



Note on in-situ data requirements

Update of D2.1 – Report on In-situ data requirements

September 2013

Report Insider Cover Page

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Change record table

Change	Version	Date	Who
First issue of D2.1	0.1	25.1.2011	GZE
Updated according to comments, recommendations and proposals (EEA reviewers)	0.4	20.2.2011	EEA staff
External review. Recommendations and proposals included.	1.0	16.3.2011	ETCs
Ensure document in line with project requirements as content and quality	2.0	30.3.2011	SHB
Update		02.09.2013	GZE, EUS

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1 Introduction and objectives

The documentation and analysis of in-situ data requirements in a transparent and standardised way is a key activity of a future Copernicus in situ coordinator. This is necessary to identify potential data providers and stakeholders with who data access arrangements should be put in place. Moreover, the information helps exploring observational gaps, synergies, overlaps, and critical constraints that need to be addressed when considering a long term and operational in-situ framework.

Since its beginning in January 2010, the GISC project collected the in situ requirements of all existing Copernicus core services (Land, EMS, Marine, Atmosphere) in consultation with stakeholders from the current Copernicus services. Results were published in report D2.1 which was published in August 2011¹. Alongside a database was set up where requirements were stored.

The report was source for an analysis of in-situ requirements, for a definition of priorities and to estimate related costs associated with a sustainable provision of in-situ data within Copernicus from 2014 onwards.

Due to the evolvement of the services (e.g. the transition from FP7 funded pre-operational research projects to the GIO phase) GISC continuously updated the related in situ needs and maintained its in-situ requirement database. This note is based on a full extract from the Copernicus in-situ data requirements database and represents the current requirement status as of July 2013. Changes compared to the previous version of the report are based on:

1. Update of Atmosphere service requirements in May 2012 as result of the service's review on in-situ needs;
2. Update of Emergency Management Service (EMS) in-situ data requirements (excl. EFAS) as result of a meeting between GISC and JRC in July 2012 during which the earlier gathered in-situ data requirements were reviewed.
3. Update and more detailed specification of reference data requirements of the EMS and GIO Land services as input to the reference data access (RDA) survey, finalized by end July 2012 in consultation with the mentioned services.

With the introduction of the new Copernicus regulation it is expected that services will evolve and new services (e.g. Climate Change) will be further developed. For that reason it is necessary that a future Copernicus in-situ coordinator will continue collecting in-situ requirements of all services in a standardised way to allow a coordinated approach to access available data and to support the long term and sustainable provision of in-situ data to the Copernicus services. The Copernicus in-

¹ http://gisc.ew.eea.europa.eu/gisc-project/deliverables/d21-report-situ-requirements/report-on-in-situ-data-requirements_v3.pdf

situ data requirements database, fully documented in D1.3, provides an efficient tool for maintenance of in-situ needs of evolving and new Copernicus services².

The note is structured along the different services.

² [G:\SES\SES1 GMES\GMES In Situ Coord\GISC PROJECT 2010 - 2012\Deliverables\D1.3 Working papers-guidance, meeting reports, papers\Documentation of the Copernicus in-situ data requirements database](#)

2 Atmosphere Service

MACC-II - Monitoring Atmospheric Composition and Climate is the current pre-operational Copernicus Atmosphere Service. MACC-II provides data records on atmospheric composition for recent years, data for monitoring present conditions and forecasts of the distribution of key constituents for a few days ahead.

MACC-II combines state-of-the-art atmospheric modelling with Earth observation data to provide information services covering European air quality, global atmospheric composition, climate forcing, the ozone layer and UV and solar energy, and emissions and surface fluxes.

MACC-II provides continuity and refinement of the atmospheric services provided by the MACC project. Its continued provision of coherent atmospheric data and information, either directly or via value-adding downstream services, will be for the benefit of European citizens. It will also help to meet global needs as a key European contribution to the Global Climate Observing System (GCOS) and the encompassing Global Earth Observation System of Systems (GEOSS).³

³ Taken from the service website: <http://www.gmes-atmosphere.eu/about/project/>

In-situ data requirement:

Aerosol optical depth - timeliness 1 day, accuracy 0.005, global coverage

Characteristics:

not specified

Target accuracy:

0.005

Threshold accuracy:

0.01

Dissemination:

View and Download

Coverage:

Global

Timeliness:

1 day

Frequency:

15 min

Note:

Currently aerosol optical depth is the only required parameter but other aerosol parameters, including vertical profiles, are being used to improve understanding of atmospheric processes and to develop new products.

Target timeliness requirement is 3 h.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of greenhouse gases and fluxes	Product generation	Essential
Monitoring of surface solar irradiance	Product generation	Essential
Total ozone record	Product generation	Essential
Observed aerosol optical depth and aerosol speciation record	Product generation	Essential
NO ₂ measurements made by OMI	Product generation	Essential
Global fire emissions	Product generation	Essential
Monitoring of greenhouse gases and fluxes	Product generation	Essential
Monitoring of global aerosols	Product generation	Essential
Support for scientific observational campaigns	Product generation	Essential
Reanalysis of global atmospheric composition	Product generation	Essential
Near-real-time ozone monitoring	Product generation	Essential
Near-real-time ozone forecasts	Product generation	Essential
Monitoring and forecasting of total ozone	Product generation	Essential
Monitoring and forecasting of global atmospheric composition	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

Aerosol RObotic NETwork
European Aerosol Research Lidar Network
European Supersites for Atmospheric Aerosol Research
WMO Global Atmosphere Watch
National authorities in Member states
SKYNET

AERONET - aerosol optical depth
EARLINET - aerosol optical profile
EUSAAR - aerosol properties
GAW-WDCA data
National data
SKYNET - aerosol properties

In-situ data requirement:

Aerosol optical depth - timeliness 3 days, accuracy 0.005, global coverage

Characteristics:

not specified

Target accuracy:

0.005

Threshold accuracy:

0.01

Dissemination:

View and Download

Coverage:

Global

Timeliness:

3 days

Frequency:

15 min

Note:

Currently aerosol optical depth is the only required parameter but other aerosol parameters, including vertical profiles, are being used to improve understanding of atmospheric processes and to develop new products.

Target timeliness requirement is 1 day.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring of surface solar irradiance	Calibration and validation	Desirable
Observed aerosol optical depth and aerosol speciation record	Calibration and validation	Desirable
NO ₂ measurements made by OMI	Calibration and validation	Desirable
Global fire emissions	Calibration and validation	Desirable
Total ozone record	Calibration and validation	Desirable
Support for scientific observational campaigns	Calibration and validation	Desirable
Reanalysis of global atmospheric composition	Calibration and validation	Desirable
Near-real-time ozone monitoring	Calibration and validation	Desirable
Near-real-time ozone forecasts	Calibration and validation	Desirable
Monitoring and forecasting of total ozone	Calibration and validation	Desirable
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Desirable
Reanalysis of greenhouse gases and fluxes	Calibration and validation	Desirable
Monitoring of greenhouse gases and fluxes	Calibration and validation	Desirable
Monitoring of global aerosols	Calibration and validation	Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

Aerosol RObotic NETwork
European Aerosol Research Lidar Network
European Supersites for Atmospheric Aerosol Research
WMO Global Atmosphere Watch
National authorities in Member states

AERONET - aerosol optical depth
EARLINET - aerosol optical profile
EUSAAR - aerosol properties
GAW-WDCA data
National data

In-situ data requirement:

Emission inventories - European coverage

Characteristics:

EMEP 2003 emissions inventory; TNO (2000) inventory; GEMS-TNO inventory; NKUA monthly biogenic emission potentials.

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

EEA38

Timeliness:

TBD

Frequency:

TBD

Note:

MACC (D-EMIS) is developing an emissions dataset.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Product generation

Essential

European air quality monitoring and forecasting

Product generation

Essential

Links to Inspire annex(s) and theme(s):

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Annex III: Environmental monitoring facilities

Eionet data flow(s):

AE2b: EU GHG data (Eionet priority data flow)

AE1b: NEC data (Eionet priority data flow)

AE-2: UNFCCC data (Eionet priority data flow)

AE-1: LRTAP data (Eionet priority data flow)

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states

National data

In-situ data requirement:***Emission inventories - global coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

MACC (D-EMIS) is developing an emissions dataset for use with the global model.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Support for scientific observational campaigns	Product generation	TBD
Reanalysis of global atmospheric composition	Product generation	TBD
Near-real-time ozone monitoring	Product generation	TBD
Near-real-time ozone forecasts	Product generation	TBD
Monitoring and forecasting of total ozone	Product generation	TBD
Monitoring and forecasting of global atmospheric composition	Product generation	TBD
Reanalysis of greenhouse gases and fluxes	Product generation	TBD
Monitoring of greenhouse gases and fluxes	Product generation	TBD
Monitoring of global aerosols	Product generation	TBD

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states

National data

In-situ data requirement:***Erythema UV - timeliness 24 hours, accuracy 5-10%, global coverage*****Characteristics:**

not specified

Target accuracy:

5-10%

Threshold accuracy:

5-10%

Dissemination:

View and Download

Coverage:

Global

Timeliness:

1 day

Frequency:

Hourly

Note:

Target timeliness requirement is 3 h.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring of surface solar irradiance	Product generation	Essential
Support for scientific observational campaigns	Product generation	Essential
Reanalysis of global atmospheric composition	Product generation	Essential
Near-real-time ozone monitoring	Product generation	Essential
Near-real-time ozone forecasts	Product generation	Essential
Monitoring and forecasting of total ozone	Product generation	Essential
Monitoring and forecasting of global atmospheric composition	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

European Database for UV Climatology and Evaluation
 National authorities in Member states
 World Ozone and Ultraviolet Radiation Data Centre

Data from EUVDB
 National data
 WOUDC - erythema UV

In-situ data requirement:

Erythema UV - timeliness 6 months, accuracy 5-10%, global coverage

Characteristics:

not specified

Target accuracy:

5-10%

Threshold accuracy:

5-10%

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

Hourly

Note:

Target timeliness requirement is 1 months.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring of surface solar irradiance	Calibration and validation	Useful
Support for scientific observational campaigns	Calibration and validation	Useful
Reanalysis of global atmospheric composition	Calibration and validation	Useful
Near-real-time ozone monitoring	Calibration and validation	Useful
Near-real-time ozone forecasts	Calibration and validation	Useful
Monitoring and forecasting of total ozone	Calibration and validation	Useful
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Useful

Links to Inspire annex(s) and theme(s):

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Potential in-situ data providers**Dataset/Product name**

European Database for UV Climatology and Evaluation
National authorities in Member states
World Ozone and Ultraviolet Radiation Data Centre

Data from EUVDB
National data
WOUDC - erythema UV

In-situ data requirement:***Greenhouse gases - total column CH₄ - accuracy 2 ppb, global coverage*****Characteristics:**

not specified

Target accuracy:

2 ppb

Threshold accuracy:

2 ppb

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

Daily

Note:

Target timeliness requirement is 1 month.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring of global aerosols	Product generation	Desirable
Monitoring of greenhouse gases and fluxes	Calibration and validation	Desirable
Reanalysis of greenhouse gases and fluxes	Calibration and validation	Desirable
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Desirable
Monitoring and forecasting of total ozone	Calibration and validation	Desirable
Near-real-time ozone forecasts	Calibration and validation	Desirable
Near-real-time ozone monitoring	Calibration and validation	Desirable
Monitoring of global aerosols	Calibration and validation	Desirable
Support for scientific observational campaigns	Calibration and validation	Desirable
Support for scientific observational campaigns	Product generation	Desirable
Monitoring of greenhouse gases and fluxes	Product generation	Desirable
Reanalysis of greenhouse gases and fluxes	Product generation	Desirable
Monitoring and forecasting of global atmospheric composition	Product generation	Desirable
Monitoring and forecasting of total ozone	Product generation	Desirable
Near-real-time ozone forecasts	Product generation	Desirable
Near-real-time ozone monitoring	Product generation	Desirable
Reanalysis of global atmospheric composition	Product generation	Desirable
Reanalysis of global atmospheric composition	Calibration and validation	Desirable

Links to Inspire annex(s) and theme(s):

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Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

WMO Global Atmosphere Watch	Data from WMO GAW
Integrated Carbon Observation System continuous	ICOS - CH ₄ - surface stations,
Integrated Carbon Observation System	ICOS - CH ₄ - tower observations
Infrastructure for Measurements of the European Carbon Cycle	IMECC-CH ₄
National authorities in Member states	National data
The international Network for the Detection of Atmospheric composition Change	NDACC - CH ₄ - profile and total
Total Carbon Column Absorbing Network	TCCON - CH ₄

In-situ data requirement:

Greenhouse gases - total column CO₂ - accuracy 0.5 ppm, global coverage

Characteristics:

not specified

Target accuracy:

0.5 ppm

Threshold accuracy:

0.8 ppm

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

Daily

Note:

It is currently not known if routinely assimilation of CO₂ is foreseen in the future.
Target timeliness requirement is 1 month.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring of global aerosols	Product generation	Desirable
Monitoring of greenhouse gases and fluxes	Calibration and validation	Desirable
Reanalysis of greenhouse gases and fluxes	Calibration and validation	Desirable
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Desirable
Monitoring and forecasting of total ozone	Calibration and validation	Desirable
Near-real-time ozone forecasts	Calibration and validation	Desirable
Reanalysis of global atmospheric composition	Calibration and validation	Desirable
Monitoring of global aerosols	Calibration and validation	Desirable
Near-real-time ozone monitoring	Calibration and validation	Desirable
Support for scientific observational campaigns	Product generation	Desirable
Monitoring of greenhouse gases and fluxes	Product generation	Desirable
Reanalysis of greenhouse gases and fluxes	Product generation	Desirable
Monitoring and forecasting of global atmospheric composition	Product generation	Desirable
Monitoring and forecasting of total ozone	Product generation	Desirable
Near-real-time ozone forecasts	Product generation	Desirable
Near-real-time ozone monitoring	Product generation	Desirable
Reanalysis of global atmospheric composition	Product generation	Desirable
Support for scientific observational campaigns	Calibration and validation	Desirable

Links to Inspire annex(s) and theme(s):

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Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

WMO Global Atmosphere Watch	Data from WMO GAW
Integrated Carbon Observation System continuous	ICOS - CO ₂ - surface stations,
Integrated Carbon Observation System	ICOS - CO ₂ - tower observations
Infrastructure for Measurements of the European Carbon Cycle	IMECC-CO ₂
National authorities in Member states	National data
Total Carbon Column Absorbing Network	TCCON - CO ₂

In-situ data requirement:

Greenhouse gases - CH₄ (conc. & fluxes) - timeliness 6 months, accuracy 2-4 ppb, global coverage

Characteristics:

not specified

Target accuracy:

2-4 ppb

Threshold accuracy:

2-4 ppb

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

Hourly

Note:

Target timeliness requirement is 1 month.

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

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Potential in-situ data providers

WMO Global Atmosphere Watch

Integrated Carbon Observation System
continuous

Integrated Carbon Observation System

Infrastructure for Measurements of the European Carbon Cycle

National authorities in Member states

Total Carbon Column Absorbing Network

Dataset/Product name

Data from WMO GAW

ICOS - CH₄ - surface stations,

ICOS - CH₄ - tower observations

IMECC-CH₄

National data

TCCON - CH₄

In-situ data requirement:

Greenhouse gases - CO₂ (conc. & fluxes) - timeliness 6 months, accuracy 0.1 ppm, global coverage

Characteristics:

not specified

Target accuracy:

0.1 ppm

Threshold accuracy:

0.8 ppm

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

Hourly

Note:

Target timeliness requirement is 1 month.

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

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Potential in-situ data providers

WMO Global Atmosphere Watch

Integrated Carbon Observation System
continuous

Integrated Carbon Observation System

Infrastructure for Measurements of the European Carbon Cycle

National authorities in Member states

Total Carbon Column Absorbing Network

Dataset/Product name

Data from WMO GAW

ICOS - CO₂ - surface stations,

ICOS - CO₂ - tower observations

IMECC-CO₂

National data

TCCON - CO₂

In-situ data requirement:

Greenhouse gases near-real-time measurements - CH₄ (conc. & fluxes) - timeliness 6 months, accuracy 2-4 ppb, EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

2-4 ppb

Threshold accuracy:

2-4 ppb

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

Hourly

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation. Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 1 month.

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Calibration and validation

Essential

European air quality monitoring and forecasting

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

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Potential in-situ data providers**Dataset/Product name**

WMO Global Atmosphere Watch

Data from WMO GAW

Integrated Carbon Observation System
continuous

ICOS - CH₄ - surface stations,

Integrated Carbon Observation System

ICOS - CH₄ - tower observations

Infrastructure for Measurements of the European Carbon Cycle

IMECC-CH₄

National authorities in Member states

National data

Total Carbon Column Absorbing Network

TCCON - CH₄

In-situ data requirement:

Greenhouse gases near-real-time measurements - CO₂ (conc. & fluxes) - timeliness 6 months, accuracy 0.1 ppm, EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

0.1 ppm

Threshold accuracy:

0.8 ppm

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

Hourly

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 1 month.

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Calibration and validation

Essential

European air quality monitoring and forecasting

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

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Potential in-situ data providers**Dataset/Product name**

WMO Global Atmosphere Watch

Data from WMO GAW

Integrated Carbon Observation System
continuous

ICOS - CO₂ - surface stations,

Infrastructure for Measurements of the European Carbon Cycle

IMECC-CO₂

National authorities in Member states

National data

European Environment Agency

NRT Airbase

Total Carbon Column Absorbing Network

TCCON - CO₂

In-situ data requirement:***Meteorological observations - air pressure - timeliness 12 hrs, global coverage*****Characteristics:**

not specified

Target accuracy:

TBD

Threshold accuracy:

TBD

Dissemination:

View and Download

Coverage:

Global

Timeliness:

12 hours

Frequency:

<1 hr

Note:

Meteorological observations are available to the GMES atmosphere core service via ECMWF and National Meteorological Services that contribute to the service.

Meteorological observations are in most cases made available as model fields (boundary conditions for downstream models) and thus meteorological observations are in a way only an indirect requirement.

TBD: Probably not all required parameters are listed.

TBD: It is currently not known if near real time access to meteorological observations is needed for the Solar radiation product.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring of surface solar irradiance	Product generation	Essential
Support for scientific observational campaigns	Product generation	Essential
Reanalysis of global atmospheric composition	Product generation	Essential
Near-real-time ozone monitoring	Product generation	Essential
Near-real-time ozone forecasts	Product generation	Essential
Monitoring and forecasting of total ozone	Product generation	Essential
Monitoring and forecasting of global atmospheric composition	Product generation	Essential
Reanalysis of European air quality	Product generation	Essential
European air quality monitoring and forecasting	Product generation	Essential
Reanalysis of greenhouse gases and fluxes	Product generation	Essential
Monitoring of greenhouse gases and fluxes	Product generation	Essential
Monitoring of global aerosols	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers**Dataset/Product name**

The Network of European Meteorological Services
National authorities in Member states

Meteorological observations
National data

In-situ data requirement:***Meteorological observations - humidity - timeliness 12 hrs, global coverage*****Characteristics:**

not specified

Target accuracy:

TBD

Threshold accuracy:

TBD

Dissemination:

View and Download

Coverage:

Global

Timeliness:

12 hours

Frequency:

<1 hr

Note:

Meteorological observations are available to the GMES atmosphere core service via ECMWF and National Meteorological Services that contribute to the service.

Meteorological observations are in most cases made available as model fields (boundary conditions for downstream models) and thus meteorological observations are in a way only an indirect requirement.

TBD: Probably not all required parameters are listed.

