



OSISAF Service Specification

Version : 1.3

Date : 14/12/2017

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



Royal Netherlands
Meteorological Institute
*Ministry of Infrastructure and the
Environment*

Document Change record

Doc. version	Date	Editor	Change description
0.1	18/04/2017	CH	First version with no direct reference to CDOP 2. Reformulation of web site specifications, Updated specifications to be compliant with PRD
1.0	30/05/2017	CH	First version approved by OSI SAF SG
1.1	24/08/2017	CH	<p>Addition of updated version of sea ice edge, type, low resolution drift (OSI-402-c, OSI-403-c, OSI-405-c) Removal of previous versions of products (OSI-402-b, OSI-403-b, OSI-405-b) OSI-DCR-2016-014 version 1.2, dated 17/10/2016, approved by SG on the 22/11/2016. Operational switch took place on 30/05/2017.</p> <p>Addition of new sea ice concentration data record (OSI-450) DOI : 10.15770/EUM_SAF_OSI_0008 This data record improves and extends the reprocessing previously done to make OSI-409 and OSI-409-a. OSI-450 supersedes these two previous data records. OSI-DCR-2017-002 version 1.0, dated 17/02/2017, approved by SG on the 28/04/2017</p> <p>Addition of Oceansat-2 L2 25 km winds data record, release 1 (DOI : 10.15770/EUM_SAF_OSI_0010) Addition of Oceansat-2 L2 50 km winds data record, release 1 (DOI : 10.15770/EUM_SAF_OSI_0011) OSI-DCR-2017-004 version 1.0, dated 08/06/2017 approved by SG on the 31/07/2017.</p> <p>Addition of reference documents :</p> <ul style="list-style-type: none"> • PUM for OSI-150-a, OSI-150-b • PUM for OSI-151-a, OSI-151-b • PUM for OSI-152 • PUM for OSI-153-a, OSI-153-b • PUM for OSI-450
1.2	20/11/2017	CH	<p>OSI-DCR-2017-007 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 <u>MSG based products</u> (OSI-303, OSI-304) are only on <u>hourly</u> products. Same for <u>GOES-East based</u> products (OSI-305, OSI-306) : accuracy requirements are only on <u>hourly</u> products.</p> <p>OSI-DCR-2017-005 version 1.0, dated 24/08/2017 approved by SG on the 26/10/2017. For all OSI SAF GEO radiative fluxes products : stop of GRIB dissemination via EUMETCast mid-December 2017 (replaced by the NetCDF one)</p> <p>OSI-DCR-2017-012 version 1.0, dated 12/10/2017 approved by SG on the 26/10/2017. Stop of GRIB and HDF5 dissemination of global sea ice concentration, edge and type (OSI-401-b, OSI-402-c, OSI-403-c) via EUMETCast and FTP server on 05/04/2018 (replaced by the NetCDF format, already available)</p>

1.3	14/12/2017	CH	<p>OSI-DCR-2017-018 version 1.1, dated 05/12/2017 approved by SG on the 12/12/2017.</p> <ul style="list-style-type: none"> • Addition of temporary products based on GOES-E new generation (GOES-16) (OSI-207-a, OSI-305-a, OSI-306-a) processed with a temporary chain previously processing OSI-207, OSI-305, OSI-306. OSI-207-a, OSI-305-a, OSI-306-a will be replaced by OSI-207-b, OSI-305-b, OSI-306-b when the new chain designed to process GOES new generation (GOES-16) is be ready. • Removal of OSI-207, OSI-305, OSI-306
-----	------------	----	---

Table of contents

1.Introduction.....	5
1.1.Purpose of the document.....	5
1.2.OSI SAF Operational Service Architecture.....	5
1.3.Definitions, acronyms and abbreviations.....	5
1.4.Applicable and reference documents.....	7
1.4.1.Applicable documents.....	7
1.4.2.Reference documents.....	7
2.General specifications.....	9
2.1.Capability specifications.....	9
2.2.Availability specifications.....	10
2.3.Documentation and software specifications.....	10
2.4.Quality control specifications.....	10
2.5.Products format and access specifications.....	11
2.6.Products areas specifications.....	12
3.Products specifications.....	12
3.1.Sea Surface Temperature (SST) specifications.....	12
3.2.Radiative fluxes (SSI and DLI) specifications.....	21
3.3.Sea Ice specifications.....	28
3.4.Wind specifications.....	39
4.Web Site User support specifications.....	49
4.1. OSI SAF web site specifications.....	49
4.2.OSI SAF central Web site specifications.....	49
4.3.OSI SAF thematic web sites specifications.....	50
4.4.Service messages specifications.....	50
4.5.Help desk specifications.....	50
5.Other Users Interactions specifications.....	51
5.1.Workshops specifications.....	51
5.2.Visiting Scientists Activities specifications.....	51

1. Introduction

1.1. Purpose of the document

The purpose of the service specification document is to provide specifications and detailed information on the services committed towards the users by the Ocean and Sea Ice Satellite Application Facility (OSI SAF) at a given stage of the Continuous Development and Operations Phases.

It is made available to users.

The Service Specification document details the product characteristics and availability, the Quality monitoring, the access to archived products at the beginning of the CDOP-2 as heritage of the CDOP, and the user support, which includes the Web site, the Help desk and the workshops.

The document is structured as following :

Section 1 : This introduction

Section 2 : General specifications

Section 3 : Products specifications

Section 4 : Web site User support specifications

Section 5 : Other Users interactions specifications

In this document, the Service Specifications are referenced OSI-SS. This document and its evolutions are subject to approval by the OSI SAF Steering Group.

The proper availability of the service available to users are verified in the Half Yearly Operations Reports.

