



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

Document 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 • CDOP 2 products finally not operational in CDOP 2 and operational CDOP2 products which have not been superseded have been added to this CDOP 3 PRD : OSI-203, OSI-203-a, OSI-205, OSI-301, OSI-302, OSI-402-b, OSI-403-b, OSI-405-b, OSI-409, OSI-409-a 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>

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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, 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-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	
Product type	Data Record
Identifier	OSI-250
Acronym	MSG SST DR 1
CHARACTERISTICS	
Processing level	
Satellite input	MSG / SEVIRI
Other input	NWP outputs (temperature, humidity and aerosols profiles)
Frequency	NA
Central time	
Timeliness	Offline Time period 2004-2012
Spatial coverage	East Atlantic, West Indian: 60N-60S 60W-60E
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 K
Target accuracy	Monthly bias : 0.1 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, EDC
Format	NetCDF
Applications and users	Climate
COMMENTS	
Temporal sampling : 1 h	

- 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 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 ⁽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 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 ⁽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	
Satellite input	AVHRR
Other input	NWP outputs
Frequency	24 h
Central time	
Timeliness	6 h
Spatial coverage	Northern Hemisphere
Spatial sampling	20 km
Projection	
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	
Satellite input	AVHRR
Other input	NWP outputs
Frequency	24 h
Central time	
Timeliness	6 h
Spatial coverage	Northern Hemisphere
Spatial sampling	20 km
Projection	
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	
Satellite input	AVHRR
Other input	NWP outputs
Frequency	24 h
Central time	
Timeliness	6 h
Spatial coverage	Northern Hemisphere
Spatial sampling	20 km
Projection	
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	
Product type	NRT Product
Identifier	OSI-410
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	
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	
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.	

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 sea ice concentration/emissivity, 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.