TBD: It is currently not known if near real time access to meteorological observations is needed for the Solar radiation product.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring and forecasting of ultraviolet radiation	Product generation	Essential
Support for scientific observational campaigns	Product generation	Essential
Reanalysis of global atmospheric composition	Product generation	Essential
Near-real-time ozone monitoring	Product generation	Essential
Near-real-time ozone forecasts	Product generation	Essential
Monitoring and forecasting of total ozone	Product generation	Essential
Monitoring and forecasting of global atmospheric composition	Product generation	Essential
Reanalysis of European air quality	Product generation	Essential
European air quality monitoring and forecasting	Product generation	Essential
Reanalysis of greenhouse gases and fluxes	Product generation	Essential
Monitoring of greenhouse gases and fluxes	Product generation	Essential
Monitoring of global aerosols	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers**Dataset/Product name**

The Network of European Meteorological Services
National authorities in Member states

Meteorological observations
National data

In-situ data requirement:***Meteorological observations - longwave radiation - timeliness 12 hrs, global coverage*****Characteristics:**

not specified

Target accuracy:

TBD

Threshold accuracy:

TBD

Dissemination:

View and Download

Coverage:

Global

Timeliness:

12 hours

Frequency:

<1 hr

Note:

Meteorological observations are available to the GMES atmosphere core service via ECMWF and National Meteorological Services that contribute to the service.

Meteorological observations are in most cases made available as model fields (boundary conditions for downstream models) and thus meteorological observations are in a way only an indirect requirement.

TBD: Probably not all required parameters are listed.

TBD: It is currently not known if near real time access to meteorological observations is needed for the Solar radiation product.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring of surface solar irradiance	Product generation	Essential
Support for scientific observational campaigns	Product generation	Essential
Reanalysis of global atmospheric composition	Product generation	Essential
Near-real-time ozone monitoring	Product generation	Essential
Near-real-time ozone forecasts	Product generation	Essential
Monitoring and forecasting of total ozone	Product generation	Essential
Monitoring and forecasting of global atmospheric composition	Product generation	Essential
Reanalysis of European air quality	Product generation	Essential
European air quality monitoring and forecasting	Product generation	Essential
Reanalysis of greenhouse gases and fluxes	Product generation	Essential
Monitoring of greenhouse gases and fluxes	Product generation	Essential
Monitoring of global aerosols	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers**Dataset/Product name**

The Network of European Meteorological Services
National authorities in Member states

Meteorological observations
National data

In-situ data requirement:***Meteorological observations - precipitation - timeliness 12 hrs, global coverage*****Characteristics:**

not specified

Target accuracy:

TBD

Threshold accuracy:

TBD

Dissemination:

View and Download

Coverage:

Global

Timeliness:

12 hours

Frequency:

<1 hr

Note:

Meteorological observations are available to the GMES atmosphere core service via ECMWF and National Meteorological Services that contribute to the service.

Meteorological observations are in most cases made available as model fields (boundary conditions for downstream models) and thus meteorological observations are in a way only an indirect requirement.

TBD: Probably not all required parameters are listed.

TBD: It is currently not known if near real time access to meteorological observations is needed for the Solar radiation product.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring and forecasting of ultraviolet radiation	Product generation	Essential
Support for scientific observational campaigns	Product generation	Essential
Reanalysis of global atmospheric composition	Product generation	Essential
Near-real-time ozone monitoring	Product generation	Essential
Near-real-time ozone forecasts	Product generation	Essential
Monitoring and forecasting of total ozone	Product generation	Essential
Monitoring and forecasting of global atmospheric composition	Product generation	Essential
Reanalysis of European air quality	Product generation	Essential
European air quality monitoring and forecasting	Product generation	Essential
Reanalysis of greenhouse gases and fluxes	Product generation	Essential
Monitoring of greenhouse gases and fluxes	Product generation	Essential
Monitoring of global aerosols	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers**Dataset/Product name**

The Network of European Meteorological Services
National authorities in Member states

Meteorological observations
National data

In-situ data requirement:***Meteorological observations - shortwave radiation - timeliness 12 hrs, global coverage*****Characteristics:**

not specified

Target accuracy:

TBD

Threshold accuracy:

TBD

Dissemination:

View and Download

Coverage:

Global

Timeliness:

12 hours

Frequency:

<1 hr

Note:

Meteorological observations are available to the GMES atmosphere core service via ECMWF and National Meteorological Services that contribute to the service.

Meteorological observations are in most cases made available as model fields (boundary conditions for downstream models) and thus meteorological observations are in a way only an indirect requirement.

TBD: Probably not all required parameters are listed.

TBD: It is currently not known if near real time access to meteorological observations is needed for the Solar radiation product.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring and forecasting of ultraviolet radiation	Product generation	Essential
Support for scientific observational campaigns	Product generation	Essential
Reanalysis of global atmospheric composition	Product generation	Essential
Near-real-time ozone monitoring	Product generation	Essential
Near-real-time ozone forecasts	Product generation	Essential
Monitoring and forecasting of total ozone	Product generation	Essential
Monitoring and forecasting of global atmospheric composition	Product generation	Essential
Reanalysis of European air quality	Product generation	Essential
European air quality monitoring and forecasting	Product generation	Essential
Reanalysis of greenhouse gases and fluxes	Product generation	Essential
Monitoring of greenhouse gases and fluxes	Product generation	Essential
Monitoring of global aerosols	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers**Dataset/Product name**

The Network of European Meteorological Services
National authorities in Member states

Meteorological observations
National data

In-situ data requirement:***Meteorological observations - temperature- timeliness 12 hrs, global coverage*****Characteristics:**

not specified

Target accuracy:

TBD

Threshold accuracy:

TBD

Dissemination:

View and Download

Coverage:

Global

Timeliness:

12 hours

Frequency:

<1 hr

Note:

Meteorological observations are available to the GMES atmosphere core service via ECMWF and National Meteorological Services that contribute to the service.

Meteorological observations are in most cases made available as model fields (boundary conditions for downstream models) and thus meteorological observations are in a way only an indirect requirement.

TBD: Probably not all required parameters are listed.

TBD: It is currently not known if near real time access to meteorological observations is needed for the Solar radiation product.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring and forecasting of ultraviolet radiation	Product generation	Essential
Support for scientific observational campaigns	Product generation	Essential
Reanalysis of global atmospheric composition	Product generation	Essential
Near-real-time ozone monitoring	Product generation	Essential
Near-real-time ozone forecasts	Product generation	Essential
Monitoring and forecasting of total ozone	Product generation	Essential
Monitoring and forecasting of global atmospheric composition	Product generation	Essential
Reanalysis of European air quality	Product generation	Essential
European air quality monitoring and forecasting	Product generation	Essential
Reanalysis of greenhouse gases and fluxes	Product generation	Essential
Monitoring of greenhouse gases and fluxes	Product generation	Essential
Monitoring of global aerosols	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers**Dataset/Product name**

The Network of European Meteorological Services
National authorities in Member states

Meteorological observations
National data

In-situ data requirement:

Meteorological observations - wind direction - timeliness 12 hrs, global coverage

Characteristics:

not specified

Target accuracy:

TBD

Threshold accuracy:

TBD

Dissemination:

View and Download

Coverage:

Global

Timeliness:

12 hours

Frequency:

<1 hr

Note:

Meteorological observations are available to the GMES atmosphere core service via ECMWF and National Meteorological Services that contribute to the service.

Meteorological observations are in most cases made available as model fields (boundary conditions for downstream models) and thus meteorological observations are in a way only an indirect requirement.

TBD: Probably not all required parameters are listed.

TBD: It is currently not known if near real time access to meteorological observations is needed for the Solar radiation product.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring and forecasting of ultraviolet radiation	Product generation	Essential
Support for scientific observational campaigns	Product generation	Essential
Reanalysis of global atmospheric composition	Product generation	Essential
Near-real-time ozone monitoring	Product generation	Essential
Near-real-time ozone forecasts	Product generation	Essential
Monitoring and forecasting of total ozone	Product generation	Essential
Monitoring and forecasting of global atmospheric composition	Product generation	Essential
Reanalysis of European air quality	Product generation	Essential
European air quality monitoring and forecasting	Product generation	Essential
Reanalysis of greenhouse gases and fluxes	Product generation	Essential
Monitoring of greenhouse gases and fluxes	Product generation	Essential
Monitoring of global aerosols	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers**Dataset/Product name**

The Network of European Meteorological Services
National authorities in Member states

Meteorological observations
National data

In-situ data requirement:***Meteorological observations - wind speed - timeliness 12 hrs, global coverage*****Characteristics:**

not specified

Target accuracy:

TBD

Threshold accuracy:

TBD

Dissemination:

View and Download

Coverage:

Global

Timeliness:

12 hours

Frequency:

<1 hr

Note:

Meteorological observations are available to the GMES atmosphere core service via ECMWF and National Meteorological Services that contribute to the service.

Meteorological observations are in most cases made available as model fields (boundary conditions for downstream models) and thus meteorological observations are in a way only an indirect requirement.

TBD: Probably not all required parameters are listed.

TBD: It is currently not known if near real time access to meteorological observations is needed for the Solar radiation product.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring and forecasting of ultraviolet radiation	Product generation	Essential
Support for scientific observational campaigns	Product generation	Essential
Reanalysis of global atmospheric composition	Product generation	Essential
Near-real-time ozone monitoring	Product generation	Essential
Near-real-time ozone forecasts	Product generation	Essential
Monitoring and forecasting of total ozone	Product generation	Essential
Monitoring and forecasting of global atmospheric composition	Product generation	Essential
Reanalysis of European air quality	Product generation	Essential
European air quality monitoring and forecasting	Product generation	Essential
Reanalysis of greenhouse gases and fluxes	Product generation	Essential
Monitoring of greenhouse gases and fluxes	Product generation	Essential
Monitoring of global aerosols	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers**Dataset/Product name**

The Network of European Meteorological Services
National authorities in Member states

Meteorological observations
National data

In-situ data requirement:***Spectral UV - accuracy 1-5%, global coverage*****Characteristics:**

not specified

Target accuracy:

1-5%

Threshold accuracy:

1-5%

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

Hourly

Note:

Target timeliness requirement is 1 month.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring of surface solar irradiance	Calibration and validation	Useful
Support for scientific observational campaigns	Calibration and validation	Useful
Reanalysis of global atmospheric composition	Calibration and validation	Useful
Near-real-time ozone monitoring	Calibration and validation	Useful
Near-real-time ozone forecasts	Calibration and validation	Useful
Monitoring and forecasting of total ozone	Calibration and validation	Useful
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Useful

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

European Database for UV Climatology and Evaluation	Data from EUVDB
National authorities in Member states	National data
World Ozone and Ultraviolet Radiation Data Centre	WOUDC - spectral UV

In-situ data requirement:

Surface near-real-time measurements - CH₄ (conc.&fluxes) - timeliness 6 months, accuracy 2-4 ppb, EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

2-4 ppb

Threshold accuracy:

2-4 ppb

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 1month.

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Calibration and validation

Essential

European air quality monitoring and forecasting

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

Integrated Carbon Observation System
continuous

ICOS - CH₄ - surface stations,

Infrastructure for Measurements of the European Carbon Cycle

IMECC-CH₄

National authorities in Member states

National data

In-situ data requirement:

Surface near-real-time measurements - CO - timeliness 6 months, EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

TBD

Threshold accuracy:

TBD

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 1 month.

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Calibration and validation

Essential

European air quality monitoring and forecasting

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

United States Environmental Protection Agency

AirNow

WMO Global Atmosphere Watch

Data from WMO GAW

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

EMEP - CO

Integrated Carbon Observation System

ICOS - CO

National authorities in Member states

National data

European Environment Agency

NRT Airbase

In-situ data requirement:

Surface near-real-time measurements - CO- timeliness 24 hrs, EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

TBD

Threshold accuracy:

TBD

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

1 day

Frequency:

<1 hr

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 3 h.

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

European air quality monitoring and forecasting

Product generation

Product generation

Desirable

Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Eionet data flow(s):

Near real time ozone data reporting

Potential in-situ data providers**Dataset/Product name**

United States Environmental Protection Agency

WMO Global Atmosphere Watch

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

Integrated Carbon Observation System

National authorities in Member states

European Environment Agency

AirNow

Data from WMO GAW

EMEP - CO

ICOS - CO

National data

NRT Airbase

In-situ data requirement:

Surface near-real-time measurements - CO₂ (conc.&fluxes) - timeliness 6 months, accuracy 0.1 ppm, EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

0.1 ppm

Threshold accuracy:

0.5 ppm

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 1month.

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Calibration and validation

Essential

European air quality monitoring and forecasting

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

Integrated Carbon Observation System
continuous

ICOS - CO₂ - surface stations,

Infrastructure for Measurements of the European Carbon Cycle

IMECC-CO₂

National authorities in Member states

National data

In-situ data requirement:

Surface near-real-time measurements - NO - timeliness 24 hrs, accuracy 100 ppb., EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

100 ppb. (15 % acc. to EU directive)

Threshold accuracy:

100 ppb. (15 % acc. to EU directive)

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

1 day

Frequency:

<1 hr

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 3 h.

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Product generation

Essential

European air quality monitoring and forecasting

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Eionet data flow(s):

Near real time ozone data reporting

Potential in-situ data providers**Dataset/Product name**

United States Environmental Protection Agency

AirNow

WMO Global Atmosphere Watch

Data from WMO GAW

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

EMEP - NO

National authorities in Member states

National data

European Environment Agency

NRT Airbase

In-situ data requirement:

Surface near-real-time measurements - NO - timeliness 6 months, accuracy 100 ppb., EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

100 ppb. (15 % acc. to EU directive)

Threshold accuracy:

100 ppb. (15 % acc. to EU directive)

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 1 month.

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Calibration and validation

Essential

European air quality monitoring and forecasting

Calibration and validation

Essential

Links to Inspire annex(s) and**theme(s):**

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

United States Environmental Protection Agency

AirNow

WMO Global Atmosphere Watch

Data from WMO GAW

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

EMEP - NO

National authorities in Member states

National data

European Environment Agency

NRT Airbase

In-situ data requirement:

Surface near-real-time measurements - NO₂ - timeliness 24 hrs, accuracy 100 ppb, EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

100 ppb. (15 % acc. to EU directive)

Threshold accuracy:

100 ppb. (15 % acc. to EU directive)

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

1 day

Frequency:

<1 hr

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 3 h.

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Product generation

Essential

European air quality monitoring and forecasting

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Eionet data flow(s):

Near real time ozone data reporting

Potential in-situ data providers**Dataset/Product name**

United States Environmental Protection Agency

AirNow

WMO Global Atmosphere Watch

Data from WMO GAW

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

EMEP - NO₂

National authorities in Member states

National data

European Environment Agency

NRT Airbase

In-situ data requirement:

Surface near-real-time measurements - NO₂ - timeliness 6 months, accuracy 100 ppb, EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

100 ppb. (15 % acc. to EU directive)

Threshold accuracy:

100 ppb. (15 % acc. to EU directive)

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 1 month.

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Calibration and validation

Essential

European air quality monitoring and forecasting

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

United States Environmental Protection Agency

AirNow

WMO Global Atmosphere Watch

Data from WMO GAW

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

EMEP - NO₂

National authorities in Member states

National data

European Environment Agency

NRT Airbase

In-situ data requirement:

Surface near-real-time measurements - O3 - timeliness 24 hrs, accuracy 5 ppb, EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

5 ppb. (15 % acc. to EU directive)

Threshold accuracy:

5 ppb. (15 % acc. to EU directive)

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

1 day

Frequency:

<1 hr

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 3 h.

In the future global coverage may be needed.

Relevant Copernicus product data:

European air quality monitoring and forecasting
Reanalysis of European air quality

in-situ data is required for: Criticality of in-situ

Product generation
Product generation

Essential
Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Eionet data flow(s):

Near real time ozone data reporting

Potential in-situ data providers

United States Environmental Protection Agency
WMO Global Atmosphere Watch
National authorities in Member states
European Environment Agency

Dataset/Product name

AirNow
Data from WMO GAW
National data
NRT Airbase

In-situ data requirement:

Surface near-real-time measurements - O3 - timeliness 6 months, accuracy 5 ppb, EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

5 ppb. (15 % acc. to EU directive)

Threshold accuracy:

5 ppb. (15 % acc. to EU directive)

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 1 month.

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Calibration and validation

Essential

European air quality monitoring and forecasting

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

United States Environmental Protection Agency

AirNow

WMO Global Atmosphere Watch

Data from WMO GAW

National authorities in Member states

National data

European Environment Agency

NRT Airbase

In-situ data requirement:

Surface near-real-time measurements - PM10 - timeliness 24 hrs, accuracy 0.1 µg.m-3, EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

0.1 µg.m-3 (25% acc. to EU directive)

Threshold accuracy:

0.1 µg.m-3 (25% acc. to EU directive)

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

1 day

Frequency:

<1 hr

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 3 h.

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Product generation

Essential

European air quality monitoring and forecasting

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Eionet data flow(s):

Near real time ozone data reporting

Potential in-situ data providers**Dataset/Product name**

United States Environmental Protection Agency

AirNow

WMO Global Atmosphere Watch

Data from WMO GAW

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

EMEP - PM10 Mass

National authorities in Member states

National data

European Environment Agency

NRT Airbase

In-situ data requirement:

Surface near-real-time measurements - PM10 - timeliness 6 months, accuracy 0.1 µg.m-3, EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

0.1 µg.m-3 (25% acc. to EU directive)

Threshold accuracy:

0.1 µg.m-3 (25% acc. to EU directive)

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 1 month.

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Product generation

Essential

European air quality monitoring and forecasting

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

United States Environmental Protection Agency

AirNow

WMO Global Atmosphere Watch

Data from WMO GAW

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

EMEP - PM10 Mass

National authorities in Member states

National data

European Environment Agency

NRT Airbase

In-situ data requirement:

Surface near-real-time measurements - PM_{2.5} - timeliness 24 hrs, accuracy 0.1 µg.m⁻³, EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

0.1 µg.m⁻³ (25% acc. to EU directive)

Threshold accuracy:

0.1 µg.m⁻³ (25% acc. to EU directive)

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

1 day

Frequency:

<1 hr

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 3 h.

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Product generation

Essential

European air quality monitoring and forecasting

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Eionet data flow(s):

Near real time ozone data reporting

Potential in-situ data providers**Dataset/Product name**

United States Environmental Protection Agency

AirNow

WMO Global Atmosphere Watch

Data from WMO GAW

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

EMEP - PM_{2.5} Mass

National authorities in Member states

National data

European Environment Agency

NRT Airbase

In-situ data requirement:

Surface near-real-time measurements - PM2.5 - timeliness 6 months, accuracy 0.1 µg.m-3, EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

0.1 µg.m-3 (25% acc. to EU directive)

Threshold accuracy:

0.1 µg.m-3 (25% acc. to EU directive)

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 1 month.

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Calibration and validation

Essential

European air quality monitoring and forecasting

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Eionet data flow(s):

Near real time ozone data reporting

Potential in-situ data providers**Dataset/Product name**

United States Environmental Protection Agency

AirNow

WMO Global Atmosphere Watch

Data from WMO GAW

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

EMEP - PM2.5 Mass

National authorities in Member states

National data

European Environment Agency

NRT Airbase

In-situ data requirement:

Surface near-real-time measurements - SO₂ - timeliness 24 hrs, EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

TBD

Threshold accuracy:

TBD

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

1 day

Frequency:

<1 hr

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 3 hrs

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Product generation

Essential

European air quality monitoring and forecasting

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

United States Environmental Protection Agency

AirNow

WMO Global Atmosphere Watch

Data from WMO GAW

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

EMEP - SO₂

National authorities in Member states

National data

European Environment Agency

NRT Airbase

In-situ data requirement:

Surface near-real-time measurements - SO₂ - timeliness 6 months, EU27, EEA39, global coverage

Characteristics:

not specified

Target accuracy:

TBD

Threshold accuracy:

TBD

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Seven regional air-quality analysis and forecasting systems are operated routinely for MACC and require surface air quality measurements for assimilation and validation.

Surface air quality measurements delivered in near real time are un-validated.

Target timeliness requirement is 1 month.