1.2. OSI SAF Operational Service Architecture

The production is based on 3 subsystems :

- Low and Mid latitude (LML) subsystem, under MF responsibility, processes and distributes the SST and Radiative Fluxes products covering LML, North Atlantic Regional (NAR) and Global areas. Ifremer contributes to the products distribution and archiving,
- High Latitude (HL) subsystem, under MET Norway responsibility with the co-operation of DMI, processes and distributes the Global Sea Ice products, the High Latitude SST and the High Latitude Radiative Fluxes,
- Wind subsystem (WIND), under KNMI responsibility, processes and distributes the Wind products.

1.3. Definitions, acronyms and abbreviations

AHL	Atlantic High Latitude
AMSR-E	Advanced Microwave Scanning Radiometer – Earth Observing System
AMSU	Advanced Microwave Sounding Unit
ASCAT	Advanced SCATterometer
ATBD	Algorithm Theoretical Baseline Document
ATL	Atlantic low and mid latitude

AVHRR	Advanced Very High Resolution Radiometer
BUFR	Binary Universal Format Representation
CDOP	Continuous Development and Operations Phase
CMS	Centre de Météorologie Spatiale
DLI	Downward Long wave Irradiance
DMI	Danish Meteorological Institute
DMSP	Defense Meteorological Satellite Program
ECMWF	European Centre for Medium range Weather Forecasts
EDC	EUMETSAT Data Centre
EPS	European Polar System
FAQ	Frequently Asked Question
FTP	File Transfer Protocol
GCOM-W	Global Change Observation Mission- Water (JAXA mission)
GEO	Geostationary Earth Orbit
GBL	Global oceans
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
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
JPL	Jet Propulsion Laboratory
JPSS	Joint Polar Satellite System (NOAA and NASA)
KNMI	Koninklijk Nederlands Meteorologisch Instituut
LEO	Low Earth Orbit
LML	Low and Mid Latitude
MAP	Merged Atlantic Product
MET	Nominal Meteosat at 0° longitude
MET Norway	Norwegian Meteorological Institute
Metop	Meteorological operational Satellite
M-F	Météo-France
MSG	Meteosat Second Generation
NAR	Northern Atlantic and Regional
NASA	(American) National Aeronautics and Space Administration
NCEP	National Centre for Environmental Prediction
NESDIS	National Environmental Satellite, Data and Information Service
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
PO.DAAC	Physical Oceanography Distributed Active Archive Center
PUM	Product User Manual
R&D	Research and Development
RMDCN	Regional Meteorological Data Communication Network
SAF	Satellite Application Facility

Std Dev	Standard deviation
SEVIRI	Spinning Enhanced Visible and Infra-Red Imager
SMHI	Swedish Meteorological and Hydrological Institute
SSI	Surface Short wave Irradiance
SSMI	Special Sensor Microwave Imager
SSMIS	Special Sensor Microwave Imager and Sounder
SST	Sea Surface Temperature
TBC	To Be Confirmed
TBD	To Be Defined
UMARF	Unified Meteorological Archive & Retrieval Facility
VIIRS	Visible/Infrared Imager/Radiometer Suite
VR	Validation Report
WMO	World Meteorological Organisation
WVC	Wind Vector Cell

1.4. Applicable and reference documents

1.4.1. Applicable documents

- [AD.1] OSI SAF
CDOP 3 Product Requirement Document (PRD)
Version 1.0, May 2017

1.4.2. Reference documents

- [RD.1] Ascat Product Manual
(OSI-102, OSI-102-b, OSI-103, OSI-104, OSI-104-b)
SAF/OSI/CDOP/KNMI/TEC/MA/126
- [RD.2] RapidScat Wind Product User Manual
(OSI-109)
SAF/OSI/CDOP2/KNMI/TEC/MA/227
- [RD.15] ASCAT L2 winds Data Record Product User Manual
OSI-150-a, OSI-150-b
SAF/OSI/CDOP2/KNMI/TEC/MA/238
- [RD.16] Reprocessed SeaWinds L2 winds Product User Manual
OSI-151-a, OSI-151-b
SAF/OSI/CDOP2/KNMI/TEC/MA/220
- [RD.17] ERS L2 winds Data Record Product User Manual
OSI-152
SAF/OSI/CDOP2/KNMI/TEC/MA/279
- [RD.18] Oceansat-2 L2 winds Data Record Product User Manual
OSI-153-a, OSI-153-b
SAF/OSI/CDOP3/KNMI/TEC/MA/297

- [RD.3] Low Earth Orbiter Sea Surface Temperature Product User Manual
(OSI-201-b, OSI-202-b, OSI-204-b, OSI-208-b)
SAF/OSI/CDOP2/M-F/TEC/MA/127
- [RD.4] Atlantic High Latitude L3 Sea Surface Temperature Product User Manual
(OSI-203)
SAF/OSI/CDOP/met.no/TEC/MA/115
- [RD.5] Geostationary Sea Surface Temperature Product User Manual
(OSI-206, OSI-207-a)
SAF/OSI/CDOP3/MF/TEC/MA/181
- [RD.6] Atlantic High Latitude Radiative Fluxes Product User Manual
(OSI-301, OSI-302)
SAF/OSI/CDOP/met.no/TEC/MA/116
- [RD.7] Geostationary Radiative Flux Product User Manual
(OSI-303, OSI-304, OSI-305-a, OSI-306-a)
SAF/OSI/CDOP3/MF/TEC/MA/182
- [RD.8] Global Sea Ice Concentration Product User Manual
(OSI-401-b)
SAF/OSI/CDOP2/DMI_MET/TEC/MA/204
- [RD.9] Global Sea Ice Edge and Type Product User Manual
(OSI-402-c, OSI-403-c)
SAF/OSI/CDOP2/MET-Norway/TEC/MA/205
- [RD.10] 50 GHz Sea Ice Emissivity Product User Manual
(OSI-404)
SAF/OSI/CDOP2/DMI/TEC/MA/191
- [RD.11] Low Resolution Sea Ice Drift Product User Manual
(OSI-405-c)
SAF/OSI/CDOP/met.no/TEC/MA/128
- [RD.12] Medium Resolution Sea Ice Drift Product User Manual
(OSI-407)
SAF/OSI/CDOP/DMI/TEC/MA/137
- [RD.13] Global Sea Ice Concentration Reprocessing Product User Manual
(OSI-409, OSI-409-a, OSI-430)
SAF/OSI/CDOP/met.no/TEC/MA/138

[RD.14]Global Sea Ice Concentration Climate Data Record Product User Manual
OSI-450
SAF/OSI/CDOP2/MET/TEC/MA/288

2. General specifications

2.1. Capability specifications

OSI-SS-GEN-1 The OSI SAF products shall be generated from real-time or off-line satellite data.

