | PenWP v2 | | SeaWinds, OSCAT, HY-2A, RapidScat | Generic wind processor for pencil beam scatterometers | | | | Released | 2015 | Updates for various missions like ScatSat, Oceansat-3, HY-2B, HY-2C expected |
| NWP_SCAT.1-P3 | Rotating pencil-beam scatterometer processors | PenWP v3 | | SeaWinds, OSCAT, HY-2A, RapidScat | Generic wind processor for pencil beam scatterometers, 2DVAR with EDA background errors | | | | Released | 2016 | Updates for various missions like ScatSat, Oceansat-3, HY-2B, HY-2C expected |
| NWP_SCAT.1-P4 | Rotating pencil-beam scatterometer processors | PenWP v4 | | SeaWinds, OSCAT, HY-2A, RapidScat, Meteor-M | Generic wind processor for pencil beam scatterometers, will bring improved resolution & coastal processing, new GMF, intercalibration with other scatterometers, improved wind retrieval in hurricanes and improved quality control. | | | | Planned | 2020 | |

| Product (software) ID | Product (software) Name | Product (software) Acronym | Product Type | Operational Satellite Input Data | Characteristics and Methods. Packages process scatterometer backscatter data to wind vector field solutions featuring: local representation of the full wind vector PDF, state of the art QC, and 2D variational ambiguity removal. The basis of each package is the GenScat generic code, overlaid with instrument-specific routines. | Dissemination Means | Applications and Users | Product Heritage | Operational Product Status at Beginning of CDOP 3 | (Expected) Start of Operations | Comments |
|-----------------------|-----------------------------------|----------------------------|--------------|----------------------------------|--|---------------------|------------------------|------------------|---|--------------------------------|--------------------------------------|
| NWP_SCAT.2-1 | ASCAT Wind Data Processor | AWDP v1 | | ASCAT | As for SDP, but for ASCAT data. The first AWDP release is validated for the 25 km resolution product. The 12.5 km resolution product is included, but not yet fully tested. | | | | Superseded | janv.-09 | |
| NWP_SCAT.2-2 | ASCAT Wind Data Processor | AWDP v2 | | ASCAT | AWDP v2 is fully validated for the 12.5 km resolution product, and features improved wind retrieval, including OSI SAF developments on wind retrieval. | | | | Superseded | déc.-10 | |
| NWP_SCAT.2-3 | ASCAT Wind Data Processor | AWDP v3 | | ASCAT | AWDP v3 will include flow-dependent 2DVAR and intercalibration with other scatterometers. | | | | Released | 2016 | Update for Metop-C expected in 2019. |
| NWP_SCAT.2-4 | ASCAT Wind Data Processor | AWDP v4 | | ASCAT | AWDP v4 updates will bring improved resolution & coastal processing, new GMF, intercalibration with other scatterometers, improved wind retrieval in hurricanes and improved quality control. | | | | Planned | 2020 | |
| NWP_SCAT.3-C1 | Innovative scatterometer concepts | CWDP v1 | | CFOSAT | Wind processor for French/Chinese CFOSCAT | | | | Planned | 2020 | |
| NWP_SCAT.3-CKu1 | Innovative scatterometer concepts | CkuWDP v1 | | FY3E | Dual Frequency Wind Data Processor | | | | Planned | 2020 | |
| NWP_SCAT.3-KuKa1 | Innovative scatterometer concepts | KuKaWDP v1 | | GCOM-2 | Dual Frequency Wind Data Processor | | | | Planned | 2021 | |
| NWP_SCAT.3-L0 | Innovative scatterometer concepts | LRWP v0.1 | | GNSS-R | Wind Data Processor for Global Navigation Satellite System(GNSS) reflectometry | | | New Development | Planned | 2021 | |

8. Web Site User Support requirements

OSI-PRD-WUS-1 The OSI SAF Web Site shall offer to the users, depending on their rights, access to :

- General information on the OSI SAF,
- Information on the products and their quality,
- Near-real time quicklooks,
- Documentation, including Product User Manuals (PUM), Scientific Product Validation reports (SVR or VAL),
- Operations Reports, technical and scientific reports, Algorithm Theoretical Baseline Document (ATBD)
- News and service messages, with automatic and selective near-real time sending,
- A permanent user enquiry,
- Frequently Asked Questions (FAQ),
- Related links,
- User registration procedure allowing to a user to get full access rights,
- User support through a help desk mechanism,
- Near-real time and off line Products on FTP servers.