In the future global coverage may be needed.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality

Calibration and validation

Useful

European air quality monitoring and forecasting

Calibration and validation

Useful

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Eionet data flow(s):

Near real time ozone data reporting

Potential in-situ data providers**Dataset/Product name**

United States Environmental Protection Agency

AirNow

WMO Global Atmosphere Watch

Data from WMO GAW

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

EMEP - SO₂

National authorities in Member states

National data

European Environment Agency

NRT Airbase

In-situ data requirement:***Surface validated measurements - aerosol properties - global coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

not specified

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

Calibration and validation

Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providersEuropean Supersites for Atmospheric Aerosol Research
National authorities in Member states**Dataset/Product name**EUSAAR - aerosol properties
National data

In-situ data requirement:***Surface validated measurements - benzene - global coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

not specified

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

TBD

Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers

European Environment Agency

National authorities in Member states

Dataset/Product name

Airbase - Benzene

National data

In-situ data requirement:

Surface validated measurements - CH₄ (conc. and fluxes) - timeliness 6 months, accuracy 2-4 ppb, global coverage

Characteristics:

not specified

Target accuracy:

2-4 ppb

Threshold accuracy:

2-4 ppb

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

Hourly

Note:

Target timeliness requirement is 1 month.

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers

Integrated non-CO₂ Greenhouse gas Observing Systems
National authorities in Member states

Dataset/Product name

InGOS - CH₄
National data

In-situ data requirement:***Surface validated measurements - CO - timeliness 6 months, global coverage*****Characteristics:**

not specified

Target accuracy:

TBD

Threshold accuracy:

TBD

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Target timeliness requirement is 1 month.

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Eionet data flow(s):

AQ-1: EoI data (Eionet priority data flow)

Potential in-situ data providers

European Environment Agency

WMO Global Atmosphere Watch

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

National authorities in Member states

Dataset/Product name

Airbase - CO

Data from WMO GAW

EMEP - CO

National data

In-situ data requirement:

Surface validated measurements - CO₂ (conc. and fluxes) - timeliness 6 months, accuracy 0.1 ppm, global coverage

Characteristics:

not specified

Target accuracy:

0.1 ppm

Threshold accuracy:

0.5 ppm

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

Hourly

Note:

Target timeliness requirement is 1 month.

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers

Integrated Carbon Observation System
continuous

National authorities in Member states

Dataset/Product name

ICOS - CO₂ - surface stations,

National data

In-situ data requirement:***Surface validated measurements - halogen source gases - global coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

not specified

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

TBD

Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Surface validated measurements - isopren - global coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

not specified

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

Calibration and validation

Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Surface validated measurements - NMVOC (speciated) - global coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

not specified

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers

European Environment Agency

National authorities in Member states

Dataset/Product name

Airbase - NMVOC

National data

In-situ data requirement:

Surface validated measurements - NO - timeliness 6 months, accuracy 100 ppb, global coverage

Characteristics:

not specified

Target accuracy:

100 ppb. (15 % acc. to EU directive)

Threshold accuracy:

100 ppb. (15 % acc. to EU directive)

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Target timeliness requirement is 1 month.

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Eionet data flow(s):

AQ-1: EoI data (Eionet priority data flow)

Potential in-situ data providers

European Environment Agency

WMO Global Atmosphere Watch

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

National authorities in Member states

Dataset/Product name

Airbase - NO

Data from WMO GAW

EMEP - NO

National data

In-situ data requirement:

Surface validated measurements - NO₂ - timeliness 6 months, accuracy 100 ppb, global coverage

Characteristics:

not specified

Target accuracy:

100 ppb. (15 % acc. to EU directive)

Threshold accuracy:

100 ppb. (15 % acc. to EU directive)

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Target timeliness requirement is 1 month.

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Eionet data flow(s):

AQ-1: EoI data (Eionet priority data flow)

Potential in-situ data providers

European Environment Agency

WMO Global Atmosphere Watch

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

National authorities in Member states

Dataset/Product name

Airbase - NO₂

Data from WMO GAW

EMEP - NO₂

National data

In-situ data requirement:

Surface validated measurements - 03 - timeliness 6 months, accuracy 5 ppb, global coverage

Characteristics:

not specified

Target accuracy:

5 ppb. (15 % acc. to EU directive)

Threshold accuracy:

5 ppb. (15 % acc. to EU directive)

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Target timeliness requirement is 1 month.

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Eionet data flow(s):

AQ-1: EoI data (Eionet priority data flow)

Potential in-situ data providers

European Environment Agency

WMO Global Atmosphere Watch

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

National authorities in Member states

Dataset/Product name

Airbase - Ozone

Data from WMO GAW

EMEP - Ozone

National data

In-situ data requirement:***Surface validated measurements - PAH - global coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

not specified

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

Calibration and validation

Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers

European Environment Agency

National authorities in Member states

Dataset/Product name

Airbase - PAH

National data

In-situ data requirement:

Surface validated measurements - PM spec. -timeliness 6 months, accuracy 5 ppb, global coverage

Characteristics:

not specified

Target accuracy:

5 ppb

Threshold accuracy:

5 ppb

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Target timeliness requirement is 1 month.

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Eionet data flow(s):

AQ-1: EoI data (Eionet priority data flow)

Potential in-situ data providers

WMO Global Atmosphere Watch

Co-operative Programme for Monitoring and Evaluation of the

Long-range Transmission of Air Pollutants in Europe

National authorities in Member states

Dataset/Product name

Data from WMO GAW

EMEP - Speciated aerosol (no size cut-off)

National data

In-situ data requirement:

Surface validated measurements - PM10 - timeliness 6 months, accuracy 0.1 µg.m-3, global coverage

Characteristics:

not specified

Target accuracy:

0.1 µg.m-3 (25% acc. to EU directive)

Threshold accuracy:

0.1 µg.m-3 (25% acc. to EU directive)

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Target timeliness requirement is 1 month.

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Eionet data flow(s):

AQ-1: EoI data (Eionet priority data flow)

Potential in-situ data providers

European Environment Agency

WMO Global Atmosphere Watch

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

National authorities in Member states

Dataset/Product name

Airbase - PM10 Mass

Data from WMO GAW

EMEP - PM10 Mass

EMEP - Speciated aerosol PM10

National data

In-situ data requirement:

Surface validated measurements - PM_{2.5} - timeliness 6 months, accuracy 0.1 µg.m⁻³, global coverage

Characteristics:

not specified

Target accuracy:

0.1 µg.m⁻³ (25% acc. to EU directive)

Threshold accuracy:

0.1 µg.m⁻³ (25% acc. to EU directive)

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Target timeliness requirement is 1 month.

Relevant Copernicus product data:

Reanalysis of global atmospheric composition

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Eionet data flow(s):

AQ-1: EoI data (Eionet priority data flow)

Potential in-situ data providers

European Environment Agency

WMO Global Atmosphere Watch

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

National authorities in Member states

Dataset/Product name

Airbase - PM_{2.5} Mass

Data from WMO GAW

EMEP - PM_{2.5} Mass

EMEP - Speciated aerosol PM_{2.5}

National data

In-situ data requirement:***Surface validated measurements -SO₂ - timeliness 6 months, global coverage*****Characteristics:**

not specified

Target accuracy:

TBD

Threshold accuracy:

TBD

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

<1 hr

Note:

Target timeliness requirement is 1 month.

Relevant Copernicus product data:

Reanalysis of European air quality

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Eionet data flow(s):

AQ-1: EoI data (Eionet priority data flow)

Potential in-situ data providers

WMO Global Atmosphere Watch

Co-operative Programme for Monitoring and Evaluation of the

Long-range Transmission of Air Pollutants in Europe

National authorities in Member states

Dataset/Product name

Data from WMO GAW

EMEP - SO₂

National data

In-situ data requirement:***Total column gases - active halogen species - global coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

not specified

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of greenhouse gases and fluxes	Calibration and validation	Desirable
Monitoring of greenhouse gases and fluxes	Calibration and validation	Desirable
Monitoring of global aerosols	Calibration and validation	Desirable
Support for scientific observational campaigns	Calibration and validation	Desirable
Reanalysis of global atmospheric composition	Calibration and validation	Desirable
Near-real-time ozone monitoring	Calibration and validation	Desirable
Near-real-time ozone forecasts	Calibration and validation	Desirable
Monitoring and forecasting of total ozone	Calibration and validation	Desirable
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states	National data
The international Network for the Detection of Atmospheric Composition Change	NDACC - active halogen species

In-situ data requirement:***Total column gases - halogen reservoir species - global coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

not specified

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Support for scientific observational campaigns	Calibration and validation	Desirable
Reanalysis of global atmospheric composition	Calibration and validation	Desirable
Near-real-time ozone monitoring	Calibration and validation	Desirable
Near-real-time ozone forecasts	Calibration and validation	Desirable
Monitoring and forecasting of total ozone	Calibration and validation	Desirable
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Desirable
Reanalysis of greenhouse gases and fluxes	Calibration and validation	Desirable
Monitoring of greenhouse gases and fluxes	Calibration and validation	Desirable
Monitoring of global aerosols	Calibration and validation	Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states	National data
The international Network for the Detection of Atmospheric Composition Change	NDACC - halogen reservoir species

In-situ data requirement:***Total column gases - NO₂ - global coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

not specified

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring and forecasting of total ozone	Product generation	Desirable
Monitoring of global aerosols	Product generation	Desirable
Monitoring of greenhouse gases and fluxes	Calibration and validation	Essential
Monitoring of greenhouse gases and fluxes	Product generation	Desirable
Reanalysis of greenhouse gases and fluxes	Calibration and validation	Essential
Reanalysis of greenhouse gases and fluxes	Product generation	Desirable
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Essential
Monitoring of global aerosols	Calibration and validation	Essential
Monitoring and forecasting of total ozone	Calibration and validation	Essential
Near-real-time ozone monitoring	Calibration and validation	Essential
Near-real-time ozone forecasts	Calibration and validation	Essential
Near-real-time ozone monitoring	Product generation	Desirable
Reanalysis of global atmospheric composition	Calibration and validation	Essential
Reanalysis of global atmospheric composition	Product generation	Desirable
Support for scientific observational campaigns	Calibration and validation	Essential
Support for scientific observational campaigns	Product generation	Desirable
Near-real-time ozone forecasts	Product generation	Desirable
Monitoring and forecasting of global atmospheric composition	Product generation	Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states

National data

The international Network for the Detection of Atmospheric column

NDACC - NO₂ - profile and total

Composition Change

In-situ data requirement:***UV index - timeliness 24 hrs, accuracy 5-10%, global coverage*****Characteristics:**

not specified

Target accuracy:

5-10%

Threshold accuracy:

5-10%

Dissemination:

View and Download

Coverage:

Global

Timeliness:

1 day

Frequency:

Hourly

Note:

Target timeliness requirement is 3 h.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring of surface solar irradiance	Product generation	Essential
Support for scientific observational campaigns	Product generation	Essential
Reanalysis of global atmospheric composition	Product generation	Essential
Near-real-time ozone monitoring	Product generation	Essential
Near-real-time ozone forecasts	Product generation	Essential
Monitoring and forecasting of total ozone	Product generation	Essential
Monitoring and forecasting of global atmospheric composition	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

European Database for UV Climatology and Evaluation
National authorities in Member states
World Ozone and Ultraviolet Radiation Data Centre

Data from EUVDB
National data
WOUDC - UV index

In-situ data requirement:***UV index - timeliness 6 months, accuracy 5-10%, global coverage*****Characteristics:**

not specified

Target accuracy:

5-10%

Threshold accuracy:

5-10%

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

Hourly

Note:

Target timeliness requirement is 1 month.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring of surface solar irradiance	Calibration and validation	Useful
Support for scientific observational campaigns	Calibration and validation	Useful
Reanalysis of global atmospheric composition	Calibration and validation	Useful
Near-real-time ozone monitoring	Calibration and validation	Useful
Near-real-time ozone forecasts	Calibration and validation	Useful
Monitoring and forecasting of total ozone	Calibration and validation	Useful
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Useful

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

European Database for UV Climatology and Evaluation	Data from EUVDB
National authorities in Member states	National data
World Ozone and Ultraviolet Radiation Data Centre	WOUDC - UV index

In-situ data requirement:

Vertical atmosphere profiles - aircrafts - CH4 - timeliness 24 hrs, accuracy 0.5 ppb, global coverage

Characteristics:

not specified

Target accuracy:

0.5 ppb

Threshold accuracy:

2-4 ppb

Dissemination:

View and Download

Coverage:

Global

Timeliness:

1 day

Frequency:

<5 min

Note:

Vertical profiles are primarily used for validation and for R&D purposes including model and product development.

Currently lack of near-real-time measurements hinders the use of aircraft profile data for assimilation but initiatives are underway to make (IAGOS) profile data available via GTS.

TBC: for 'frequency' it is assumed that a given profile is needed on a daily basis but the parameter is measured every e.g. 1 min.

Target timeliness requirement is 3 hrs.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Near-real-time ozone monitoring	Product generation	Desirable
Support for scientific observational campaigns	Product generation	Desirable
Reanalysis of global atmospheric composition	Product generation	Desirable
Near-real-time ozone forecasts	Product generation	Desirable
Monitoring and forecasting of total ozone	Product generation	Desirable
Monitoring and forecasting of global atmospheric composition	Product generation	Desirable
Reanalysis of European air quality	Product generation	Desirable
European air quality monitoring and forecasting	Product generation	Desirable
Reanalysis of greenhouse gases and fluxes	Product generation	Desirable
Monitoring of greenhouse gases and fluxes	Product generation	Desirable
Monitoring of global aerosols	Product generation	Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

Earth System Research Laboratory
In-Service Aircraft for a Global Observing System
In-Service Aircraft for a Global Observing System profiles
National authorities in Member states

ESRL - CH4
IAGOS - CH4 - aircraft UTLS
IAGOS - CH4 - aircraft vertical

National data

In-situ data requirement:

Vertical atmosphere profiles - aircrafts - CH4 - timeliness 6 months, accuracy 0.5 ppb, global coverage

Characteristics:

not specified

Target accuracy:

0.5 ppb

Threshold accuracy:

2-4 ppb

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

<5 min

Note:

Vertical profiles are primarily used for validation and for R&D purposes including model and product development.

Currently lack of near-real-time measurements hinders the use of aircraft profile data for assimilation but initiatives are underway to make (IAGOS) profile data available via GTS.

TBC: for 'frequency' it is assumed that a given profile is needed on a daily basis but the parameter is measured every e.g. 1 min.

Target timeliness requirement is 1 month.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality	Calibration and validation	Desirable
European air quality monitoring and forecasting	Calibration and validation	Desirable
Reanalysis of greenhouse gases and fluxes	Calibration and validation	Desirable
Monitoring of greenhouse gases and fluxes	Calibration and validation	Desirable
Monitoring of global aerosols	Calibration and validation	Desirable
Support for scientific observational campaigns	Calibration and validation	Desirable
Reanalysis of global atmospheric composition	Calibration and validation	Desirable
Near-real-time ozone monitoring	Calibration and validation	Desirable
Near-real-time ozone forecasts	Calibration and validation	Desirable
Monitoring and forecasting of total ozone	Calibration and validation	Desirable
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

Earth System Research Laboratory
In-Service Aircraft for a Global Observing System
In-Service Aircraft for a Global Observing System profiles
National authorities in Member states

ESRL - CH4
IAGOS - CH4 - aircraft UTLS
IAGOS - CH4 - aircraft vertical

National data

In-situ data requirement:

Vertical atmosphere profiles - aircrafts - CO₂ - timeliness 24 hrs, accuracy 0.1 ppm, global coverage

Characteristics:

not specified

Target accuracy:

0.1 ppm

Threshold accuracy:

0.5 ppm

Dissemination:

View and Download

Coverage:

Global

Timeliness:

1 day

Frequency:

<5 min

Note:

Vertical profiles are primarily used for validation and for R&D purposes including model and product development.

Currently lack of near-real-time measurements hinders the use of aircraft profile data for assimilation but initiatives are underway to make (IAGOS) profile data available via GTS.

TBC: for 'frequency' it is assumed that a given profile is needed on a daily basis but the parameter is measured every e.g. 1 min.

Target timeliness requirement is 3 hrs.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Support for scientific observational campaigns	Product generation	Desirable
Reanalysis of global atmospheric composition	Product generation	Desirable
Near-real-time ozone monitoring	Product generation	Desirable
Near-real-time ozone forecasts	Product generation	Desirable
Monitoring and forecasting of total ozone	Product generation	Desirable
Monitoring and forecasting of global atmospheric composition	Product generation	Desirable
Reanalysis of European air quality	Product generation	Desirable
European air quality monitoring and forecasting	Product generation	Desirable
Reanalysis of greenhouse gases and fluxes	Product generation	Desirable
Monitoring of greenhouse gases and fluxes	Product generation	Desirable
Monitoring of global aerosols	Product generation	Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

Earth System Research Laboratory
In-Service Aircraft for a Global Observing System
In-Service Aircraft for a Global Observing System profiles
National authorities in Member states

ESRL - CO₂
IAGOS - CO₂ - aircraft UTLS
IAGOS - CO₂ - aircraft vertical

National data

In-situ data requirement:

Vertical atmosphere profiles - aircrafts - CO₂ - timeliness 6 months, accuracy 0.1 ppm, global coverage

Characteristics:

not specified

Target accuracy:

0.1 ppm

Threshold accuracy:

0.5 ppm

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

<5 min

Note:

Vertical profiles are primarily used for validation and for R&D purposes including model and product development.

Currently lack of near-real-time measurements hinders the use of aircraft profile data for assimilation but initiatives are underway to make (IAGOS) profile data available via GTS.

TBC: for 'frequency' it is assumed that a given profile is needed on a daily basis but the parameter is measured every e.g. 1 min.

Target timeliness requirement is 1 month.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality	Calibration and validation	Desirable
European air quality monitoring and forecasting	Calibration and validation	Desirable
Reanalysis of greenhouse gases and fluxes	Calibration and validation	Desirable
Monitoring of greenhouse gases and fluxes	Calibration and validation	Desirable
Monitoring of global aerosols	Calibration and validation	Desirable
Support for scientific observational campaigns	Calibration and validation	Desirable
Reanalysis of global atmospheric composition	Calibration and validation	Desirable
Near-real-time ozone monitoring	Calibration and validation	Desirable
Near-real-time ozone forecasts	Calibration and validation	Desirable
Monitoring and forecasting of total ozone	Calibration and validation	Desirable
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

Earth System Research Laboratory
In-Service Aircraft for a Global Observing System
In-Service Aircraft for a Global Observing System profiles
National authorities in Member states

ESRL - CO₂
IAGOS - CO₂ - aircraft UTLS
IAGOS - CO₂ - aircraft vertical

National data

In-situ data requirement:

Vertical atmosphere profiles - aircrafts - Nox - timeliness 24 hrs, accuracy 50 ppt, global coverage

Characteristics:

not specified

Target accuracy:

50 ppt

Threshold accuracy:

50 ppt

Dissemination:

View and Download

Coverage:

Global

Timeliness:

1 day

Frequency:

5 min

Note:

Vertical profiles are primarily used for validation and for R&D purposes including model and product development.

Currently lack of near-real-time measurements hinders the use of aircraft profile data for assimilation but initiatives are underway to make (IAGOS) profile data available via GTS.

TBC: for 'frequency' it is assumed that a given profile is needed on a daily basis but the parameter is measured every e.g. 1 min.

Target timeliness requirement is 3 hrs.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of global atmospheric composition	Product generation	Desirable
Near-real-time ozone monitoring	Product generation	Desirable
Support for scientific observational campaigns	Product generation	Desirable
Near-real-time ozone forecasts	Product generation	Desirable
Monitoring and forecasting of total ozone	Product generation	Desirable
Monitoring and forecasting of global atmospheric composition	Product generation	Desirable
Reanalysis of European air quality	Product generation	Desirable
European air quality monitoring and forecasting	Product generation	Desirable
Reanalysis of greenhouse gases and fluxes	Product generation	Desirable
Monitoring of greenhouse gases and fluxes	Product generation	Desirable
Monitoring of global aerosols	Product generation	Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

In-Service Aircraft for a Global Observing System
In-Service Aircraft for a Global Observing System profiles
National authorities in Member states

IAGOS - Nox - aircraft UTLS
IAGOS - Nox - aircraft vertical

National data

In-situ data requirement:

Vertical atmosphere profiles - aircrafts - Nox - timeliness 6 months, accuracy 50 ppt, global coverage

Characteristics:

not specified

Target accuracy:

50 ppt

Threshold accuracy:

50 ppt

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

5 min

Note:

Vertical profiles are primarily used for validation and for R&D purposes including model and product development.