OSI-SS-GEN-2 When some of the input data are missing or corrupted, production shall be performed as soon as the available input data makes it possible.

2.2. Availability specifications

OSI-SS-GEN-100 Operational OSI SAF products shall be available for distribution within the specified time on a monthly basis in more than 95% 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.

Notes :

- 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 3.

OSI-SS-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).

2.3. Documentation and software specifications

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

OSI-SS-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)

2.4. Quality control specifications

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

OSI-SS-GEN-301 For each OSI SAF operational product, quality information shall be distributed in near-real time together with the products.

OSI-SS-GEN-302 For each OSI SAF operational product, the results of availability and quality control shall be reported in the OSI SAF Operations Report.

OSI-SS-GEN-303 The OSI SAF shall archive all products control reports.

2.5. Products format and access specifications

OSI-SS-GEN-400 The OSI SAF products shall be made available via the dissemination means as specified in the corresponding tables of Chapter 3.

OSI-SS-GEN-401 The OSI SAF products shall be made available in the formats as specified in the corresponding tables of Chapter 3.

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

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

2.6. Products areas specifications

OSI-SS-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.

3. Products specifications

3.1. Sea Surface Temperature (SST) specifications

OSI-SS-PRO-1 The Product Specification for SST shall be as per table below :

IDENTIFICATION	
Name	Global Metop Sea Surface Temperature
Description	
Product type	NRT Product
Identifier	OSI-201-b
Acronym	GBL SST
Acronym for EDC (APNM)	OSSTGLB
Product navigator reference	EO:EUM:DAT:METOP:GLB-SST
CHARACTERISTICS	
Processing level	L3P
Satellite input	Metop-B / AVHRR
Other input	NWP outputs (temperature, humidity and aerosols profiles)
Frequency	12 h
Central time	00:00, 12:00
Timeliness	6 h
Spatial coverage	Global
Spatial sampling	0.05° lat-lon
Projection	Cylindrical equidistant
Characteristics & methods	Subskin temperature; multispectral algorithm + use of NWP output
ACCURACY REQUIREMENTS	
Threshold accuracy	Monthly bias : 1 K, sdt. dev. : 1.5 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	GHR SST NetCDF via EUMETCast GHR SST NetCDF on IFREMER FTP server GHR SST NetCDF via EDC
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-b
Acronym	NAR SST
Acronym for EDC (APNM)	OSSTNAR
Product navigator reference	EO:EUM:DAT:MULT:NOAA-OSSTNAR
CHARACTERISTICS	
Processing level	L3P
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, European Seas
Spatial sampling	2 km
Projection	polar stereographic
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	GHRSSST NetCDF via EUMETCast GHRSSST NetCDF on IFREMER FTP server GHRSSST NetCDF via EDC
Applications and users	* Atmosphere and ocean models; * Oceanography and * Fisheries.
COMMENTS	

IDENTIFICATION	
Name	Atlantic High Latitude Sea Surface Temperature
Description	
Product type	NRT Product
Identifier	OSI-203
Acronym	AHL SST
Acronym for EDC (APNM)	OSSTAHL
Product navigator reference	EO:EUM:DAT:MULT:AHL-SST
CHARACTERISTICS	
Processing level	L3
Satellite input	AVHRR (NOAA, Metop)
Other input	HIRLAM (or other limited area model) outputs
Frequency	12h
Central time	00:00, 12:00
Timeliness	3h30
Spatial coverage	Atlantic North of 50N
Spatial sampling	5km
Projection	polar stereographic
Characteristics & methods	Underskin temperature (K). Multispectral algorithm
ACCURACY REQUIREMENTS	
Threshold accuracy	SST bias: 1 K SST std. dev.: 1.5 K
Target accuracy	SST bias: 0.5 K SST std. dev.: 0.8 K
Optimal accuracy	SST bias: 0.1 K SST std. dev.: 0.3 K
Verification/validation methods	SST : comparison with buoy measurements.
DATA ACCESS	
Dissemination means	FTP server, EUMETCast, EDC
Format	NetCDF, GRIB, HDF5
Applications and users	* Operational Met Services, * Operational analyses and ocean models, * Research or Environmental monitoring
COMMENTS	

IDENTIFICATION	
Name	Full resolution MetOp Sea Surface Temperature metagranules
Description	
Product type	NRT Product
Identifier	OSI-204-b
Acronym	MGR SST
Acronym for EDC (APNM)	MGR SST
Product navigator reference	EO:EUM:DAT:METOP:MGR-SST
CHARACTERISTICS	
Processing level	L2P
Satellite input	Metop-B / AVHRR
Other input	NWP outputs (temperature, humidity and aerosols profiles)
Frequency	3 min (480 per day)
Central time	NA
Timeliness	4 h
Spatial coverage	Global
Spatial sampling	1.1 to 6.2 km
Projection	Swath
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 via EUMETCast NetCDF on Ifremer FTP server
Applications and users	* Atmosphere and ocean models; * Oceanography and * Fisheries.
COMMENTS	