Currently lack of near-real-time measurements hinders the use of aircraft profile data for assimilation but initiatives are underway to make (IAGOS) profile data available via GTS.

TBC: for 'frequency' it is assumed that a given profile is needed on a daily basis but the parameter is measured every e.g. 1 min.

Target timeliness requirement is 1 month.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality	Calibration and validation	Essential
European air quality monitoring and forecasting	Calibration and validation	Essential
Reanalysis of greenhouse gases and fluxes	Calibration and validation	Essential
Monitoring of greenhouse gases and fluxes	Calibration and validation	Essential
Monitoring of global aerosols	Calibration and validation	Essential
Support for scientific observational campaigns	Calibration and validation	Essential
Reanalysis of global atmospheric composition	Calibration and validation	Essential
Near-real-time ozone monitoring	Calibration and validation	Essential
Near-real-time ozone forecasts	Calibration and validation	Essential
Monitoring and forecasting of total ozone	Calibration and validation	Essential
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

In-Service Aircraft for a Global Observing System
In-Service Aircraft for a Global Observing System profiles
National authorities in Member states

IAGOS - Nox - aircraft UTLS
IAGOS - Nox - aircraft vertical

National data

In-situ data requirement:

Vertical atmosphere profiles - aircrafts - 03 - timeliness 24 hrs, accuracy 5 ppb, global coverage

Characteristics:

not specified

Target accuracy:

5 ppb

Threshold accuracy:

5 ppb

Dissemination:

View and Download

Coverage:

Global

Timeliness:

1 day

Frequency:

<5 min

Note:

Vertical profiles are primarily used for validation and for R&D purposes including model and product development.

Currently lack of near-real-time measurements hinders the use of aircraft profile data for assimilation but initiatives are underway to make (IAGOS) profile data available via GTS.

TBC: for 'frequency' it is assumed that a given profile is needed on a daily basis but the parameter is measured every e.g. 1 min.

Target timeliness requirement is 3 hrs.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality	Product generation	Essential
European air quality monitoring and forecasting	Product generation	Essential
Reanalysis of greenhouse gases and fluxes	Product generation	Essential
Monitoring of greenhouse gases and fluxes	Product generation	Essential
Monitoring of global aerosols	Product generation	Essential
Support for scientific observational campaigns	Product generation	Essential
Reanalysis of global atmospheric composition	Product generation	Essential
Near-real-time ozone monitoring	Product generation	Essential
Near-real-time ozone forecasts	Product generation	Essential
Monitoring and forecasting of total ozone	Product generation	Essential
Monitoring and forecasting of global atmospheric composition	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

Measurements of OZone, water vapour, carbon monoxide and nitrogen oxides by in-service Airbus airCRAFT	Data from MOZAIC
Earth System Research Laboratory	ESRL - ozone
In-Service Aircraft for a Global Observing System	IAGOS - ozone - aircraft UTLS
In-Service Aircraft for a Global Observing System profiles	IAGOS - ozone - aircraft vertical
National authorities in Member states	National data

In-situ data requirement:

Vertical atmosphere profiles - aircrafts - 03 - timeliness 3 days, accuracy 5 ppb, global coverage

Characteristics:

not specified

Target accuracy:

5 ppb

Threshold accuracy:

5 ppb

Dissemination:

View and Download

Coverage:

Global

Timeliness:

3 days

Frequency:

<5 min

Note:

Vertical profiles are primarily used for validation and for R&D purposes including model and product development.

Currently lack of near-real-time measurements hinders the use of aircraft profile data for assimilation but initiatives are underway to make (IAGOS) profile data available via GTS.

TBC: for 'frequency' it is assumed that a given profile is needed on a daily basis but the parameter is measured every e.g. 1 min.

Target timeliness requirement is 1 day.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Support for scientific observational campaigns	Calibration and validation	Essential
Reanalysis of global atmospheric composition	Calibration and validation	Essential
Near-real-time ozone monitoring	Calibration and validation	Essential
Near-real-time ozone forecasts	Calibration and validation	Essential
Monitoring and forecasting of total ozone	Calibration and validation	Essential
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Essential
Reanalysis of European air quality	Calibration and validation	Essential
European air quality monitoring and forecasting	Calibration and validation	Essential
Reanalysis of greenhouse gases and fluxes	Calibration and validation	Essential
Monitoring of greenhouse gases and fluxes	Calibration and validation	Essential
Monitoring of global aerosols	Calibration and validation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

Norwegian Institute for Air Research
National authorities in Member states

EBAS database
National data

In-situ data requirement:***Vertical atmosphere profiles - ground based remote sensing - aerosol properties, global coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

In order to get a full coverage of troposphere, stratosphere and mesosphere and with good temporal coverage and resolution, one would need Lidar and Microwave in addition to the ozone sondes. FTIR is also possible, though with poorer vertical resolution

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring and forecasting of total ozone	Calibration and validation	Essential
Monitoring of global aerosols	Product generation	Desirable
Monitoring of greenhouse gases and fluxes	Product generation	Desirable
Monitoring of greenhouse gases and fluxes	Calibration and validation	Essential
Reanalysis of greenhouse gases and fluxes	Product generation	Desirable
Reanalysis of greenhouse gases and fluxes	Calibration and validation	Essential
Monitoring and forecasting of global atmospheric composition	Product generation	Desirable
Monitoring of global aerosols	Calibration and validation	Essential
Monitoring and forecasting of total ozone	Product generation	Desirable
Support for scientific observational campaigns	Calibration and validation	Essential
Near-real-time ozone forecasts	Product generation	Desirable
Near-real-time ozone forecasts	Calibration and validation	Essential
Near-real-time ozone monitoring	Product generation	Desirable
Near-real-time ozone monitoring	Calibration and validation	Essential
Reanalysis of global atmospheric composition	Product generation	Desirable
Reanalysis of global atmospheric composition	Calibration and validation	Essential
Support for scientific observational campaigns	Product generation	Desirable
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states

National data

The international Network for the Detection of Atmospheric Composition Change

NDACC - aerosol extinction - profile

In-situ data requirement:***Vertical atmosphere profiles - ground based remote sensing - NO2 - global coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

Vertical profiles are primarily used for validation and for R&D purposes including model and product development.

Currently lack of near-real-time measurements hinders the use of aircraft profile data for assimilation but initiatives are underway to make (IAGOS) profile data available via GTS.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Monitoring and forecasting of total ozone	Calibration and validation	Essential
Monitoring of global aerosols	Calibration and validation	Essential
Monitoring of greenhouse gases and fluxes	Product generation	Desirable
Monitoring of greenhouse gases and fluxes	Calibration and validation	Essential
Reanalysis of greenhouse gases and fluxes	Product generation	Desirable
Reanalysis of greenhouse gases and fluxes	Calibration and validation	Essential
Monitoring and forecasting of global atmospheric composition	Product generation	Desirable
Monitoring of global aerosols	Product generation	Desirable
Monitoring and forecasting of total ozone	Product generation	Desirable
Support for scientific observational campaigns	Calibration and validation	Essential
Near-real-time ozone forecasts	Product generation	Desirable
Near-real-time ozone forecasts	Calibration and validation	Essential
Near-real-time ozone monitoring	Product generation	Desirable
Near-real-time ozone monitoring	Calibration and validation	Essential
Reanalysis of global atmospheric composition	Product generation	Desirable
Reanalysis of global atmospheric composition	Calibration and validation	Essential
Support for scientific observational campaigns	Product generation	Desirable
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states

National data

The international Network for the Detection of Atmospheric column

NDACC - NO2 - profile and total

Composition Change

In-situ data requirement:***Vertical atmosphere profiles - ground based remote sensing - O3 (lidar), global coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

Vertical profiles are primarily used for validation and for R&D purposes including model and product development.

Currently lack of near-real-time measurements hinders the use of aircraft profile data for assimilation but initiatives are underway to make (IAGOS) profile data available via GTS.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of greenhouse gases and fluxes	Calibration and validation	Desirable
Monitoring of greenhouse gases and fluxes	Calibration and validation	Desirable
Monitoring of global aerosols	Calibration and validation	Desirable
Support for scientific observational campaigns	Calibration and validation	Desirable
Reanalysis of global atmospheric composition	Calibration and validation	Desirable
Near-real-time ozone monitoring	Calibration and validation	Desirable
Near-real-time ozone forecasts	Calibration and validation	Desirable
Monitoring and forecasting of total ozone	Calibration and validation	Desirable
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states

National data

The international Network for the Detection of Atmospheric column

NDACC - O3 - profile and total

Composition Change

In-situ data requirement:

Vertical atmosphere profiles - ground based remote sensing - PM2.5 (mass) - timeliness 24 hrs, global coverage

Characteristics:

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

1 day

Frequency:

<5 min

Note:

Vertical profiles are primarily used for validation and for R&D purposes including model and product development.

TBC: for 'frequency' it is assumed that a given profile is needed on a daily basis but the parameter is measured every e.g. 1 min.

Target timeliness requirement is 3 hrs.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Support for scientific observational campaigns	Product generation	Desirable
Reanalysis of global atmospheric composition	Product generation	Desirable
Near-real-time ozone monitoring	Product generation	Desirable
Near-real-time ozone forecasts	Product generation	Desirable
Monitoring and forecasting of total ozone	Product generation	Desirable
Monitoring and forecasting of global atmospheric composition	Product generation	Desirable
Reanalysis of greenhouse gases and fluxes	Product generation	Desirable
Monitoring of greenhouse gases and fluxes	Product generation	Desirable
Monitoring of global aerosols	Product generation	Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

European Aerosol Research Lidar Network
National authorities in Member states

EARLINET - aerosol optical profile
National data

In-situ data requirement:

Vertical atmosphere profiles - ground based remote sensing - PM2.5 (mass) - timeliness 6 months, global coverage

Characteristics:

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

6 months

Frequency:

<5 min

Note:

Vertical profiles are primarily used for validation and for R&D purposes including model and product development.

TBC: for 'frequency' it is assumed that a given profile is needed on a daily basis but the parameter is measured every e.g. 1 min.

Target timeliness requirement is 1 month.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Support for scientific observational campaigns	Calibration and validation	Essential
Reanalysis of global atmospheric composition	Calibration and validation	Essential
Near-real-time ozone forecasts	Calibration and validation	Essential
Near-real-time ozone monitoring	Calibration and validation	Essential
Monitoring and forecasting of total ozone	Calibration and validation	Essential
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Essential
Reanalysis of greenhouse gases and fluxes	Calibration and validation	Essential
Monitoring of greenhouse gases and fluxes	Calibration and validation	Essential
Monitoring of global aerosols	Calibration and validation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

European Aerosol Research Lidar Network
National authorities in Member states

EARLINET - aerosol optical profile
National data

In-situ data requirement:

Vertical atmosphere profiles - sondes - 03 - timeliness 24 hrs, accuracy 5 ppb, global coverage

Characteristics:

not specified

Target accuracy:

5 ppb

Threshold accuracy:

5 ppb

Dissemination:

View and Download

Coverage:

Global

Timeliness:

1 day

Frequency:

<5 min

Note:

TBC: for 'frequency' it is assumed that a given profile is needed on a daily basis but the parameter is measured every e.g. 1 min.

Target timeliness requirement is 3 hrs.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reanalysis of European air quality	Product generation	Essential
European air quality monitoring and forecasting	Product generation	Essential
Reanalysis of greenhouse gases and fluxes	Product generation	Essential
Monitoring of greenhouse gases and fluxes	Product generation	Essential
Monitoring of global aerosols	Product generation	Essential
Support for scientific observational campaigns	Product generation	Essential
Reanalysis of global atmospheric composition	Product generation	Essential
Near-real-time ozone monitoring	Product generation	Essential
Near-real-time ozone forecasts	Product generation	Essential
Monitoring and forecasting of total ozone	Product generation	Essential
Monitoring and forecasting of global atmospheric composition	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

Norwegian Institute for Air Research
National authorities in Member states

EBAS database
National data

In-situ data requirement:

Vertical atmosphere profiles - sondes - 03 - timeliness 3 days, accuracy 5 ppb, global coverage

Characteristics:

not specified

Target accuracy:

5 ppb

Threshold accuracy:

5 ppb

Dissemination:

View and Download

Coverage:

Global

Timeliness:

3 days

Frequency:

<5 min

Note:

TBC: for 'frequency' it is assumed that a given profile is needed on a daily basis but the parameter is measured every e.g. 1 min.

Target timeliness requirement is 1 day.

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Support for scientific observational campaigns	Calibration and validation	Essential
Reanalysis of global atmospheric composition	Calibration and validation	Essential
Near-real-time ozone monitoring	Calibration and validation	Essential
Near-real-time ozone forecasts	Calibration and validation	Essential
Monitoring and forecasting of total ozone	Calibration and validation	Essential
Monitoring and forecasting of global atmospheric composition	Calibration and validation	Essential
Reanalysis of European air quality	Calibration and validation	Essential
European air quality monitoring and forecasting	Calibration and validation	Essential
Reanalysis of greenhouse gases and fluxes	Calibration and validation	Essential
Monitoring of greenhouse gases and fluxes	Calibration and validation	Essential
Monitoring of global aerosols	Calibration and validation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring facilities

Potential in-situ data providers**Dataset/Product name**

Norwegian Institute for Air Research
National authorities in Member states

EBAS database
National data

3 Emergency Management Service

The Copernicus Emergency Management Service (EMS) addresses, with a worldwide coverage, a wide range of emergency situations resulting from natural or man-made disasters like floods, earthquakes, humanitarian crises etc.

Through mapping all actors involved in the management of natural disasters, man-made emergency situations and humanitarian crises are provided with timely and accurate geospatial information derived from satellite remote sensing and completed by available in situ or open data sources. The information generated by the service can be used as supplied (e.g. as digital or printed map outputs). It may be further combined with other data sources (e.g. as digital feature sets in a geographic information system). In both cases it may support geospatial analysis and decision making processes of emergency managers. The Copernicus EMS is provided during all phases of the emergency management cycle, in either rush or non-rush mode and is free of charge for the users. It can be activated only by authorised users.

The rush mode consists of the on-demand and fast provision (within hours or days) of geospatial information in support of emergency management activities immediately following an emergency event. There are three categories of products offered: reference maps, delineation maps (providing an assessment of the event extent) and grading maps (providing an assessment of the damage grade and its spatial distribution). The non-rush mode consists of the on-demand provision of geospatial information in support of emergency management activities not related to immediate response. This applies in particular to activities dealing with prevention, preparedness, disaster risk reduction and recovery phases. There are three broad product categories: reference maps, pre-disaster situation maps and post-disaster situation maps.⁴

⁴ Taken from the service website: <http://emergency.copernicus.eu/mapping/>

In-situ data requirement:***Administrative boundaries - scale better than 1: 50 000, global coverage*****Characteristics:**

Official administrative names, local names, population

Target accuracy:

>1: 50 000

Threshold accuracy:

1: 50 000

Dissemination:

View and Download

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

Note:

At the lowest administrative level as possible

Latest version, preferably not older than 3 years

OGC vector format

National and/or UTM projections

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Post-disaster situation maps - overview	Product generation	Essential
Post-disaster situation maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Pre-disaster situation maps - overview	Product generation	Essential
Pre-disaster situation maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Grading maps - overview	Product generation	Essential
Grading maps - detail	Product generation	Essential
Delineation maps - overview	Product generation	Essential
Delineation maps - detail	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex I: Administrative units

Potential in-situ data providers**Dataset/Product name**

Eurogeographics	EuroBoundaryMap
GADM database of Global Administrative Areas	Global administrative areas - GADM
Food and Agriculture Organization of the United Nations	Global Administrative Unit Layer -
GAUL	
National authorities in Member states	National data
UN Geographic Information Working Group	Second Administrative Level
Boundaries -	SALB

In-situ data requirement:***Aerial photography - accuracy 0.2 m, for disaster affected areas*****Characteristics:**

Coverage
 Timestamp
 Coordinate reference system
 Spectral characteristics
 Spatial characteristics

Target accuracy:

0.2 m

Threshold accuracy:

1 m

Dissemination:

TBD

Coverage:

Disaster affected areas

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Preferably homogeneous quality for large extent (e.g. color-balanced, feathered image mosaics).

Including infrared channel, if available

GeoTIFF (colour- 24 bits)

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reference maps - overview	Product generation	Desirable
Reference maps - detail	Product generation	Desirable
Grading maps - overview	Product generation	Desirable
Grading maps - detail	Product generation	Desirable
Delineation maps - overview	Product generation	Desirable
Delineation maps - detail	Product generation	Desirable
Reference maps - overview	Product generation	Desirable
Reference maps - detail	Product generation	Desirable
Pre-disaster situation maps - overview	Product generation	Desirable
Pre-disaster situation maps - detail	Product generation	Desirable
Post-disaster situation maps - overview	Product generation	Desirable
Post-disaster situation maps - detail	Product generation	Desirable

Links to Inspire annex(s) and theme(s):

N/A

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states

National data

In-situ data requirement:***Air pressure - daily measurements, EU27 coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

EU27

Timeliness:

N/A

Frequency:

Daily

Note:

not specified

Relevant Copernicus product data:

European Flood Awareness System

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Built-up areas/settlements - scale better than 1: 10 000, global coverage*****Characteristics:**

Type (communication, energy, environmental barriers, transport), Usage (religious building, silo, stadium, storage tank, tower, windmill)

Condition (demolished, functional, projected, ruin, under construction)

Number of floor;

Height of building

Building material

Target accuracy:

>1: 10 000

Threshold accuracy:

1: 50 000

Dissemination:

View and Download

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

To be available as point locations and areas

Latest version available, preferably not older than 3 years

National and/or UTM projections

OGC vector format

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Pre-disaster situation maps - overview	Product generation	Essential
Pre-disaster situation maps - detail	Product generation	Essential
Post-disaster situation maps - overview	Product generation	Essential
Post-disaster situation maps - detail	Product generation	Essential
Delineation maps - overview	Product generation	Essential
Delineation maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Grading maps - overview	Product generation	Essential
Grading maps - detail	Product generation	Essential
Reference maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex I: Geographical names

Annex III: Buildings

Potential in-situ data providers**Dataset/Product name**

Center for Sustainability and the Global Environment
Extent

MODIS 500-m Map of Global Urban

National authorities in Member states

National data

National Geospatial-Intelligence Agency

NGA GEOnet Names Server

In-situ data requirement:

Critical infrastructures - public services - scale better than 1: 10 000, global coverage

Characteristics:

Hospitals, schools, fire brigade stations, bridges, tunnels, train stations
Usage e.g. education, religious, industrial, military, health

Target accuracy:

>1: 10 000

Threshold accuracy:

1: 50 000

Dissemination:

View and Download

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Latest version available, preferably not older than 3 years
OGC vector format
National and/or UTM projections

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Delineation maps - overview	Product generation	Essential
Delineation maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Grading maps - overview	Product generation	Essential
Grading maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Pre-disaster situation maps - overview	Product generation	Essential
Pre-disaster situation maps - detail	Product generation	Essential
Post-disaster situation maps - overview	Product generation	Essential
Post-disaster situation maps - detail	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Utility and governmental services

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states

National data

In-situ data requirement:***Critical infrastructures - utilities - scale 1: 10 000, global coverage*****Characteristics:**

Power plants, transmission networks, water treatment plants, pipelines, bridges, hazardous installations

Target accuracy:

>1: 10 000

Threshold accuracy:

1: 50 000

Dissemination:

View and Download

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Latest version available, preferably not older than 3 years

OGC vector format

National and/or UTM projections

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Delineation maps - overview	Product generation	Essential
Delineation maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Grading maps - overview	Product generation	Essential
Grading maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Pre-disaster situation maps - overview	Product generation	Essential
Pre-disaster situation maps - detail	Product generation	Essential
Post-disaster situation maps - overview	Product generation	Essential
Post-disaster situation maps - detail	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Utility and governmental services

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states
UN Geographic Information Working Group
Transport -

National data
UN Spatial Data Infrastructure -
V1.2

In-situ data requirement:***DEM high resolution - accuracy 1-10 m, EEA39, global coverage*****Characteristics:**

not specified

Target accuracy:

1-10 m

Threshold accuracy:

25 m

Dissemination:

View and Download

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Format:

- BIL

- ArcInfo (Grid)

- XYZ

- GeoTIFF

For contour levels: OGC vector format

Latest version available, preferably not older than 3 years

National and/or UTM projections

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Delineation maps - overview

Product generation

Desirable

Delineation maps - detail

Product generation

Desirable

Reference maps - overview

Product generation

Desirable

Reference maps - detail

Product generation

Desirable

Grading maps - overview

Product generation

Desirable

Grading maps - detail

Product generation

Desirable

Reference maps - overview

Product generation

Desirable

Reference maps - detail

Product generation

Desirable

Pre-disaster situation maps - overview

Product generation

Desirable

Pre-disaster situation maps - detail

Product generation

Desirable

Post-disaster situation maps - overview

Product generation

Desirable

Post-disaster situation maps - detail

Product generation

Desirable

Links to Inspire annex(s) and theme(s):

Annex II: Elevation

Potential in-situ data providers**Dataset/Product name**

Euromap

Euro-Maps 3D

National authorities in Member states

National data

Intermap Technologies

NextMap

Astrium Geo-information Services

SPOT DEM

In-situ data requirement:***Dew point temperature - hourly measurements, EU27 coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

EU27

Timeliness:

N/A

Frequency:

Hourly

Note:

not specified

Relevant Copernicus product data:

European Flood Awareness System

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Early warning - global coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

< 1 hr

Frequency:

Hourly

Note:

Early warning and alerting systems support the Emergency response service to prepare for and monitor crisis situations (mainly the hazard situation).

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reference maps - overview	Product generation	Desirable
Reference maps - detail	Product generation	Desirable
Pre-disaster situation maps - overview	Product generation	Desirable
Grading maps - overview	Product generation	Essential
Grading maps - detail	Product generation	Essential
Delineation maps - overview	Product generation	Essential
Delineation maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Desirable
Reference maps - detail	Product generation	Desirable
Pre-disaster situation maps - detail	Product generation	Desirable
Post-disaster situation maps - overview	Product generation	Essential
Post-disaster situation maps - detail	Product generation	Essential

Links to Inspire annex(s) and theme(s):

N/A

Potential in-situ data providers**Dataset/Product name**

Joint Research Centre
Coordination

The Global Disaster Alert and
System (GDACS)

In-situ data requirement:***Evaporation - daily measurements, EU27 coverage*****Characteristics:**

not specified

Target accuracy:

Daily average (mm)

Threshold accuracy:

Daily average (mm)

Dissemination:

View and Download

Coverage:

EU27

Timeliness:

N/A

Frequency:

Daily

Note:

Potential bare soil evaporation

Potential open water evaporation

Potential reference evaporation

Relevant Copernicus product data:

European Flood Awareness System

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:

Field photographs - population statistics, relief actors and deployment activities - accuracy 10-20 m, for disaster affected areas

Characteristics:

GPS coordinates (photos)

Target accuracy:

10-20 m

Threshold accuracy:

not specified

Dissemination:

N/A

Coverage:

Disaster affected areas

Timeliness:

Latest version available

Frequency:

Irregular

Note:

not specified

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Grading maps - overview	Product generation	Essential
Grading maps - detail	Product generation	Essential
Delineation maps - overview	Product generation	Essential
Delineation maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Desirable
Pre-disaster situation maps - overview	Product generation	Desirable
Pre-disaster situation maps - detail	Product generation	Desirable
Post-disaster situation maps - overview	Product generation	Desirable
Post-disaster situation maps - detail	Product generation	Desirable

Links to Inspire annex(s) and theme(s):

N/A

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states

National data

In-situ data requirement:***Forestry maps - scale 1:50 000, European coverage*****Characteristics:**

Forest type

Target accuracy:

1:50 000

Threshold accuracy:

1:100 000

Dissemination:

N/A

Coverage:

European

Timeliness:

Latest version available

Frequency:

Irregular

Note:

not specified

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Delineation maps - overview

Product generation

Desirable

Delineation maps - detail

Product generation

Desirable

Reference maps - overview

Product generation

Desirable

Reference maps - detail

Product generation

Desirable

Grading maps - overview

Product generation

Desirable

Grading maps - detail

Product generation

Desirable

Reference maps - overview

Product generation

Desirable

Reference maps - detail

Product generation

Desirable

Pre-disaster situation maps - overview

Product generation

Desirable

Pre-disaster situation maps - detail

Product generation

Desirable

Post-disaster situation maps - overview

Product generation

Desirable

Post-disaster situation maps - detail

Product generation

Desirable

Links to Inspire annex(s) and theme(s):

Annex II: Land cover

Potential in-situ data providers**Dataset/Product name**

European Environment Agency

CORINE Land Cover data

National authorities in Member states

National data

In-situ data requirement:***Geological maps - scale 1:100 000, global coverage*****Characteristics:**

not specified

Target accuracy:

1:100 000

Threshold accuracy:

1:250 000

Dissemination:

View and Download

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

not specified

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reference maps - detail	Product generation	Desirable
Pre-disaster situation maps - overview	Product generation	Desirable
Reference maps - overview	Product generation	Desirable
Reference maps - detail	Product generation	Desirable
Grading maps - overview	Product generation	Desirable
Grading maps - detail	Product generation	Desirable
Delineation maps - overview	Product generation	Desirable
Delineation maps - detail	Product generation	Desirable
Reference maps - overview	Product generation	Desirable
Pre-disaster situation maps - detail	Product generation	Desirable
Post-disaster situation maps - overview	Product generation	Desirable
Post-disaster situation maps - detail	Product generation	Desirable

Links to Inspire annex(s) and theme(s):

Annex II: Geology

Potential in-situ data providers**Dataset/Product name**

EuroGeoSurveys

Geological maps from One-Geology

Europe

National authorities in Member states

National data

In-situ data requirement:

Global population dataset - scale 0.25 km² (500 m x 500 m), global coverage

Characteristics:

Number of people, forecasted population numbers, gender, literacy, resilience level, poverty levels

Target accuracy:

0.25 km² (500 m x 500 m)

Threshold accuracy:

1 km² (1 km x 1 km)

Dissemination:

N/A

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

GIS ready, with reasonable raster size

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Delineation maps - overview	Product generation	Essential
Delineation maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Grading maps - overview	Product generation	Essential
Grading maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Pre-disaster situation maps - overview	Product generation	Essential
Pre-disaster situation maps - detail	Product generation	Essential
Post-disaster situation maps - overview	Product generation	Essential
Post-disaster situation maps - detail	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Population distribution and demography

Potential in-situ data providers**Dataset/Product name**

AfriPop	Data from AfriPop project
Center for International Earth Science Information Network	Gridded Population of the World and GRUMP
Oak Ridge National Laboratory	Landscan

In-situ data requirement:***Humidity - daily measurements, EU27 coverage*****Characteristics:**

not specified

Target accuracy:

Daily average (mm)

Threshold accuracy:

Daily average (mm)

Dissemination:

View and Download

Coverage:

EU27

Timeliness:

N/A

Frequency:

Daily

Note:

not specified

Relevant Copernicus product data:

European Flood Awareness System

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Hydrographical information - water bodies - scale better than 1:50 000, global coverage*****Characteristics:**

Names, types, flow direction

Water networks, rivers, canals, lakes, ponds, streams, reservoirs, watersheds, floodplain limits, dams

Target accuracy:

>1:50 000

Threshold accuracy:

1:50 000

Dissemination:

View and Download

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Latest version available, preferably not older than 3 years

National and/or UTM projections

OGC vector format

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Delineation maps - overview	Product generation	Essential
Delineation maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Grading maps - overview	Product generation	Essential
Grading maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Pre-disaster situation maps - overview	Product generation	Essential
Pre-disaster situation maps - detail	Product generation	Essential
Post-disaster situation maps - overview	Product generation	Essential
Post-disaster situation maps - detail	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex I: Hydrography

Annex III: Natural risk zones

Potential in-situ data providers**Dataset/Product name**

Joint Research Centre
Modelling
European Environment Agency
Network

Catchment Characterisation and
European Catchment and Rivers

Europa Technologies
National authorities in Member states
National Geospatial-Intelligence Agency
National Geospatial-Intelligence Agency

System (ECRINS)
Global Discovery
National data
VMAP0
VMAP1

In-situ data requirement:***Hydrographical information - water levels - for disaster affected areas only*****Characteristics:**

Information about seasonal variations

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

NRT Service

Coverage:

Disaster affected areas

Timeliness:

TBD

Frequency:

TBD

Note:

not specified

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reference maps - overview	Product generation	Desirable
Reference maps - detail	Product generation	Desirable
Grading maps - overview	Product generation	Desirable
Grading maps - detail	Product generation	Desirable
Delineation maps - overview	Product generation	Desirable
Delineation maps - detail	Product generation	Desirable
Reference maps - overview	Product generation	Desirable
Reference maps - detail	Product generation	Desirable
Pre-disaster situation maps - overview	Product generation	Desirable
Pre-disaster situation maps - detail	Product generation	Desirable
Post-disaster situation maps - overview	Product generation	Desirable
Post-disaster situation maps - detail	Product generation	Desirable

Links to Inspire annex(s) and theme(s):

N/A

Potential in-situ data providers**Dataset/Product name**

Global Runoff Data Centre
National authorities in Member states

Global Runoff Database
National data

In-situ data requirement:

Key infrastructure - airports - scale better than 1: 10 000, global coverage

Characteristics:

Airport location, air strips, helicopter landing spots
Status code (e.g. International airport, regional, recreational)

Target accuracy:

>1: 10 000

Threshold accuracy:

1: 50 000

Dissemination:

View and Download

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Latest version available, preferably not older than 3 years
OGC vector format

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Grading maps - detail	Product generation	Essential
Delineation maps - overview	Product generation	Essential
Pre-disaster situation maps - overview	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Grading maps - overview	Product generation	Essential
Delineation maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Pre-disaster situation maps - detail	Product generation	Essential
Post-disaster situation maps - overview	Product generation	Essential
Post-disaster situation maps - detail	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex I: Transport networks

Potential in-situ data providers**Dataset/Product name**

Eurogeographics	EuroBoundaryMap
Europa Technologies	Global Discovery
National authorities in Member states	National data
UN Geographic Information Working Group	UN Spatial Data Infrastructure -
Transport - V1.2	
National Geospatial-Intelligence Agency	VMAP0
National Geospatial-Intelligence Agency	VMAP1

In-situ data requirement:

Key infrastructure - ports - scale better than 1:10 000, global coverage

Characteristics:

Ports, harbours

Target accuracy:

>1:10 000

Threshold accuracy:

1: 50 000

Dissemination:

View and Download

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Latest version available, preferably not older than 3 years

OGC vector format

National and/or UTM projections

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Delineation maps - detail	Product generation	Essential
Delineation maps - overview	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Grading maps - overview	Product generation	Essential
Grading maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Pre-disaster situation maps - overview	Product generation	Essential
Pre-disaster situation maps - detail	Product generation	Essential
Post-disaster situation maps - overview	Product generation	Essential
Post-disaster situation maps - detail	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex I: Transport networks

Potential in-situ data providers**Dataset/Product name**

Eurogeographics	EuroBoundaryMap
Europa Technologies	Global Discovery
National authorities in Member states	National data
UN Geographic Information Working Group	UN Spatial Data Infrastructure -
Transport -	V1.2
National Geospatial-Intelligence Agency	VMAP0
National Geospatial-Intelligence Agency	VMAP1

In-situ data requirement:

Land cover information - scale better than 1: 50 000, global coverage

Characteristics:

Land cover classes: e.g. Artificial surfaces; Agricultural areas; Forests; (semi-)natural areas; Wetlands; Water bodies, Landforms; Semi-natural and natural vegetation patterns; Rock and bare soil; Snow & ice, etc.

Target accuracy:

>1:50 000

Threshold accuracy:

1: 50 000

Dissemination:

View and Download

Coverage:

Global

Timeliness:

Latest version available

Frequency:

TBD

Note:

Latest version available, preferably not older than 3 years

OGC vector format

National and/or UTM projections

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Delineation maps - overview	Product generation	Essential
Grading maps - overview	Product generation	Essential
Grading maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Post-disaster situation maps - detail	Product generation	Essential
Post-disaster situation maps - overview	Product generation	Essential
Pre-disaster situation maps - detail	Product generation	Essential
Pre-disaster situation maps - overview	Product generation	Essential
Delineation maps - detail	Product generation	Essential
Reference maps - detail	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex II: Land cover

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states

National data

In-situ data requirement:***Landuse information - scale 1: 50 000, global coverage*****Characteristics:**

Land use classes: e.g. forest, residential, commercial, industrial, shrub land, agriculture, etc.

Target accuracy:

>1: 50 000

Threshold accuracy:

1: 50 000

Dissemination:

View and Download

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Latest version available, preferably not older than 3 years

OGC compliant formats

National and/or UTM projections

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Delineation maps - overview	Product generation	Desirable
Delineation maps - detail	Product generation	Desirable
Reference maps - overview	Product generation	Desirable
Reference maps - detail	Product generation	Desirable
Grading maps - overview	Product generation	Desirable
Grading maps - detail	Product generation	Desirable
Reference maps - overview	Product generation	Desirable
Reference maps - detail	Product generation	Desirable
Pre-disaster situation maps - overview	Product generation	Desirable
Pre-disaster situation maps - detail	Product generation	Desirable
Post-disaster situation maps - overview	Product generation	Desirable
Post-disaster situation maps - detail	Product generation	Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Land use

Eionet data flow(s):

CORINE Land cover 2006 reporting

Potential in-situ data providers

European Environment Agency
European Space Agency
National authorities in Member states

Dataset/Product name

CORINE Land Cover data
Globcover project data
National data

In-situ data requirement:

Large scale population information - accuracy 0,01 km2 (100 m x 100 m), for disaster affected areas only

Characteristics:

Number of people, forecasted population numbers, gender, literacy, resilience level, poverty levels

Target accuracy:

0,01 km2 (100 m x 100 m)

Threshold accuracy:

0,0625 km2 (250 m x 250 m)

Dissemination:

N/A

Coverage:

Disaster affected areas

Timeliness:

Latest version available

Frequency:

Irregular

Note:

At admin level 3 or higher/urban level, based on administrative units, statistics and/or maps

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Delineation maps - detail	Product generation	Essential
Delineation maps - overview	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Grading maps - overview	Product generation	Essential
Grading maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Pre-disaster situation maps - overview	Product generation	Essential
Pre-disaster situation maps - detail	Product generation	Essential
Post-disaster situation maps - overview	Product generation	Essential
Post-disaster situation maps - detail	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Population distribution and demography

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states

National data

In-situ data requirement:

Precipitation - measurements every 15 min.to daily measurements, EU27 coverage

Characteristics:

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

EU27

Timeliness:

N/A

Frequency:

15 min

Note:

Frequency:

15 minutes

30 minutes

hourly

6 hourly

12 hourly

daily

Relevant Copernicus product data:

European Flood Awareness System

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Precipitation information - global coverage*****Characteristics:**

mm/day

Target accuracy:

Past rainfall: river catchments or better scale; forecast: catchments or better: different locations (preferred along the rivers)

Threshold accuracy:

not specified

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

1 day

Frequency:

Daily

Note:

Real time rainfall location and intensity could also be useful for flooding work

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reference maps - overview	Product generation	Desirable
Reference maps - detail	Product generation	Desirable
Pre-disaster situation maps - overview	Product generation	Essential
Pre-disaster situation maps - detail	Product generation	Essential
Post-disaster situation maps - overview	Product generation	Desirable
Post-disaster situation maps - detail	Product generation	Desirable
Reference maps - overview	Product generation	Desirable
Reference maps - detail	Product generation	Desirable
Grading maps - overview	Product generation	Desirable
Grading maps - detail	Product generation	Desirable
Delineation maps - overview	Product generation	Desirable
Delineation maps - detail	Product generation	Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers**Dataset/Product name**

European Centre for Medium-Range Weather Forecasts
National authorities in Member states

ECMWF Met Forecast Data
National data

In-situ data requirement:***Protected areas - accuracy 1:50 000, global coverage*****Characteristics:**

not specified

Target accuracy:

1:50 000 (or better)

Threshold accuracy:

1:100 000

Dissemination:

N/A

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Association with National, European or international protected areas classifications

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Delineation maps - overview	Product generation	Useful
Delineation maps - detail	Product generation	Useful
Pre-disaster situation maps - detail	Product generation	Useful
Reference maps - overview	Product generation	Useful
Reference maps - detail	Product generation	Useful
Grading maps - overview	Product generation	Useful
Grading maps - detail	Product generation	Useful
Reference maps - overview	Product generation	Useful
Pre-disaster situation maps - overview	Product generation	Useful
Reference maps - detail	Product generation	Useful
Post-disaster situation maps - overview	Product generation	Useful
Post-disaster situation maps - detail	Product generation	Useful

Links to Inspire annex(s) and theme(s):

Annex I: Protected sites

Eionet data flow(s):

CDDA-1: Designated areas (Eionet priority data flow)

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states
European Environment Agency
United Nations Environment Programme - World
Conservation Monitoring Centre

National data
Natura 2000 data
World Database on Protected Areas

In-situ data requirement:***Radiation - EU27 coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

EU27

Timeliness:

N/A

Frequency:

TBD

Note:

not specified

Relevant Copernicus product data:

European Flood Awareness System

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***River discharge - daily measurements, EU27 coverage*****Characteristics:**

Daily estimated average,
 daily measured average
 1 min derived
 10 mins derived
 15 mins derived
 30 mins derived
 hourly derived
 bihourly derived
 instantaneous derived

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

EU27

Timeliness:

N/A

Frequency:

Daily

Note:

not specified

Relevant Copernicus product data:

European Flood Awareness System

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex I: Hydrography

Potential in-situ data providers

Global Runoff Data Centre
 National authorities in Member states

Dataset/Product name

Global Runoff Database
 National data

In-situ data requirement:***Settlement locations and toponyms - scale 1: 50 000, global coverage*****Characteristics:**

Official administrative names, local names, total population by location

Target accuracy:

>1:50 000

Threshold accuracy:

1: 50 000

Dissemination:

N/A

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Latest version available, preferably not older than 3 years

OGC vector format

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Delineation maps - overview	Product generation	Essential
Delineation maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Grading maps - overview	Product generation	Essential
Grading maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Pre-disaster situation maps - overview	Product generation	Essential
Pre-disaster situation maps - detail	Product generation	Essential
Post-disaster situation maps - overview	Product generation	Essential
Post-disaster situation maps - detail	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex I: Geographical names

Potential in-situ data providers**Dataset/Product name**

geonames.org
National authorities in Member states
National Geospatial-Intelligence Agency

GeoNames geographical database
National data
NGA GEOnet Names Server

In-situ data requirement:***Soil information/maps - scale 1:100 000, global coverage*****Characteristics:**

Soil type

Target accuracy:

1:100 000

Threshold accuracy:

1:250 000

Dissemination:

N/A

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Soil map classification that can be 'mapped' to global recognised classification, e.g. FAO Soil Map?