IDENTIFICATION		
Name	High Latitude L2 Sea and Sea Ice Surface Temperature	
Description		
Product type	NRT Product	
Identifier	OSI-205	
Acronym	L2 SST/IST	
Acronym for EDC (APNM)	OSSTIST2	
Product navigator reference	EO:EUM:DAT:METOP:OSI-205	
CHARACTERISTICS		
Processing level	L2	
Satellite input	Metop/AVHRR	
Other input	ECMWF outputs	
Frequency	continuous	
Central time	NA	
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. dev. : 1,5 K	IST bias : 2.5 / 4.5 K ⁽¹⁾ IST std. dev. : 3.0 / 4.0 K ⁽¹⁾
Target accuracy	SST bias : 0.7 K SST std. dev. : 1.0 K	IST bias : 1.5 / 3.5 K ⁽¹⁾ IST std. dev. : 2.0 / 3.0 K ⁽¹⁾
Optimal accuracy	SST bias : 0.1 K SST std. dev. : 0.3 K	IST bias : 0.5 / 0.8 K ⁽¹⁾ IST std. dev. : 0.8 / 1.0 K ⁽¹⁾
Verification/validation methods	SST : Comparison with buoy observations	IST: comp with IR radiometer and buoy observations, separately ⁽¹⁾
DATA ACCESS		
Dissemination means	FTP server, EUMETCast, EDC	
Format	NetCDF	
Applications and users	<ul style="list-style-type: none"> * Operational Met Services, * Operational analyses and ocean models, * Research or Environmental monitoring 	
COMMENTS		
⁽¹⁾ 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		

IDENTIFICATION	
Name	METEOSAT Sea Surface Temperature
Description	
Product type	NRT Product
Identifier	OSI-206
Acronym	MET SST
Acronym for EDC (APNM)	MET SST, OSIHSSST
Product navigator reference	EO:EUM:DAT:METEOSAT:OSIHSSST
CHARACTERISTICS	
Processing level	L3C
Satellite input	MSG3 / SEVIRI
Other input	NWP outputs (temperature, humidity and aerosols profiles)
Frequency	1 h
Central time	00:00, 01:00, ..., 23:00
Timeliness	3 h
Spatial coverage	East Atlantic, West Indian : 60N-60S 60W-60E
Spatial sampling	0.05° Lat-Lon
Projection	Cylindrical equidistant
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. : 0.3 K
Verification/ validation methods	Routine comparison with drifting buoy measurements
DATA ACCESS	
Dissemination means	FTP server, EUMETCast, EDC
Format	GHRSSST NetCDF via EUMETCast, on Ifremer FTP server and EDC
Applications and users	* Atmosphere and ocean models; * Oceanography and * Fisheries.
COMMENTS	

IDENTIFICATION	
Name	GOES-E Sea Surface Temperature
Description	
Product type	NRT Product
Status	Pre-operational
Identifier	OSI-207-a
Acronym	GOES-E SST
Acronym for EDC (APNM)	GOES-E SST, OSIHSST
Product navigator reference	<u>EO:EUM:DAT:GOES:OSIHSST</u>
CHARACTERISTICS	
Processing level	L3C
Satellite input	GOES-16/ABI
Other input	NWP outputs (temperature and humidity profiles, aerosols optical depth), cloud mask
Frequency	1 h
Central time	00:00, 01:00, ..., 23:00
Timeliness	3 h
Spatial coverage	West Atlantic East Pacific : 60N-60S 135W-15W
Spatial sampling	0.05° Lat-Lon
Projection	Cylindrical equidistant
Characteristics & methods	Subskin temperature; multispectral algorithm + use of NWP output
ACCURACY REQUIREMENTS	
Threshold accuracy	monthly bias : 1 K, sdt. dev. : 1.5 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	GHRSSST NetCDF
Applications and users	* Atmosphere and ocean models; * Oceanography and * Fisheries.
COMMENTS	
<p>GOES-16 (GOES-R) is the first GOES new generation. This temporary product (processed with a temporary chain previously processing OSI-207) replaces OSI-207 and will be replaced by OSI-207-b.</p>	

IDENTIFICATION	
Name	IASI Sea Surface Temperature
Description	
Product type	NRT Product
Identifier	OSI-208-b
Acronym	IASI SST
Acronym for EDC (APNM)	
Product navigator reference	EO:EUM:DAT:IASI-SST
CHARACTERISTICS	
Processing level	L2
Satellite input	Metop-B / IASI
Other input	L2P core IASI SST produced by EUMETSAT Secr.
Frequency	3 min (480 per day)
Central time	NA
Timeliness	4 h
Spatial coverage	Global
Spatial sampling	12 to 40 km
Projection	Swath
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	GHR SST NetCDF via EUMETCast, on Ifremer FTP server and EDC
Applications and users	* Atmosphere and ocean models;
COMMENTS	

All SST biases indicated in accuracy columns are absolute biases (the bias can be between minus the value and plus the value).

OSI-SS-PRO-2 The OSI SAF shall produce SST values in cloud clear areas only. In particular, no interpolation or analysis method is used to estimate SST in cloudy areas.

OSI-SS-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-PP recommendations.

OSI-SS-PRO-4 SST values shall be continuously quality controlled by comparison with night-time buoy measurements gathered in match-up data set.

OSI-SS-PRO-5 The SST and radiative fluxes match-up data set shall be available to interested users on request.

OSI-SS-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.

Note : Most of the near-real time SST products can be visualised in a friendly interface called Naiad (<http://naiad.ifremer.fr/>) : OSI-201-b, OSI-202-b, OSI-204-b, OSI-206, OSI-207.

Note : for information, OSI-201-b, OSI-202-b, OSI-204-b, OSI-206, OSI-207, OSI-208-b are also disseminated by JPL/PO.DAAC (outside OSI SAF).