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Post-disaster situation maps - overview	Product generation	Useful
Post-disaster situation maps - detail	Product generation	Useful
Reference maps - overview	Product generation	Useful
Pre-disaster situation maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Useful
Pre-disaster situation maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Useful
Reference maps - detail	Product generation	Useful
Grading maps - overview	Product generation	Useful
Grading maps - detail	Product generation	Useful
Delineation maps - overview	Product generation	Useful
Delineation maps - detail	Product generation	Useful

Links to Inspire annex(s) and theme(s):

Annex III: Soil

Potential in-situ data providers**Dataset/Product name**

Eurostat	LUCAS
National authorities in Member states	National data
Joint Research Centre	Soil Geographical Database of Europe
International Soil Reference and Information Center	World Soil Information

In-situ data requirement:***Sunshine duration - hourly to daily measurements, EU27 coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

EU27

Timeliness:

N/A

Frequency:

Hourly

Note:

Frequency:

hourly

12 hourly

daily

Relevant Copernicus product data:

European Flood Awareness System

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Temperature - hourly measurements, EU27 coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

EU27

Timeliness:

TBD

Frequency:

Hourly

Note:

Frequency:

hourly

12 hourly

daily

Relevant Copernicus product data:

European Flood Awareness System

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Environmental monitoring Facilities

Annex III: Meteorological geographical features

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Topographic maps - scale 1:25 000, global, EEA39 coverage*****Characteristics:**

Vegetation, hydrography, road network, elevation, planimetric data and topography (preferably accompanied with the legend)

Target accuracy:

1:25 000

Threshold accuracy:

1:50 000

Dissemination:

View and Download

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Latest version available, preferably not older than 3 years

National and/or UTM projections

GeoTIFF (in the form of georeferenced tile sheets)

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Grading maps - overview	Product generation	Essential
Grading maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Delineation maps - overview	Product generation	Essential
Delineation maps - detail	Product generation	Essential
Pre-disaster situation maps - overview	Product generation	Essential
Pre-disaster situation maps - detail	Product generation	Essential
Post-disaster situation maps - overview	Product generation	Essential
Post-disaster situation maps - detail	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex I: Administrative units

Annex I: Geographical names

Annex I: Hydrography

Annex I: Transport networks

Annex III: Land use

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states

National data

In-situ data requirement:***Transport networks - railways - scale better than 1:50 000, global coverage*****Characteristics:**

Railway network

Number of tracks

Power specification (electrified, diesel)

Target accuracy:

>1:50 000

Threshold accuracy:

1: 50 000

Dissemination:

View and Download

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Latest version available, preferably not older than 3 years

OGC vector formats

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Delineation maps - overview	Product generation	Essential
Delineation maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Grading maps - overview	Product generation	Essential
Grading maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Pre-disaster situation maps - overview	Product generation	Essential
Pre-disaster situation maps - detail	Product generation	Essential
Post-disaster situation maps - overview	Product generation	Essential
Post-disaster situation maps - detail	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex I: Transport networks

Potential in-situ data providers**Dataset/Product name**

Eurogeographics
 Europa Technologies
 National authorities in Member states
 National Geospatial-Intelligence Agency
 National Geospatial-Intelligence Agency

EuroBoundaryMap
 Global Discovery
 National data
 VMAP0
 VMAP1

In-situ data requirement:

Transport networks - roads - scale better than 1: 50 000, global coverage

Characteristics:

Road category (highway, dual carriage, national...)
 Surface type
 Number of lanes
 Road name

Target accuracy:

>1: 50 000

Threshold accuracy:

1: 50 000

Dissemination:

View and Download

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Latest version available, preferably not older than 3 years
 OGC vector formats

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Delineation maps - overview	Product generation	Essential
Delineation maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Grading maps - overview	Product generation	Essential
Grading maps - detail	Product generation	Essential
Reference maps - overview	Product generation	Essential
Reference maps - detail	Product generation	Essential
Pre-disaster situation maps - overview	Product generation	Essential
Pre-disaster situation maps - detail	Product generation	Essential
Post-disaster situation maps - overview	Product generation	Essential
Post-disaster situation maps - detail	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex I: Transport networks

Potential in-situ data providers**Dataset/Product name**

Eurogeographics	EuroBoundaryMap
Center for International Earth Science Information Network	Global Roads Open Access Data Set
National authorities in Member states	National data
NAVTEQ	NAVTEQ maps
OpenStreetMap (OSM) project	OpenStreetMap
TomTom NV	TomTom NV products (previously
Tele Atlas products)	
UN Geographic Information Working Group	UN Spatial Data Infrastructure -
Transport - V1.2	
National Geospatial-Intelligence Agency	VMAP0
National Geospatial-Intelligence Agency	VMAP1

In-situ data requirement:***Wapour pressure - daily measurements, EU27 coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

EU27

Timeliness:

N/A

Frequency:

Daily

Note:

not specified

Relevant Copernicus product data:

European Flood Awareness System

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Water level - EU27 coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

EU27

Timeliness:

N/A

Frequency:

<5 min

Note:

Frequency:

1 minute

10 minutes

30 minutes

hourly

bihourly

daily

instantaneous

Relevant Copernicus product data:

European Flood Awareness System

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

N/A

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Wind direction - hourly to daily measurements, EU27 coverage*****Characteristics:**

not specified

Target accuracy:

Daily average at 10m height

Threshold accuracy:

Daily average at 10m height

Dissemination:

View and Download

Coverage:

EU27

Timeliness:

N/A

Frequency:

Hourly

Note:

Frequency:

hourly

daily

Relevant Copernicus product data:

European Flood Awareness System

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Wind information - global coverage*****Characteristics:**

Wind speed/hour

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

1 day

Frequency:

Daily

Note:

Specific data needs (for short/mid term) are: windspeed, wind direction and wind location in real time (for

example, to fill fire propagation model or assess evolution of dust from volcano)

Relevant Copernicus product data:**in-situ data is required for: Criticality of in-situ**

Reference maps - overview	Product generation	Useful
Reference maps - detail	Product generation	Useful
Pre-disaster situation maps - overview	Product generation	Essential
Pre-disaster situation maps - detail	Product generation	Essential
Post-disaster situation maps - overview	Product generation	Useful
Post-disaster situation maps - detail	Product generation	Useful
Reference maps - overview	Product generation	Useful
Reference maps - detail	Product generation	Useful
Grading maps - overview	Product generation	Useful
Grading maps - detail	Product generation	Useful
Delineation maps - overview	Product generation	Useful
Delineation maps - detail	Product generation	Useful

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers**Dataset/Product name**

European Centre for Medium-Range Weather Forecasts
National authorities in Member states

ECMWF Met Forecast Data
National data

In-situ data requirement:***Wind speed - EU27 coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

EU27

Timeliness:

N/A

Frequency:

TBD

Note:

not specified

Relevant Copernicus product data:

European Flood Awareness System

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

4 Land Monitoring Service

The Copernicus land monitoring service provides geographical information on land cover/land use and on variables related to vegetation state and the water cycle. It supports applications in a variety of domains, such as spatial planning, forest management, water management and agriculture and consists of the above four main components. The land service is divided three components, a global, a pan-European and a local component.

The global land component in the framework of GMES Initial Operations (GIO) provides a series of bio-geophysical products on the status and evolution of land surface at global scale. Production and delivery of the parameters are to take place in a timely manner and are complemented by the constitution of long term time series.

The pan-European component produces five high resolution data sets describing the main land cover characteristics: artificial surfaces (e.g. roads and paved areas), forest areas, agricultural areas (grasslands), wetlands, and small water bodies. The pan-European component is also updating the Corine Land Cover dataset to the reference year 2012.

The local component is aims at providing specific and more detailed information that is complementary to the information obtained through the pan-European component. Besides an update of the Urban Atlas, the next local component will address land cover in areas around rivers for the purposes of biodiversity monitoring.⁵

⁵ Taken from the service website: <http://land.copernicus.eu/>

In-situ data requirement:

Administrative boundaries - scale 1:100 000-1:250 000, global coverage

Characteristics:

Official administrative names, local names

Target accuracy:

1:100 000-1:250 000

Threshold accuracy:

1:250 000 - 1: 500 000

Dissemination:

N/A

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Administrative level 1 (country)

Relevant Copernicus product(s): data:

Soil moisture products
Land surface radiation products

in-situ data is required for: Criticality of in-situ

Product generation	Essential
Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex I: Administrative units

Potential in-situ data providers

GADM database of Global Administrative Areas
Food and Agriculture Organization of the United Nations
GAUL
National authorities in Member states
UN Geographic Information Working Group
Boundaries - SALB

Dataset/Product name

Global administrative areas - GADM
Global Administrative Unit Layer -

National data
Second Administrative Level

In-situ data requirement:***Administrative units - scale 1:25 000, EEA39 coverage*****Characteristics:**

- Positional accuracy better than 50 m;
- The dataset should not be older than (target) 1 year, (threshold) 3 years;
- The dataset should be consistent and homogenised at the EEA39 level (geometry and information);
- The dataset must be available in national and European projections identical to those used for the satellite image production;
- Topological consistency (no overlaps, no slivers, no uncontrolled gaps, no loops, etc)

Required subthemes:

- Administrative boundaries and units;
- NUTS & LAU;
- Coastlines;
- Geographic names

Features:

- Official entry into force date of the boundary / unit (timestamp);
 - Type of boundaries (country code (ISO3166), region, municipality);
 - For EU + EFTA: NUTS level 3 code of LAU;
 - Harmonised ID link to ESTAT statistics is essential
 - National hierarchical level of the administrative structure;
 - Geographical names in all official country languages (ASCII, Latin characters without diacritics);
 - INSPIRE_ID;
 - Coastline flag if coincidence with administrative boundary ;
- Remark: not all features are equally important

Target accuracy:

1: 25 000

Threshold accuracy:

1: 100 000

Dissemination:

View and Download

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

**Relevant Copernicus product(s):
data:****in-situ data is required for: Criticality of in-situ**

CORINE Land Cover	Product generation	Essential
Biodiversity	Product generation	Essential
CORINE Land Cover change	Product generation	Essential
Urban Atlas	Product generation	Essential
High resolution grasslands	Product generation	Essential
High resolution wetlands	Product generation	Essential
High resolution water bodies	Product generation	Essential
High resolution impervious surface	Product generation	Essential
High resolution forest layer	Product generation	Essential

Links to Inspire annex(s) and theme(s):

- Annex I: Administrative units
- Annex I: Geographical names
- Annex III: Statistical units

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Agriculture statistics - accuracy 2000-10000 km2, global coverage*****Characteristics:**

not specified

Target accuracy:

2000 km2 to 10 000 km2

Threshold accuracy:

25000 km2

Dissemination:

TBD

Coverage:

Global

Timeliness:

Latest version available

Frequency:

TBD

Note:

Quality might change from country to country

**Relevant Copernicus product(s):
data:**

Vegetation biomass products

in-situ data is required for: Criticality of in-situ

Calibration and validation

Desirable

Links to Inspire annex(s) and theme(s):

TBD

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Atmospheric conditions - air temperature - global coverage*****Characteristics:**

Air temperature

Target accuracy:

Not applicable: point measurements needed

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

Latest version available

Frequency:

TBD

Note:

not specified

**Relevant Copernicus product(s):
data:**

Soil moisture products

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring Facilities

Potential in-situ data providers

WMO Global Atmosphere Watch

National authorities in Member states

Dataset/Product name

Data from WMO GAW

National data

In-situ data requirement:

Atmospheric conditions - air temperature - near real time observations, accuracy 25 km, global coverage

Characteristics:

Air temperature forecast

Target accuracy:

25 km

Threshold accuracy:

not specified

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

not specified

Relevant Copernicus product(s): data:

Soil moisture products

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring Facilities

Potential in-situ data providers

European Centre for Medium-Range Weather Forecasts
National authorities in Member states

Dataset/Product name

ECMWF Met Forecast Data
National data

In-situ data requirement:

Atmospheric conditions - air temperature - timeliness 1 month, accuracy 25 km, global coverage

Characteristics:

Air temperature reanalysis

Target accuracy:

25 km

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

1 month

Frequency:

TBD

Note:

not specified

Relevant Copernicus product(s): data:

Soil moisture products

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring Facilities

Potential in-situ data providers

European Centre for Medium-Range Weather Forecasts
National authorities in Member states

Dataset/Product name

ERA-Interim
National data

In-situ data requirement:

Atmospheric conditions - near real time observations, accuracy 0.25° or 0.16°, global coverage

Characteristics:

2T (2 metre temperature), 2D (2 metre dewpoint temperature), TCWV (Total column water vapour), SKT (surface temperature)

Target accuracy:

0.25° or 0.16°

Threshold accuracy:

not specified

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

TBD

Frequency:

Twice a day

Note:

not specified

Relevant Copernicus product(s): data:

Land surface radiation products

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring Facilities

Potential in-situ data providers

National authorities in Member states

European Centre for Medium-Range Weather Forecasts

Dataset/Product name

National data

Observations - historical data and NRT

In-situ data requirement:

Atmospheric conditions - water vapour, pressure, ozone - near real time observations, accuracy 1 degree, global coverage

Characteristics:

not specified

Target accuracy:

1 degree

Threshold accuracy:

not specified

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

not specified

**Relevant Copernicus product(s):
data:**

Vegetation products

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring Facilities

Potential in-situ data providers

National authorities in Member states

European Centre for Medium-Range Weather Forecasts

Ocean Biology Processing Group (NASA OBPG)

Dataset/Product name

National data

Observations - historical data and NRT

Ocean colour data products

In-situ data requirement:

Atmospheric conditions - water vapour - near real time observations, accuracy 0.25 degree, global coverage

Characteristics:

Water-vapour, vertically integrated from ground level to a level of 150 hPa

Target accuracy:

0.25 degree

Threshold accuracy:

not specified

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

not specified

Relevant Copernicus product(s): data:

Dry matter productivity products

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring Facilities

Potential in-situ data providers

National authorities in Member states

European Centre for Medium-Range Weather Forecasts

Dataset/Product name

National data

Observations - historical data and NRT

In-situ data requirement:***Biomass (dry) - global coverage*****Characteristics:**

Sites should be at least 3 km x 3km size, relatively homogeneous at the 1 km scale. Destructive measurements for low vegetation (crops, grasslands)

Target accuracy:

20%

Threshold accuracy:

30%

Dissemination:

TBD

Coverage:

Global

Timeliness:

N/A

Frequency:

TBD

Note:

Global with a stratified sampling strategy according to the distribution of vegetation type and conditions;

Sites should be at least 3 km x 3km size (with about 15 to 40 elementary sampling units), relatively homogeneous at the 1 km scale. Around 10 sites per year should be sampled. Sites could move from one year to another.

**Relevant Copernicus product(s):
data:**

Vegetation biomass products

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

TBD

Potential in-situ data providers

Fluxnet

National authorities in Member states

Dataset/Product name

Data from Fluxnet

National data

In-situ data requirement:***BirdLife species database - EEA39 coverage*****Characteristics:**

Poin/Polygon location file and wetland type/characteristic

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

Note:

not specified

**Relevant Copernicus product(s):
data:**

High resolution wetlands

in-situ data is required for: Criticality of in-situ

Calibration and validation

Useful

Links to Inspire annex(s) and theme(s):

Annex III: Habitats and biotopes

Annex III: Species distribution

Potential in-situ data providers

BirdLife International

Dataset/Product name

BirdLife species database

In-situ data requirement:***Buildings - scale 1:10 000, EEA39 coverage*****Characteristics:**

The dataset should not be older than (target) 1 year, (threshold) 3 years

Required subthemes:

Residential;
Agricultural;
Commerce & Services (office, retail, public services)
Industry;
Geographical names

Features:

Location (centre);
Type (communication, energy, environmental barriers, transport), (religious building, silo, stadium, storage tank, tower, windmill);
Condition (in decline, demolished, functional, projected, ruin, under construction);
Area;
Number of floors;
Height of building;
Coordinate reference system

Target accuracy:

1:10 000

Threshold accuracy:

1:50 000

Dissemination:

View and Download

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

Note:

not specified

Relevant Copernicus product(s): data:

Urban Atlas
Biodiversity
High resolution grasslands
CORINE Land Cover change
CORINE Land Cover

in-situ data is required for: Criticality of in-situ

Product generation	Essential
Product generation	Essential
Product generation	Desirable
Product generation	Desirable
Product generation	Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Buildings

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Cadastral parcels -scale 1: 1 000, EU27 coverage*****Characteristics:**

Cities with more than 50 000 inhabitants

Required subthemes:

Parcels;
Cultivation
Geographical names

Features:

Timestamp per parcel;
Coordinate reference system;
The dataset should not be older than (target) 3 year, (threshold) 5 year

Target accuracy:

1: 1 000

Threshold accuracy:

1: 5 000

Dissemination:

View and Download

Coverage:

EU27

Timeliness:

Latest version available

Frequency:

Periodic Update

Note:

Cadastral parcels could be good as part of geometry skeleton. Also several land use categories registered in cadastre could be useful from thematic point of view. Nevertheless one has to be aware about discrepancies between de-jure LU (cadaster) and de-facto LC (as seen on EO data), when used for verification. LPIS based field blocks would be more useful i.e. for agriculture/grassland mask.

**Relevant Copernicus product(s):
data:****in-situ data is required for: Criticality of in-situ**

High resolution impervious surface	Product generation	Useful
High resolution forest layer	Product generation	Useful
CORINE Land Cover change	Product generation	Useful
CORINE Land Cover	Product generation	Useful
High resolution wetlands	Product generation	Useful
High resolution grasslands	Product generation	Desirable
Biodiversity	Product generation	Desirable
Urban Atlas	Product generation	Useful

Links to Inspire annex(s) and theme(s):

Annex I: Cadastral parcels

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states

National data

In-situ data requirement:***City maps - scale 1:5 000, EU27 coverage*****Characteristics:**

Cities with more than 50 000/100 000 inhabitants or the largest city in the region

Features:

Land use information

Land marks

Target accuracy:

1: 5 000

Threshold accuracy:

Better than 1: 50 000

Dissemination:

View and Download

Coverage:

EU27

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Tourist maps

**Relevant Copernicus product(s):
data:**

High resolution forest layer
High resolution impervious surface
Urban Atlas

in-situ data is required for: Criticality of in-situ

Product generation	Useful
Product generation	Useful
Product generation	Desirable

Links to Inspire annex(s) and theme(s):

N/A

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:

Climate classification - global coverage

Characteristics:

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

Latest version available

Frequency:

TBD

Note:

not specified

**Relevant Copernicus product(s):
data:**

Soil moisture products

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

N/A

Potential in-situ data providers

Carinthian Institute for Climate Protection

Dataset/Product name

Köppen-Geiger climate classification

In-situ data requirement:***Coordinate Reference System*****Characteristics:**

CRS shall be consistent with the CRS list used by ESA

Required subthemes:

Official national projection

Features:

Name of projection

Projection parameters

Datum parameters

Transformation parameters to ETRS89 / WGS8

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Remark: Systems for uniquely referencing systems in space, as a set of coordinates (x,y,z) and/or latitude & longitude & height, based on a geodetic horizontal and vertical datum

**Relevant Copernicus product(s):
data:****in-situ data is required for: Criticality of in-situ**

Urban Atlas	Product generation	Essential
Biodiversity	Product generation	Essential
High resolution wetlands	Product generation	Essential
High resolution water bodies	Product generation	Essential
High resolution impervious surface	Product generation	Essential
High resolution grasslands	Product generation	Essential
High resolution forest layer	Product generation	Essential
CORINE Land Cover change	Product generation	Essential
CORINE Land Cover	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex I

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states

National data

In-situ data requirement:***DEM - accuracy 0.0083° < > 1 km, global coverage*****Characteristics:**

not specified

Target accuracy:

0.0083° < > 1 km

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

Latest version available

Frequency:

TBD

Note:

not specified

**Relevant Copernicus product(s):
data:**Land surface radiation products
Vegetation products
Burnt areas products**in-situ data is required for: Criticality of in-situ**Product generation Essential
Product generation Essential
Product generation Essential**Links to Inspire annex(s) and theme(s):**

Annex II: Elevation

Potential in-situ data providersUS Geology Service
CGIAR Consortium for Spatial Information**Dataset/Product name**GTOPO 30
SRTM

In-situ data requirement:***DEM high resolution - scale 1:25 000, EEA39 coverage*****Characteristics:**

The dataset should not be older than (target) 3 year, (threshold) 5 years;

Remark: criticality of timestamp may vary according to elevation or surface model, and depending on type of landscape.

The dataset should be consistent and homogenised at the country level;

The dataset shall be available in national projections identical to those used for the satellite image production;

The elevation model should be hydro-enforced;

Co-ordinate reference system (and transformation parameters to ETRS89 / WGS84) must be available.

Required subthemes:

Land

Features:

To be included in metadata:

Coverage;

Elevation properties;

Coastline;

Timestamp;

Source of information;

Coordinate reference system

Target accuracy:

Spatial resolution: 1m - 25m

Accuracy (target): horizontal CE90: 1m - 5m; vertical LE90: 1- 2.5 m

1: 25 000

Threshold accuracy:

Spatial resolution: 1m - 25m

Accuracy (threshold): horizontal CE90: 1m - 25m; vertical LE90: 1 - 10

1: 25 000

Dissemination:

View and Download

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

Relevant Copernicus product(s): data:

Urban Atlas

Biodiversity

High resolution water bodies

High resolution wetlands

CORINE Land Cover change

CORINE Land Cover

High resolution forest layer

in-situ data is required for: Criticality of in-situ

Product generation

Product generation

Product generation

Product generation

Product generation

Product generation

Product generation

Useful

Essential

Desirable

Desirable

Useful

Useful

Essential

Links to Inspire annex(s) and theme(s):

Annex II: Elevation

Potential in-situ data providers

ASTER Global Digital Elevation Model project (NASA/METI)

Eurogeographics

National authorities in Member states

Intermap Technologies

CGIAR Consortium for Spatial Information

Dataset/Product name

ASTER GDEM

EuroDEM

National data

NextMap

SRTM

In-situ data requirement:***DEM low to med resolution - scale 1:100 000, EEA39 coverage*****Characteristics:**

The dataset should not be older than (target) 5 year, (threshold) 8 years;

Remark: criticality of timestamp may vary according to elevation or surface model, and depending on type of landscape.

The dataset should be consistent and homogenised at the pan-European level;

The dataset shall be available in national and European projections identical to those used for the satellite image production;

The elevation model should be hydro-enforced;

Co-ordinate reference system (and transformation parameters to ETRS89 / WGS84) must be available

Required subthemes:

Land

Features:

To be included in metadata:

Coverage;

Elevation properties;

Coastline;

Timestamp;

Source of information;

Coordinate reference system

Target accuracy:

30 m - 90 m resolution

horizontal CE90: 5 m - 15 m

vertical LE90: 4 m - 6 m

X, Y, Z: 6 m

Scale 1:100 000

Threshold accuracy:

30 m - 90 m

horizontal CE90: 15 m - 30 m

vertical LE90: 7-14 m

Scale 1:100 000

Dissemination:

View and Download

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

Note:

not specified

Relevant Copernicus product(s): data:

High resolution impervious surface

High resolution grasslands

Biodiversity

Urban Atlas

High resolution forest layer

CORINE Land Cover change

CORINE Land Cover

High resolution wetlands

High resolution water bodies

in-situ data is required for: Criticality of in-situ

Product generation

Useful

Product generation

Useful

Product generation

Useful

Product generation

Useful

Product generation

Desirable

Product generation

Useful

Product generation

Useful

Product generation

Desirable

Product generation

Desirable

Links to Inspire annex(s) and theme(s):

Annex II: Elevation

Potential in-situ data providers

ASTER Global Digital Elevation Model project
(NASA/METI)
National authorities in Member states
CGIAR Consortium for Spatial Information

Dataset/Product name

ASTER GDEM
National data
SRTM

In-situ data requirement:

Discharge - African coverage

Characteristics:

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

Coverage:

Continental

Timeliness:

Latest version available

Frequency:

Daily

Note:

Coverage - Africa;

**Relevant Copernicus product(s):
data:**

Water bodies products

in-situ data is required for: Criticality of in-situ

Calibration and validation

Useful

Links to Inspire annex(s) and theme(s):

Annex I: Hydrography

Potential in-situ data providers

Global Runoff Data Centre

Dataset/Product name

Global Runoff Database

In-situ data requirement:

Down-welling global solar radiation (DSSF) & Down-welling thermal infrared radiation (DSLIF) - accuracy 2.5%, global coverage

Characteristics:

Measurements in (W/m²) from pyranometers

Target accuracy:

2.5%

Threshold accuracy:

5%

Dissemination:**Coverage:**

Global

Timeliness:**Frequency:****Note:**

- (i) Difficult to obtain data for recent periods;
- (ii) lack of data over Africa
- (iii) quality control often necessary

The dataset should be representative of the different regions over the globe

Relevant Copernicus product(s): data:**in-situ data is required for: Criticality of in-situ**

Land surface radiation products

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

N/A

Potential in-situ data providers**Dataset/Product name**

World Radiation Monitoring Centre (BSRN) datasets

Baseline Solar Radiation Network

CarboAfrica

Data from CarboAfrica

CarboEurope

Data from CarboEurope

Fluxnet

Data from Fluxnet

World Radiation Data Centre

Data from WRDC

National authorities in Member states

National data

National Oceanic and Atmospheric Administration

SURFRAD datasets

In-situ data requirement:***EUNIS database - EEA39 coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

Note:

not specified

**Relevant Copernicus product(s):
data:**

High resolution wetlands

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex I: Protected sites

Annex III: Habitats and biotopes

Annex III: Species distribution

Potential in-situ data providers

European Environment Agency

Dataset/Product name

EUNIS data

In-situ data requirement:***Field data - 2 km x 2 km grid, EEA39 coverage*****Characteristics:**

Land cover, land use, landscape photos

Target accuracy:

2 km x 2 km grid

Threshold accuracy:

2 km x 2 km grid

Dissemination:

TBD

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Periodic Update

Note:

LUCAS

**Relevant Copernicus product(s):
data:**

CORINE Land Cover

in-situ data is required for: Criticality of in-situ

Product generation

Desirable

Links to Inspire annex(s) and theme(s):

Annex II: Land cover

Potential in-situ data providers

Eurostat

National authorities in Member states

Dataset/Product name

LUCAS

National data

In-situ data requirement:***Field information - at building level, EU27 coverage based on on-site visits*****Characteristics:**

Cities with more than 100 000 inhabitants or the largest city in the region

Target accuracy:

Building level

Threshold accuracy:

Building block

Dissemination:

TBD

Coverage:

EU27

Timeliness:

N/A

Frequency:

TBD

Note:

On-site visits

**Relevant Copernicus product(s):
data:**

Urban Atlas

in-situ data is required for: Criticality of in-situ

Calibration and validation

Desirable

Links to Inspire annex(s) and theme(s):

N/A

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Fire data - accuracy 1 km, global coverage*****Characteristics:**

Perimeter, area, time, vegetation type

Target accuracy:

1 km

Threshold accuracy:

not specified

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

TBD

Frequency:**Note:**

Not easily accessible even if they exist; the quality may vary

**Relevant Copernicus product(s):
data:**

Burnt areas products

in-situ data is required for: Criticality of in-situ

Product generation

Desirable

Links to Inspire annex(s) and theme(s):

N/A

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Forest area at pixel level - EEA39 coverage*****Characteristics:**

not specified

Target accuracy:

Pixel level

Threshold accuracy:

1 ha

Dissemination:

TBD

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

Note:

not specified

**Relevant Copernicus product(s):
data:**

High resolution grasslands

in-situ data is required for: Criticality of in-situ

Product generation

Desirable

Links to Inspire annex(s) and theme(s):

Annex II: Land cover

Potential in-situ data providers

GIO Land

Dataset/Product name

Forest area

In-situ data requirement:

Forest inventory data (spatial) - scale 1:5 000-1:25 000, EEA39 coverage

Characteristics:

not specified

Target accuracy:

1: 5 000 - 1: 25 000

Threshold accuracy:

1:25 000

Dissemination:

TBD

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Covering 1-2% throughout different sites of total country area

**Relevant Copernicus product(s):
data:**

High resolution forest layer

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex II: Land cover

Potential in-situ data providers

International Co-operative Programme on Assessment and
Monitoring of Air Pollution Effects on Forests

Eurostat

National authorities in Member states

Dataset/Product name

ICP Forests Level I

LUCAS

National data

In-situ data requirement:***GMES reference data service - EEA39 coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

EEA39

Timeliness:

TBD

Frequency:

TBD

Note:

The objective of the GMES RDA project is to address the progressive operational implementation of Global Monitoring for Environment and Security (GMES) services, and more specifically to start the implementation of an initial GMES service for a geospatial reference data service element cross-cutting the different GMES services. The first lot is dedicated to the implementation of initial GMES service for geospatial data access in Europe providing an open and free access to a selection of spatial data themes from the INSPIRE annex I and/or II integrated at European level. Lot 1 of the project focuses on two themes, an EU-DEM and hydrological networks. The latter one is required for the development of the HR water body layer.

**Relevant Copernicus product(s):
data:**

High resolution water bodies

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

N/A

In-situ data requirement:***Hydrographical information - water bodies - scale 1:25 000, EEA39 coverage*****Characteristics:**

The dataset should not be older than (target) 3 year, (threshold) 5 years;
 The dataset should be consistent and homogenised at the EEA39 level (geometry and information);
 The dataset must be available in national and European projections identical to those used for the satellite image production;
 Waterways have to be represented as linear features;
 Topologically consistent (sound network topology; line features must be connected at their end points);

Required subthemes:

Lakes & reservoirs;
 Rivers and canals (network)
 Basins and sub-basins;
 Estuaries, lagoons, coastal features and Sea;
 Other waters;
 Dams, ditches;
 Geographical names

Features:

Ports;
 Type of object;
 Central axis lines; confluences, INSPIRE_IDs
 Time of latest status of the transport segment (geometry and/or category changes) started in practice;
 Geographical names

Target accuracy:

1:25 000
 Positional accuracy better than 20 m

Threshold accuracy:

1: 100 000
 Positional accuracy better than 20

Dissemination:

TBD

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

Note:

water networks, rivers, canals, lakes, reservoirs, watersheds, floodplain limits

Relevant Copernicus product(s): data:**in-situ data is required for: Criticality of in-situ**

Biodiversity	Product generation	Essential
Urban Atlas	Product generation	Essential
High resolution impervious surface	Product generation	Desirable
High resolution grasslands	Product generation	Essential
High resolution forest layer	Product generation	Essential
CORINE Land Cover change	Product generation	Desirable
CORINE Land Cover	Product generation	Desirable
High resolution water bodies	Product generation	Essential
High resolution wetlands	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex I: Geographical names
 Annex I: Hydrography

Potential in-situ data providers

European Environment Agency
Network

National authorities in Member states

Dataset/Product name

European Catchment and Rivers

System (ECRINS)

National data

In-situ data requirement:***Impervious surfaces HR layer -accuracy 20 m pixel, EU27 coverage*****Characteristics:**

Cities with more than 100 000 inhabitants or the largest city in the region

Target accuracy:

20 m pixel

Threshold accuracy:

20 m pixel

Dissemination:

TBD

Coverage:

EU27

Timeliness:

Latest version available

Frequency:

Irregular

Note:

The impervious surface layer is a product of the GIO Land service itself

**Relevant Copernicus product(s):
data:**

Urban Atlas

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

N/A

Potential in-situ data providers

European Environment Agency
Land

m

Dataset/Product name

EEA Fast Track Service Precursor on

Monitoring - degree of soil sealing 100

In-situ data requirement:

Lakes and wetlands - accuracy 30 arc sec, global coverage

Characteristics:

not specified

Target accuracy:

30 arc sec

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

Latest version available

Frequency:

TBD

Note:

not specified

**Relevant Copernicus product(s):
data:**

Water bodies products

in-situ data is required for: Criticality of in-situ

Calibration and validation

Useful

Links to Inspire annex(s) and theme(s):

Annex I: Hydrography

Potential in-situ data providers

World Wildlife Foundation

National authorities in Member states

Dataset/Product name

Global Lakes and Wetlands Database

National data

In-situ data requirement:***Land Parcel Identification System (LPIS) - scale 1: 10 000, EEA39 coverage*****Characteristics:**

The dataset shall be consistent and homogenised at the country level (geometry and information)

Features:

Outline of the reference parcel

Attribute information on the land use

Target accuracy:

1: 10 000

Threshold accuracy:

1: 50 000

Dissemination:

View and Download

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Periodic Update

Note:

Separation of grassland/arable land

**Relevant Copernicus product(s):
data:**

Biodiversity
Urban Atlas
High resolution impervious surface
High resolution water bodies
High resolution wetlands
High resolution forest layer
CORINE Land Cover change
High resolution grasslands
CORINE Land Cover

in-situ data is required for: Criticality of in-situ

Product generation	Desirable
Product generation	Useful
Product generation	Useful
Product generation	Useful
Product generation	Desirable
Product generation	Useful
Product generation	Desirable
Product generation	Desirable
Product generation	Desirable

Links to Inspire annex(s) and theme(s):

N/A

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:

Land surface temperature - accuracy higher than 0.2K, global coverage

Characteristics:

not specified

Target accuracy:

Instrument accuracy < 0.2K

Threshold accuracy:

In situ observation of upward and downward radiation using well-calibrated radiometers; 8-12 micro-m band
is preferred

Dissemination:

TBD

Coverage:

Global

Timeliness:

Latest version available

Frequency:

TBD

Note:

The station surroundings must be homogeneous so that observations are representative of pixel (100m - 5 km) scales

**Relevant Copernicus product(s):
data:**

Land surface radiation products

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Land use - scale 1:25 000, EEA39*****Characteristics:**

The dataset shall be consistent and homogenised at the country level (geometry and information)

Required subthemes:

Residential;
 Industrial (including quarries, mining, dumpsites);/ Commercial
 Agricultural;
 Forestry;
 Recreational;
 Mining / dumpsites

Features:

Type;
 Timestamp;
 The dataset should not be older than (target) 3 year, (threshold) 5 years;
 Source of information

Target accuracy:

1:25 000

Threshold accuracy:

1:50 000

Dissemination:

View and Download

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

Note:

not specified

**Relevant Copernicus product(s):
data:**

Urban Atlas
 Biodiversity
 High resolution impervious surface
 High resolution grasslands
 High resolution water bodies
 High resolution wetlands
 High resolution forest layer
 CORINE Land Cover change
 CORINE Land Cover

in-situ data is required for: Criticality of in-situ

Product generation	Desirable
Product generation	Desirable
Calibration and validation	Desirable
Calibration and validation	Desirable
Calibration and validation	Desirable
Calibration and validation	Desirable
Calibration and validation	Desirable
Product generation	Desirable
Product generation	Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Land use

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:

LIDAR - accuracy 0.3 m - 5 m, EEA39 coverage

Characteristics:

not specified

Target accuracy:

0.3 m - 5 m

Threshold accuracy:

0.3 m - 5 m

Dissemination:

TBD

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Extremely costly, but very accurate biomass/volume estimates possible

**Relevant Copernicus product(s):
data:**

High resolution forest layer

in-situ data is required for: Criticality of in-situ

Product generation

Desirable

Links to Inspire annex(s) and theme(s):

N/A

In-situ data requirement:

Maps of water bodies - accuracy 30 arc sec, global coverage

Characteristics:

not specified

Target accuracy:

30 arc sec

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

Latest version available

Frequency:

TBD

Note:

not specified

**Relevant Copernicus product(s):
data:**

Water bodies products

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex I: Hydrography

Potential in-situ data providers

US Geology Service

Dataset/Product name

GTOPO 30 Water bodies

In-situ data requirement:***MedWet database - scale 1: 25 000, EEA39 coverage*****Characteristics:**

Point/ polygon location file and wetland type/ characteristics

Target accuracy:

1: 25 000

Threshold accuracy:

1: 100 000

Dissemination:

TBD

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Periodic Update

Note:

not specified

**Relevant Copernicus product(s):
data:**

High resolution wetlands

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

N/A

Potential in-situ data providers

Wetlands International

Dataset/Product name

MedWet database

In-situ data requirement:***National grassland inventories - scale 1: 5 000 - 1: 25 000, EEA39*****Characteristics:**

not specified

Target accuracy:

1: 5 000 - 1: 25 000

Threshold accuracy:

1: 5 000 - 1: 25 000

Dissemination:

TBD

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Periodic Update

Note:

not specified

**Relevant Copernicus product(s):
data:**

High resolution grasslands

in-situ data is required for: Criticality of in-situ

Supporting the exploitation of the product Essential

Links to Inspire annex(s) and theme(s):

Annex II: Land cover

Potential in-situ data providersEurostat
National authorities in Member states**Dataset/Product name**LUCAS
National data

In-situ data requirement:***National land cover inventories - scale 1:25 000, EEA39 coverage*****Characteristics:**

The dataset shall be consistent and homogenised at the country level (geometry and information)

Required subthemes:

Artificial surfaces;
Agricultural areas;
Forests;
Semi-)natural areas;
Wetlands;
Water bodies;
Landforms;
Semi-natural and natural vegetation patterns;
Rock and bare soil;
Snow & ice

Features:

Type; (dunes, moraines, rees)

Remark: these features belong in essence to landforms, and could be considered separately.

Reference timestamp;

The dataset should not be older than (target) 3 year, (threshold) 5 years;

Source of information

Target accuracy:

1: 25 000 or better

Threshold accuracy:

1: 50 000

Dissemination:

View and Download

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Periodic Update

Note:

not specified

**Relevant Copernicus product(s):
data:**

Urban Atlas
Biodiversity
High resolution impervious surface
High resolution water bodies
High resolution wetlands
High resolution grasslands
High resolution forest layer
CORINE Land Cover change
CORINE Land Cover

in-situ data is required for: Criticality of in-situ

Product generation	Desirable
Product generation	Desirable
Calibration and validation	Desirable
Calibration and validation	Desirable
Calibration and validation	Desirable
Calibration and validation	Desirable
Calibration and validation	Desirable
Product generation	Desirable
Product generation	Desirable

Links to Inspire annex(s) and theme(s):

Annex II: Land cover

Eionet data flow(s):

CORINE Land cover 2006 reporting

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***National land use statistics - global, EEA39 coverage*****Characteristics:**

Land use sampling data

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

Latest version available

Frequency:

Periodic Update

Note:

not specified

**Relevant Copernicus product(s):
data:**

CORINE Land Cover

in-situ data is required for: Criticality of in-situ

Product generation

Useful

Links to Inspire annex(s) and theme(s):

Annex III: Land use

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***National wetlands databases - scale 1:25 000, EEA39 coverage*****Characteristics:**

Point/polygon location/delineation file and wetland type/characteristics

Target accuracy:

1: 25 000

Threshold accuracy:

1: 100 000

Dissemination:

TBD

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Periodic Update

Note:

not specified

**Relevant Copernicus product(s):
data:**

High resolution wetlands

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex II: Land cover

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Orthophotos - accuracy 0.5 m, EEA39 coverage*****Characteristics:**

Positional accuracy better than 1 m;

The dataset should not be older than (target) 1 year, (threshold) 3 years; preferably images are acquired in 2011 or 2012;

Images should as a minimum be available in colour or false colour (NIR) ; (preferably separate bands so as to allow various colour compositions)

The dataset should be consistent and homogenised at the country level (geometry and spectral information);

Information that will allow GIO-land to re-project ortho-imagery from airborne sensors should be available;

Imagery from satellite sensors shall be available in national and European projections identical to those used for the satellite image production

Features:

To be provided in metadata:

Coverage;

Timestamp;

Coordinate reference system;

Spectral characteristics;

Spatial characteristics

Target accuracy:

0.5 m

Threshold accuracy:

1 m

Dissemination:

View and Download

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Periodic Update

Note:

- General requirement for ortho-photos is that the positional accuracy expressed as RMS error should be around the resolution. Transformation between projections (e.g. using WMS services) may cause higher RMSE. Proposal: Positional accuracy $RMSE \leq 1m$.

- For visual interpretation near-infrared band is essential.

For verifying wetlands IR ortho-photos are desirable. For forest types they are essential

Relevant Copernicus product(s): data:**in-situ data is required for: Criticality of in-situ**

Urban Atlas	Product generation	Essential
CORINE Land Cover change	Product generation	Essential
High resolution wetlands	Calibration and validation	Essential
High resolution water bodies	Calibration and validation	Essential
High resolution grasslands	Calibration and validation	Essential
High resolution forest layer	Calibration and validation	Essential
High resolution impervious surface	Calibration and validation	Essential
CORINE Land Cover	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex II: Orthoimagery

Potential in-situ data providers**Dataset/Product name**

National authorities in Member states

National data

In-situ data requirement:***Orthophotos - accuracy 0.5 m, EU27 coverage*****Characteristics:**

not specified

Target accuracy:

0.5 m

Threshold accuracy:

2 m

Dissemination:

TBD

Coverage:

EU27

Timeliness:

Latest version available

Frequency:

Periodic Update

Note:

Selected cities >100.000 inhabitants or the biggest city in a region. Still to be decided for GIO land.