3.2. Radiative fluxes (SSI and DLI) specifications

OSI-SS-PRO-100 The Product Specification for DLI and SSI radiative fluxes shall be as per table below :

IDENTIFICATION	
Name	AHL Downward Longwave Irradiance
Description	
Product type	NRT Product
Identifier	OSI-301
Acronym	AHL DLI
Acronym for EDC (APNM)	ODLIAHL
Product navigator reference	EO:EUM:DAT:MULT:AHL-DLI
CHARACTERISTICS	
Processing level	L3
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	W/m ² . Bulk parametrization
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 modelling at operational and research centers
COMMENTS	

IDENTIFICATION	
Name	AHL Surface Solar Irradiance
Description	
Product type	NRT Product
Identifier	OSI-302
Acronym	AHL SSI
Acronym for EDC (APNM)	OSSIAHL
Product navigator reference	EO:EUM:DAT:MULT:AHL-SSI
CHARACTERISTICS	
Processing level	L3
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	W/m ² . Bulk parametrization
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	METEOSAT Downward Longwave Irradiance
Description	
Product type	NRT Product
Identifier	OSI-303
Acronym	MET DLI
Acronym for EDC (APNM)	OSIDDLI
Product navigator reference	EO:EUM:DAT:METEOSAT:OSIDDLI
CHARACTERISTICS	
Processing level	L3
Satellite input	MSG / SEVIRI
Other input	NWP outputs (temperature, humidity and aerosols profiles)
Frequency	1 h – 24 h
Central time	00:00, 01:00, ..., 23:00 – 12:00
Timeliness	2 h
Spatial coverage	East Atlantic, West Indian: 60N-60S 60W-60E
Spatial sampling	0.05° Lat-Lon
Projection	Cylindrical equidistant
Characteristics & methods	W/m ² . 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	NetCDF4
Applications and users	Ocean atmosphere studies
COMMENTS	

IDENTIFICATION	
Name	METEOSAT Surface Solar Irradiance
Description	
Product type	NRT Product
Identifier	OSI-304
Acronym	MET SSI
Acronym for EDC (APNM)	OSIHSSI
Product navigator reference	EO:EUM:DAT:METEOSAT:OSIHSSI
CHARACTERISTICS	
Processing level	L3
Satellite input	MSG / SEVIRI
Other input	NA
Frequency	1 h - 24 h
Central time	00:00, 01:00, ..., 23:00 – 12:00
Timeliness	2 h
Spatial coverage	East Atlantic, West Indian: 60N-60S 60W-60E
Spatial sampling	0.05° Lat-Lon
Projection	Cylindrical equidistant
Characteristics & methods	W/m ² . 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	NetCDF4
Applications and users	Ocean atmosphere studies
COMMENTS	

IDENTIFICATION	
Name	GOES-E Downward Longwave Irradiance
Description	
Product type	NRT Product
Status	Pre-operational
Identifier	OSI-305-a
Acronym	GOES-E DLI
Acronym for EDC (APNM)	OSIDDLI
Product navigator reference	EO:EUM:DAT:GOES:OSIDDLI
CHARACTERISTICS	
Processing level	L3
Satellite input	GOES-16/ABI
Other input	NWP outputs (temperature and humidity profiles), cloud classification
Frequency	1 h – 24 h
Central time	00:00, 01:00, ..., 23:00 – 12:00
Timeliness	2 h
Spatial coverage	West Atlantic East Pacific : 60N-60S 135W-15W
Spatial sampling	0.05° Lat-Lon
Projection	Cylindrical equidistant
Characteristics & methods	W/m ² . 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	NetCDF4
Applications and users	Ocean atmosphere studies
COMMENTS	
<p>GOES-16 (GOES-R) is the first GOES new generation. This temporary product (processed with a temporary chain previously processing OSI-305) replaces OSI-305 and will be replaced by OSI-305-b.</p>	

IDENTIFICATION	
Name	GOES-E Surface Solar Irradiance
Description	
Product type	NRT Product
Status	Pre-operational
Identifier	OSI-306-a
Acronym	GOES-E SSI
Acronym for EDC (APNM)	OSIDSSI
Product navigator reference	<u>EO:EUM:DAT:GOES:OSIDSSI</u>
CHARACTERISTICS	
Processing level	L3
Satellite input	GOES-16/ABI
Other input	NWP outputs (water content profiles), cloud classification
Frequency	1 h – 24 h
Central time	00:00, 01:00, ..., 23:00 – 12:00
Timeliness	2 h
Spatial coverage	West Atlantic East Pacific 60N-60S 135W-15W
Spatial sampling	0.05° Lat-Lon
Projection	Cylindrical equidistant
Characteristics & methods	W/m ² . 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	NetCDF4
Applications and users	Ocean atmosphere studies
COMMENTS	
<p>GOES-16 (GOES-R) is the first GOES new generation. This temporary product (processed with a temporary chain previously processing OSI-306) replaces OSI-306 and will be replaced by OSI-306-b.</p>	

OSI-SS-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-SS-PRO-102 Hourly SSI products quality shall be continuously quality controlled against a set of pyranometer measurement stations selected over land and gathered in a match-up data set.

OSI-SS-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-SS-PRO-104 The SSI and DLI fluxes match-up data set shall be available to interested users on request.

3.3. Sea Ice specifications

OSI-SS-PRO-200 The Product Specification for Sea Ice shall be as per table below :

IDENTIFICATION	
Name	Global Sea Ice Concentration
Description	
Product type	NRT Product
Identifier	OSI-401-b
Acronym	GBL SICO
Acronym for EDC (APNM)	OSICOGB
Product navigator reference	EO:EUM:DAT:DMSP:GBLSIC
CHARACTERISTICS	
Processing level	L3
Satellite input	SSMIS
Other input	NWP outputs
Frequency	24 h
Central time	12:00
Timeliness	5 h
Spatial coverage	Global
Spatial sampling	10 km
Projection	Polar Stereographic
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 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	NetCDF3
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
Acronym for EDC (APNM)	OSIEDGB
Product navigator reference	EO:EUM:DAT:MULT:GBLSIE
CHARACTERISTICS	
Processing level	L3
Satellite input	SSMIS, ASCAT, AMSR-2
Other input	NWP outputs
Frequency	24 h
Central time	12:00
Timeliness	5 h
Spatial coverage	Global
Spatial sampling	10 km
Projection	Polar Stereographic
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	NetCDF3
Applications and users	* NWP and Ocean/Ice models, * Operational Met and Sea Ice services
COMMENTS	

IDENTIFICATION	
Name	Global Sea Ice Type
Description	
Product type	NRT Product
Identifier	OSI-403-c
Acronym	GBL SITY
Acronym for EDC (APNM)	OSITYGB
Product navigator reference	EO:EUM:DAT:MULT:GBLSIT
CHARACTERISTICS	
Processing level	L3
Satellite input	SSMIS, ASCAT, AMSR-2
Other input	NWP outputs
Frequency	24 h
Central time	12:00
Timeliness	5 h
Spatial coverage	Global
Spatial sampling	10 km
Projection	Polar Stereographic
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	NetCDF3
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 Emissivity
Description	
Product type	NRT Product
Identifier	OSI-404
Acronym	GBL SIEM
Acronym for EDC (APNM)	OSIEMGB
Product navigator reference	EO:EUM:DAT:DMSP:SISE50
CHARACTERISTICS	
Processing level	L3
Satellite input	SSMIS
Other input	None
Frequency	24 h
Central time	12:00
Timeliness	5 h
Spatial coverage	Global
Spatial sampling	10 km
Projection	Polar Stereographic
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	NetCDF3
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
Acronym for EDC (APNM)	OSIDRGB
Product navigator reference	EO:EUM:DAT:MULT:GBL-LR-SID
CHARACTERISTICS	
Processing level	L3
Satellite input	SSMIS, ASCAT, AMSR-2
Other input	NWP outputs
Frequency	24 h
Central time	12:00
Timeliness	6 h
Spatial coverage	Global
Spatial sampling	62.5 km
Projection	Polar Stereographic
Characteristics & methods	Single and multi sensor analysis. Displacement after 48 hours in km. Includes uncertainties estimates
ACCURACY REQUIREMENTS	
Threshold accuracy	10 km yearly std dev. on both x and y components after 48 hours displacement
Target accuracy	5 km yearly std dev. on both x and y components after 48 hours displacement
Optimal accuracy	2 km yearly std dev. on both x and y components after 48 hours displacement
Verification/validation methods	Collocation with buoys
DATA ACCESS	
Dissemination means	EUMETCast, FTP, EDC
Format	NetCDF3
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
Acronym	NH MR SIDR
Acronym for EDC (APNM)	OMRSIDRN
Product navigator reference	EO:EUM:DAT:METOP:NH-MR-SID
CHARACTERISTICS	
Processing level	L3
Satellite input	AVHRR
Other input	NWP outputs
Frequency	24 h
Central time	12:00
Timeliness	6 h
Spatial coverage	Northern Hemisphere
Spatial sampling	20 km
Projection	Polar Stereographic
Characteristics & methods	Single sensor analysis. Displacement after 24 hours in km.
ACCURACY REQUIREMENTS	
Threshold accuracy	5 km yearly std. dev. after 24 hours displacement
Target accuracy	2 km yearly std. dev. after 24 hours displacement
Optimal accuracy	1 km yearly std. dev. after 24 hours displacement
Verification/ validation methods	Collocation with buoys
DATA ACCESS	
Dissemination means	EUMETCast, FTP, EDC
Format	NetCDF3
Applications and users	* 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
Acronym	GBL AMSR SICO
Acronym for EDC (APNM)	OSICOAMSRGB
Product navigator reference	EO:EUM:DAT:GCOM:OSI-408
CHARACTERISTICS	
Processing level	L3
Satellite input	AMSR-2
Other input	NWP outputs
Frequency	24 h
Central time	12:00
Timeliness	5 h
Spatial coverage	Global
Spatial sampling	10 km
Projection	Polar Stereographic
Characteristics & methods	Daily averaged fractional ice cover in percentage. Includes 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 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	NetCDF3
Applications and users	* Climate models, * NWP and Ocean/Ice models, * Operational Met and Sea Ice services
COMMENTS	

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
Acronym for EDC (APNM)	OR1SICOGB
Product navigator reference	EO:EUM:DAT:MULT:OSI-409 , EO:EUM:DAT:DMSP:OSI-409-A
DOI	10.15770/EUM_SAF_OSI_0001, 10.15770/EUM_SAF_OSI_0005
CHARACTERISTICS	
Processing level	L3
Satellite input	SMMR, SSM/I and SSMIS from CM SAF
Other input	ECMWF outputs
Frequency	24 h
Time period	October 1978--14 October 2009, 15 October 2009-15 April 2015
Central time	12:00
Timeliness	Offline
Spatial coverage	Global
Spatial sampling	10 km and 12.5 km ⁽³⁾
Projection	Polar stereographic and Lambert azimuthal
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	NetCDF3
Applications and users	* Climate models, * NWP and Ocean/Ice hindcast models, * Environmental agencies
COMMENTS	
<p>⁽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.</p> <p>Superseded by OSI-450</p>	

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
Acronym for EDC (APNM)	OR2017SICOGB
Product Navigator reference	EO:EUM:DAT:MULT:OSI-450
DOI	10.15770/EUM_SAF_OSI_0008
CHARACTERISTICS	
Processing level	
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	
Supersedes OSI-409 and OSI-409-a	

IDENTIFICATION	
Name	Global reprocessed Sea Ice Concentration Updates
Description	
Product type	Off line product
Identifier	OSI-430 ⁽²⁾
Acronym	GBL REPU SICO
Acronym for EDC (APNM)	OSICOGB
Product navigator reference	
CHARACTERISTICS	
Processing level	L3
Satellite input	SSMIS from EUMETCast
Other input	NWP outputs
Frequency	24 h
Central time	12:00
Timeliness	1 month
Spatial coverage	Global
Spatial sampling	10 km and 12.5 km ⁽³⁾
Projection	Polar stereographic and Lambert azimuthal
Characteristics & methods	Daily averaged fractional ice cover in percentage. From 16 April 2015. Fully consistent with OSI-409 and OSI-409-a, to ensure homogeneity.
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	NetCDF3
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.	

OSI-SS-PRO-201 Each grid node of a sea ice field shall contain the sea ice value and a confidence or uncertainty parameter.

OSI-SS-PRO-202 The following quality control shall be implemented on sea ice products :

- monitor confidence parameters,
- for sea ice concentration and sea 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.

Note : **Accuracy of the different sea ice 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 project** : the Project Teams at MET Norway and DMI were engaged from December 2011 to December 2014 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 ECV, which is very similar in scope to the datasets developed in the OSI SAF CDOP-1 (OSI-409) and CDOP-2 (OSI-409-a, **OSI-450**). It is thus natural for the Project Team to seek best synergies between the two projects, especially in terms of re-use of processing software. A specific acknowledgement that the OSI SAF contributed with re-use of (part of) its processing software will be carried into the ESA CCI product. The ESA CCI Sea Ice project enters in its 2nd phase (Jan 2015 to Dec 2017) with active participation of Project Teams at MET Norway and DMI. The requirements of OSI-450 are updated to document that contribution from the SICCI projects allows to aim for a better result. The SICCI2 project will use the same processing software to generate a dataset from AMSR-E and AMSR2 (2002-2015, with data gaps), which is not a CDOP 2 product.

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

Note : for information, OSI-401-b, OSI-402-c, OSI-403-c, OSI-405-c, OSI-409, OSI-409-a, OSI-430, OSI-450 are also disseminated outside OSI SAF by the Copernicus Marine Environment Monitoring Service (CMEMS).

3.4. Wind specifications

OSI-SS-PRO-300 The Product Specification for Wind shall be as per table below :

IDENTIFICATION	
Name	ASCAT 25 km Winds
Description	
Product type	NRT Product
Identifier	OSI-102
Acronym	ASCAT25
Acronym for EDC (APNM)	OAS025
Product navigator reference	EO:EUM:DAT:METOP:OAS025
CHARACTERISTICS	
Processing level	L2
Satellite input	Metop-A/ ASCAT
Other input	NWP outputs (wind, SST, land-sea mask)
Frequency	Continuous
Central time	NA
Timeliness	2 h 45
Spatial coverage	Global
Spatial sampling	25 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	EUMETCast, FTP server, GTS, EDC
Format	BUFR via EUMETCast, on FTP server, EDC and GTS; NetCDF on FTP server and EDC
Applications and users	* 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
Acronym for EDC (APNM)	OAS025
Product navigator reference	EO:EUM:DAT:METOP:OAS025
CHARACTERISTICS	
Processing level	L2
Satellite input	Metop-B/ ASCAT
Other input	NWP outputs (wind, SST, land-sea mask)
Frequency	Continuous
Central time	NA
Timeliness	2 h 45
Spatial coverage	Global
Spatial sampling	25 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	EUMETCast, FTP server, GTS, EDC
Format	BUFR via EUMETCast, on FTP server and EDC; NetCDF on FTP server and EDC
Applications and users	* 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
Acronym	ASCAT12+
Acronym for EDC (APNM)	OASWC12
Product navigator reference	EO:EUM:DAT:METOP:OSI-104
CHARACTERISTICS	
Processing level	L2
Satellite input	Metop-A/ ASCAT
Other input	NWP outputs (wind, SST, land-sea mask)
Frequency	Continuous
Central time	NA
Timeliness	2 h 45
Spatial coverage	Global
Spatial sampling	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	EUMETCast, FTP server, GTS, EDC
Format	BUFR via EUMETCast, on FTP server, EDC and GTS; NetCDF on FTP server and EDC
Applications and users	* 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+
Acronym for EDC (APNM)	OASWC12
Product navigator reference	EO:EUM:DAT:METOP:OSI-104
CHARACTERISTICS	
Processing level	L2
Satellite input	Metop-B/ ASCAT
Other input	NWP outputs (wind, SST, land-sea mask)
Frequency	Continuous
Central time	NA
Timeliness	2 h 45
Spatial coverage	Global
Spatial sampling	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	EUMETCast, FTP server, GTS, EDC
Format	BUFR via EUMETCast, on FTP server and EDC; NetCDF on FTP server and EDC
Applications and users	* Operational Met Services (including assimilation in at least 8 NWP models, nowcasting) * Operational analyses and ocean models * Research or Environmental monitoring
COMMENTS	

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
Acronym for EDC (APNM)	OR1ASW025, OR1ASWC12
Product navigator reference	
DOI	10.15770/EUM_SAF_OSI_0006, 10.15770/EUM_SAF_OSI_0007
CHARACTERISTICS	
Processing level	L2
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	NA
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	* Reanalyses * Ocean models, air-sea interaction * Climate research, Environmental monitoring
COMMENTS	

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
Acronym for EDC (APNM)	OR1SWW025, OR1SWW050
Product navigator reference	EO:EUM:DAT:QUIKSCAT:REPSW25 , EO:EUM:DAT:QUIKSCAT:REPSW50
DOI	10.15770/EUM_SAF_OSI_0002, 10.15770/EUM_SAF_OSI_0003
CHARACTERISTICS	
Processing level	L2
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	NA
Timeliness	Offline
Spatial coverage	Global
Spatial sampling	25km, 50 km
Projection	Swath
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	ERS SCAT L2 25 km winds data record, release 1
Description	
Product type	Data Record
Identifier	OSI-152
Acronym	ERS DR 1
Acronym for EDC (APNM)	OR1ERW025
Product navigator reference	
DOI	10.15770/EUM_SAF_OSI_0009
CHARACTERISTICS	
Processing level	L2
Satellite input	ERS-1 and ERS-2 SCAT
Other input	NWP outputs (wind, SST, land-sea mask)
Frequency	NA
Time period	2 March 1992 to 15 January 2001
Central time	NA
Timeliness	Offline
Spatial coverage	Global
Spatial sampling	25 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	* Reanalyses * Ocean models, air-sea interaction * Climate research, Environmental monitoring
COMMENTS	

IDENTIFICATION	
Name	Oceansat-2 L2 25 km winds data record, release 1, Oceansat-2 L2 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
Acronym for EDC	OR1OSW025, OR1OSW050
Product Navigator reference	EO:EUM:DAT:METOP:OSI-153-A, EO:EUM:DAT:METOP:OSI-153-B
DOI	10.15770/EUM_SAF_OSI_0010, 10.15770/EUM_SAF_OSI_0011
CHARACTERISTICS	
Processing level	L2
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	Swath
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	* Reanalyses * Ocean models, air-sea interaction * Climate research, Environmental monitoring
COMMENTS	

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

OSI-SS-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-SS-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-SS-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.

Note : Most of the near-real time wind products can be visualised in a friendly interface called Naiad (<http://naiad.ifremer.fr/>) : OSI-102, OSI-102-b, OSI-104, OSI-104-b.

Note : for information, OSI-102, OSI-102-b, OSI-104, OSI-104-b are also disseminated by JPL/PO.DAAC (outside OSI SAF).

4. Web Site User support specifications

4.1. OSISAF web site specifications

OSI-SS-WUS-1 The OSISAF web site shall offer to the users, depending on their rights, access to :

- General information on the OSISAF,
- Information on the products and their quality,
- Near-real time quicklooks,
- Documentation, including Product User Manuals, Product Validation Reports,
- Operations reports, Technical and scientific reports,
- Service messages, with automatic and selective near-real time sending,
- 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.

OSI-SS-WUS-2 The OSISAF Web site shall be constituted of the central web site, under Météo-France responsibility, and the local web sites, under MET Norway responsibility for high latitude products, and under KNMI responsibility for Wind products.

OSI-SS-WUS-3 The OSISAF web site shall be an efficient element of the OSISAF, available at least 95% of the time on a yearly basis.

4.2. OSISAF central Web site specifications

OSI-SS-WUS-400 The central Web site shall offer to all public :

- General information on the OSISAF,
- Information on the products and their quality, links to products documentation (ATBD, SVR, PUM),
- Operations reports
- List of service messages
- Frequently Asked Questions (FAQ),
- Related links,
- User registration procedure allowing access to protected services,
- Login for users already registered
- User support through a Help desk mechanism a user request form

OSI-SS-WUS-401 The central web site shall offer to registered users, when logged-in :

The whole information accessible to all public and,

- Access to the products on FTP servers,
- A mechanism allowing to update their identification profile, including their wishes concerning the sending of service messages,
- Documentation (technical and scientific reports),
- Frequently Asked Questions (FAQs),

4.3. OSI SAF thematic web sites specifications

The OSI SAF thematic web sites (Low and Mid-latitudes, High Latitudes, Wind) shall include the following information :

- Products documentation (ATBD, SVR, PUM), up-to-date and older versions
- Near-real time quicklooks,
- near real-time information on the products quality
- Live production status (nominal, degraded or outage)

4.4. Service messages specifications

OSI-SS-WUS-700 The service messages concerning a significant anomaly in the OSI SAF near real-time production due to missing products shall be sent to the users within 6 hours as a target for operational products and within 6 working hours as a target for pre-operational products.

4.5. Help desk specifications

Note : Users are recommended to make requests preferably through the central Web site, with the guarantee that they demand will be acknowledged or answered to in time. However requests may be sent to direct contact points.

OSI-SS-WUS-800 Any user account request made through the central OSI SAF web site shall be addressed within 3 working days.

OSI-SS-WUS-801 Any user request made through the central OSI SAF web site shall be registered and acknowledged automatically by the server.

OSI-SS-WUS-802 Any user request made through the central OSI SAF web site shall be sent automatically to the relevant expert.

OSI-SS-WUS-803 Any user request made through the central OSI SAF web site shall be addressed, or at least acknowledged, if longer investigation or significant action is necessary, within 3 working days by, or on behalf of the relevant expert.

- OSI-SS-WUS-804** Any user request concerning an anomaly in the OSI SAF near real-time production due to missing products shall be processed by the operator on duty in the relevant subsystem within 6 hours as a target for operational products and within 6 working hours as a target for pre-operational products.
- OSI-SS-WUS-805** A user shall get access to his requests and their status, via the User Request database available on the web site.

5. Other Users Interactions specifications

5.1. Workshops specifications

- OSI-SS-OUI-1** The OSI SAF R&D team experts shall participate in training activities on scientific aspects by elaborating scientific materials for presentation at seminars and workshop, organised by EUMETSAT or other European Agencies, and by participating in seminars for information and training, with a commitment for a maximum of 1 seminar or workshop (2 or 3 days) per year. This commitment includes the participation, in priority, in the OSI SAF Users Workshops.
- OSI-SS-OUI-2** The outcome from OSI SAF Users Workshops shall be made available on the web Site.

5.2. Visiting Scientists Activities specifications

- OSI-SS-OUI-3** The OSI SAF shall implement Visiting Scientist activities, aiming at improving the information exchange between the OSI SAF team and the scientific community, and at promoting the use of the OSI SAF products.