**Relevant Copernicus product(s):
data:**

Urban Atlas

in-situ data is required for: Criticality of in-situ

Calibration and validation

Desirable

Links to Inspire annex(s) and theme(s):

Annex II: Orthoimagery

Potential in-situ data providersNational authorities in Member states
AeroGrid**Dataset/Product name**National data
Orthophotos

In-situ data requirement:***Protected/designated areas - accuracy 1:25 000, EEA39 coverage*****Characteristics:**

The dataset shall be consistent and homogenised at the country level (geometry and information)

Features:

Protection status

Main habitat information

Main species information

Delineation of protected area

Target accuracy:

1: 25 000

Threshold accuracy:

1: 50 000

Dissemination:

View and Download

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

Note:

not specified

**Relevant Copernicus product(s):
data:**

Biodiversity

High resolution impervious surface

High resolution grasslands

High resolution water bodies

High resolution wetlands

High resolution forest layer

CORINE Land Cover change

CORINE Land Cover

in-situ data is required for: Criticality of in-situ

Product generation

Product generation

Product generation

Product generation

Product generation

Product generation

Product generation

Product generation

Desirable

Useful

Desirable

Useful

Desirable

Useful

Useful

Useful

Links to Inspire annex(s) and theme(s):

Annex I: Protected sites

Eionet data flow(s):

CDDA-1: Designated areas (Eionet priority data flow)

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***RAMSAR database - EEA39 coverage*****Characteristics:**

Point location file and wetland type/characteristics

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Periodic Update

Note:

The Ramsar Sites Information Service (RSIS) provides access to information on wetlands designated as internationally important under the Convention on Wetlands

**Relevant Copernicus product(s):
data:**

High resolution wetlands

in-situ data is required for: Criticality of in-situ

Product generation

Desirable

Links to Inspire annex(s) and theme(s):

Annex I: Protected sites

Potential in-situ data providers

RAMSAR Convention

Dataset/Product name

RAMSAR database

In-situ data requirement:***Road network - scale 1:25 000, EEA39 coverage*****Characteristics:**

Positional accuracy better than 20 m, (5 m for Urban Atlas);
 The dataset should not be older than (target) 1 year, (threshold) 2 years;
 The dataset should be consistent and homogenised at the EEA39 level (geometry and information);
 The dataset must be available in national and European projections identical to those used for the satellite image production;
 Roads and railways have to be represented as linear features;
 Water courses have to be represented as linear features (connectivity through water bodies is desirable)
 Water bodies have to be represented as polygon features
 Air traffic (outside boundary, runways, major buildings)
 Topologically consistent (sound network topology; line features must be connected at their end points;
 road features like tunnels and bridges must be part of the same layer as the roads themselves, characterised by an attribute

Required subthemes:

Road;
 Water;
 Rail;
 Air;
 Geographical name

Features:

Roads, railways, rest and parking areas - large areas, stations, ports, airports and airfields;
 All trans-European Transport network (TEN-T) features must be present;
 Road category (highway, dual carriage, national...)
 Number of lanes
 Vertical location flag (underground, on the surface, bridge)
 Central axis lines & width of road
 Highway access points
 Railway category (single track, double track)
 National border crossings
 Time of latest status of the transport segment (geometry and/or category changes) started in practice
 Geographical names according to national classification hierarchy
 River network (hierarchical design)
 INSPIRE_IDs

Remark: not all features are equally important for GIO-land production

Target accuracy:

1:25 000

Threshold accuracy:

1:100 000

Dissemination:

View and Download

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

Note:

not specified

Relevant Copernicus product(s): data:

Biodiversity
 Urban Atlas
 High resolution wetlands
 High resolution water bodies
 High resolution impervious surface

in-situ data is required for: Criticality of in-situ

Product generation
 Product generation
 Product generation
 Product generation
 Product generation
 Essential
 Essential
 Useful
 Useful
 Desirable

High resolution grasslands	Product generation	Desirable
CORINE Land Cover change	Product generation	Desirable
CORINE Land Cover	Product generation	Desirable
High resolution forest layer	Product generation	Desirable

Links to Inspire annex(s) and theme(s):

Annex I: Geographical names
Annex I: Transport networks

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Sealed area mask and sealing density at pixel level - EEA39 coverage*****Characteristics:**

not specified

Target accuracy:

Pixel level

Threshold accuracy:

1 ha

Dissemination:

TBD

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

Note:

not specified

**Relevant Copernicus product(s):
data:**

High resolution grasslands

in-situ data is required for: Criticality of in-situ

Product generation

Desirable

Links to Inspire annex(s) and theme(s):

TBD

Potential in-situ data providers

GIO Land

Dataset/Product name

Sealed area mask and sealing density

In-situ data requirement:

Simulated atmospheric and land conditions - accuracy 25 km, global coverage

Characteristics:

not specified

Target accuracy:

25 km

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

Latest version available

Frequency:

TBD

Note:

Model output

Relevant Copernicus product(s): data:

Soil moisture products

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

N/A

Potential in-situ data providers

National Aeronautics and Space Administration (GLDAS)

Dataset/Product name

Global Land Data Assimilation System

In-situ data requirement:***Soil information - EEA39 coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Periodic Update

Note:

not specified

**Relevant Copernicus product(s):
data:**

CORINE Land Cover

in-situ data is required for: Criticality of in-situ

Product generation

Useful

Links to Inspire annex(s) and theme(s):

Annex III: Soil

Potential in-situ data providers

Joint Research Centre
Modelling
National authorities in Member states
Joint Research Centre
International Soil Reference and Information Center

Dataset/Product name

Catchment Characterisation and
National data
Soil Geographical Database of Europe
World Soil Information

In-situ data requirement:***Soil moisture - global coverage*****Characteristics:**

Air temperature

Target accuracy:

Not applicable: point measurements needed

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

Latest version available

Frequency:

TBD

Note:

not specified

**Relevant Copernicus product(s):
data:**

Soil moisture products

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

TBD

Potential in-situ data providersNational authorities in Member states
International Soil Moisture Network**Dataset/Product name**National data
Soil moisture

In-situ data requirement:***Surface fluxes - water, energy, carbon - global coverage*****Characteristics:**

Eddy correlation observations

Target accuracy:

Filtered high quality half hourly data can be affected by random errors that have been estimated to be up to 10%

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

Latest version available

Frequency:

TBD

Note:

not specified

**Relevant Copernicus product(s):
data:**

Water bodies products

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

TBD

Potential in-situ data providers

Fluxnet

Global Runoff Data Centre

Dataset/Product name

Data from Fluxnet

Global Runoff Database

In-situ data requirement:***Thematic maps - scale 1: 25 000, EEA39 coverage*****Characteristics:**

Forest areas, forest species, vegetation maps, snow and ice cover, buildings, city maps, settlements, development plans, agricultural datasets/inventories, vineyards, yearly burnt areas, new forest clear-cuts, rangeland map, mineral extraction and dump sites.

Target accuracy:

1: 25 000 or better

Threshold accuracy:

1: 50 000

Dissemination:

TBD

Coverage:

EEA39

Timeliness:

Latest version available

Frequency:

Irregular

Note:

Some thematic maps have special importance in some countries, especially in those which are not applying photo interpretation.

**Relevant Copernicus product(s):
data:**

CORINE Land Cover

in-situ data is required for: Criticality of in-situ

Product generation

Useful

Links to Inspire annex(s) and theme(s):

N/A

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:

Up-welling global solar radiation divided down-welling global solar radiation (albedo) - resolution 3 km², accuracy 5%, global coverage

Characteristics:

Blue Sky albedo [0,1] measurements from albedometers or pyranometers (180° FOV). Spectral Albedo (PAR domain) is desirable

Target accuracy:

Resolution 3 km², target accuracy: 5%

Threshold accuracy:

Resolution 1 km², threshold accuracy 10%

Dissemination:

TBD

Coverage:

Global

Timeliness:

TBD

Frequency:

TBD

Note:

- (i) over homogeneous sites to be representative of 3x3 km²
- (ii) the data quality varies from one site to another

The dataset should be representative of the different biomes and regions over the globe

**Relevant Copernicus product(s):
data:**

Land surface radiation products

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers

World Radiation Monitoring Centre
(BSRN) datasets
Fluxnet
National authorities in Member states
National Oceanic and Atmospheric Administration

Dataset/Product name

Baseline Solar Radiation Network

Data from Fluxnet
National data
SURFRAD datasets

In-situ data requirement:

Vegetation variables (LAI, Fcover, fAPAR) - accuracy 20% for LAI, 10% for Fcover & fAPAR), global coverage

Characteristics:

Sites should be at least 3 km x 3km size, relatively homogeneous at the 1 km scale, and equipped with instruments that measure continuously the target variables

Target accuracy:

Target accuracy: 20% for LAI, 10% for Fcover & fAPAR

Threshold accuracy:

Threshold accuracy 30% for LAI, 20% for Fcover & fAPAR

Dissemination:

TBD

Coverage:

Global

Timeliness:

N/A

Frequency:

TBD

Note:

Acquisition method should be consistent with CEOS/LPV requirements: regular decametric images must be acquired to allow upscaling the local measurements to the whole site. A pool of instruments for continuous measurements (seasonal cycle) is already available. Funding should be allocated to its maintenance and deployment over 10 sites per year.

Global with a stratified sampling strategy according to the distribution of vegetation type and conditions and already existing sites; Sites should be at least 3 km x 3km size (with about 15 to 40 elementary sampling units), relatively homogeneous at the 1 km scale. Ideally around 10 sites per year should be sampled. Sites could move from one year to another.

Relevant Copernicus product(s): data:

Land surface radiation products

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

TBD

Potential in-situ data providers

European Space Agency
National authorities in Member states
Oak Ridge National Laboratory

Dataset/Product name

Earth Observation Campaign Data
National data
SAFARI 2000 vegetation variables

In-situ data requirement:***Zoning maps - scale 1: 5 000, EU27 coverage*****Characteristics:**

Delineation of functional areas
Date of validity of zones

Target accuracy:

1: 5 000

Threshold accuracy:

1: 50 000

Dissemination:

View and Download

Coverage:

EU27

Timeliness:

Latest version available

Frequency:

Periodic Update

Note:

not specified

**Relevant Copernicus product(s):
data:**

Urban Atlas
High resolution impervious surface
High resolution grasslands
High resolution forest layer

in-situ data is required for: Criticality of in-situ

Product generation	Desirable
Product generation	Useful
Product generation	Useful
Product generation	Useful

Links to Inspire annex(s) and theme(s):

Annex III: Land use

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

5 Marine Service

The main objective of the MyOcean2 project is to deliver and operate a rigorous, robust and sustainable Ocean Monitoring and Forecasting system as part of the Copernicus programme and for users of all marine applications like maritime safety, marine resources, marine and coastal environment and climate, seasonal and weather forecasting.

MyOcean2 ensures a controlled continuation and extension of the services and systems already implemented during the MyOcean project which was the pre-operational GMES marine service. To enable the move to full operations as of 2014, MyOcean2 is targeting the prototype operations, and developing the necessary management and coordination environment to provide Copernicus users with continuous access to the Copernicus service products, as well as the interfaces necessary to benefit from independent R&D activities.

MyOcean2 produces and delivers services based on the common-denominator ocean state variables that are required to help meet the needs for information of those responsible for environmental and civil security policy making, assessment and implementation. The MyOcean2 marine service consists of the following activities:

- Data acquisition from the ground segment of the space-based observation systems and in situ networks;
- Acquisition of atmospheric forcing data (winds, temperatures, fluxes) from National Meteorological Services and ECMWF;
- Compilation of these data into quality-controlled datasets at Thematic Data Assembly Centres (sea surface temperature, ocean color, sea level, sea ice, surface winds and fluxes, and in-situ data) suitable for the generation of more extensive data sets for subsequent use, analytical products and assimilation by ocean models.
- Running numerical ocean models in near real time to assimilate thematic data and generate analyses and forecasts to an agreed and generally perpetually repeating cycle. The monitoring and Forecasting Centres operate regional (Arctic, Baltic, North West shelf, Irish-Bay of Biscay and Iberian Coast, Mediterranean Sea and Black Sea) and global models. The centres will also operate offline to produce reanalysis /hindcasts.
- Preparation and delivery of products suitable for external service provision.
- Preparation phase to a fully operational service as from 2014 end.⁶

⁶ Taken from the service website: <http://www.myocean.eu/web/3-objective.php>

In-situ data requirement:***Aerosol data - Global Ocean, European area*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

N/A

Frequency:

N/A

Note:

Coverage - Global ocean, European area

AERONET in-situ data (sites Abu_Al_Bukhoosh, COVE_SEAPRISM, Gustav_Dalen_Tower, Helsinki_Lighthouse, MVCO, Venice)

**Relevant Copernicus product(s):
data:**

Ocean colour - Global Ocean, European area

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Atmospheric conditions

Annex III: Environmental monitoring Facilities

Potential in-situ data providers

AErosol RObotic NETwork

National authorities in Member states

Dataset/Product name

AERONET - aerosol optical depth

National data

In-situ data requirement:***Biogeochemical - delayed mode, Arctic*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Arctic

Timeliness:**Frequency:**

N/A

Note:

Historical data provided via INS TAC and SeaDataNet

**Relevant Copernicus product(s):
data:**

Arctic Ocean physics reanalysis

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

In-situ Thematic Assembly Centre

SeaDataNet

National authorities in Member states

Dataset/Product name

Data from INS TAC

Data from SeaDataNet

National data

In-situ data requirement:***Biogeochemical - delayed mode, Atlantic North West shelf*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

North Atlantic,

Timeliness:

N/A

Frequency:

Daily

Note:

not specified

**Relevant Copernicus product(s):
data:**Atlantic North West shelf physics and bio-
geochemical reanalysis**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersIn-situ Thematic Assembly Centre
SeaDataNet
National authorities in Member states**Dataset/Product name**Data from INS TAC
Data from SeaDataNet
National data

In-situ data requirement:***Biogeochemical - delayed mode, Mediterranean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Mediterranean Sea

Timeliness:

TBD

Frequency:

TBD

Note:

Measurements requested from 1985 to present

**Relevant Copernicus product(s):
data:**

Mediterranean Sea physics reanalysis

in-situ data is required for: Criticality of in-situ

Calibration and validation

Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

In-situ Thematic Assembly Centre

SeaDataNet

National authorities in Member states

Dataset/Product name

Data from INS TAC

Data from SeaDataNet

National data

In-situ data requirement:***Biogeochemical - near real time, Arctic*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

NRT Service

Coverage:

Arctic

Timeliness:

N/A

Frequency:

Weekly

Note:

not specified

**Relevant Copernicus product(s):
data:**Arctic Ocean physics and bio-geochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersArctic Regional Ocean Observing System
European Global Ocean Observing System
National authorities in Member states**Dataset/Product name**Data from Arctic ROOS
Data from EuroGOOS
National data

In-situ data requirement:***Biogeochemical - real time, Atlantic North West shelf*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

North Atlantic,

Timeliness:

N/A

Frequency:

Daily

Note:

not specified

**Relevant Copernicus product(s):
data:**

Atlantic North West shelf physics and bio-geochemical analysis and forecast

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersEuropean Global Ocean Observing System
North-West Shelf Operational Oceanographic System
National authorities in Member states**Dataset/Product name**Data from EuroGOOS
Data from NOOS
National data

In-situ data requirement:***Biogeochemical - real time, Baltic Sea*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Baltic Sea

Timeliness:

N/A

Frequency:

Daily

Note:

not specified

**Relevant Copernicus product(s):
data:**Baltic Sea physics and biogeochemical analysis
and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersBaltic Operational Oceanographic System
European Global Ocean Observing System
National authorities in Member states**Dataset/Product name**Data from BOOS
Data from EuroGOOS
National data

In-situ data requirement:***Biogeochemical - real time, Black Sea*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Black Sea

Timeliness:

TBD

Frequency:

Daily

Note:

not specified

**Relevant Copernicus product(s):
data:**Black Sea physics and biogeochemical analysis
and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersBlack Sea Global Ocean Observing System
European Global Ocean Observing System
National authorities in Member states**Dataset/Product name**Data from BlackSea GOOS
Data from EuroGOOS
National data

In-situ data requirement:***Biogeochemical - real time, Mediterranean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Mediterranean Sea

Timeliness:

TBD

Frequency:

Daily

Note:

not specified

**Relevant Copernicus product(s):
data:**Mediterranean area physics and biogeochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersEuropean Global Ocean Observing System
Mediterranean Operational Oceanography Network
National authorities in Member states**Dataset/Product name**Data from EuroGOOS
Data from MOON
National data

In-situ data requirement:***Current - real time, Atlantic Iberic Biscay Irish area*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Atlantic Iberic

Timeliness:

N/A

Frequency:

Daily

Note:

Currents from the Puertos del Estado observation network.

Currents from the moorings

**Relevant Copernicus product(s):
data:**Atlantic Iberic Biscay Irish area physics and
biogeochemical analysis and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersEuropean Global Ocean Observing System
Ireland-Biscay-Iberia Regional Operational Oceanographic
System
National authorities in Member states**Dataset/Product name**Data from EuroGOOS
Data from IBI-ROOS
National data

In-situ data requirement:***Current - real time, Atlantic North West shelf*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

North Atlantic,

Timeliness:

N/A

Frequency:

Daily

Note:

not specified

**Relevant Copernicus product(s):
data:**

Atlantic North West shelf physics and bio-geochemical analysis and forecast

in-situ data is required for: Criticality of in-situ

Calibration and validation

Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersEuropean Global Ocean Observing System
North-West Shelf Operational Oceanographic System
National authorities in Member states**Dataset/Product name**Data from EuroGOOS
Data from NOOS
National data

In-situ data requirement:***Current - real time, Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

N/A

Frequency:

N/A

Note:

In-situ observations gathered by Coriolis /INS TAC

**Relevant Copernicus product(s):
data:**Global Ocean physics and bio-geochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Data from commercial and research vessels - bio-geochemical - Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:**Coverage:**

Global

Timeliness:

N/A

Frequency:

Weekly

Note:

In-situ observations gathered by Coriolis and NIVA/INS TAC

**Relevant Copernicus product(s):
data:**Global Ocean physics and bio-geochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersEUROFLEETS
European Global Ocean Observing System
Global Ocean Surface Underway Data Project
National authorities in Member states**Dataset/Product name**Data from EUROFLEETS
Data from EuroGOOS
Data from GOSUD
National data

In-situ data requirement:***Data from commercial and research vessels - salinity - Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:**Coverage:**

Global

Timeliness:

N/A

Frequency:

Daily

Note:

In-situ observations gathered by Coriolis and NIVA/INS TAC

**Relevant Copernicus product(s):
data:**Global Ocean physics and bio-geochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

EUROFLEETS

European Global Ocean Observing System

Global Ocean Surface Underway Data Project

National authorities in Member states

Dataset/Product name

Data from EUROFLEETS

Data from EuroGOOS

Data from GOSUD

National data

In-situ data requirement:***Data from commercial and research vessels - temperature -Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:**Coverage:**

Global

Timeliness:

N/A

Frequency:

Daily

Note:

In-situ observations gathered by Coriolis and NIVA/INS TAC

**Relevant Copernicus product(s):
data:**Global Ocean physics and bio-geochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersEUROFLEETS
European Global Ocean Observing System
Global Ocean Surface Underway Data Project
National authorities in Member states**Dataset/Product name**Data from EUROFLEETS
Data from EuroGOOS
Data from GOSUD
National data

In-situ data requirement:***Drifting buoys - current - Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Acquisition

Coverage:

Global

Timeliness:

N/A

Frequency:

Single

Note:

Surface velocities

**Relevant Copernicus product(s):
data:**Global observed Ocean physics analysis and
reanalysis**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersAtlantic Oceanographic and Meteorological Laboratory
National authorities in Member states**Dataset/Product name**Data from NOAA/AOML
National data

In-situ data requirement:***Historical sea surface temperature in-situ measurements - global coverage*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

N/A

Frequency:

N/A

Note:

Historical In-situ SST measurements from the COADS dataset archived at the Met Office

**Relevant Copernicus product(s):
data:**

Sea surface temperature - Global Ocean

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

International Comprehensive Ocean-Atmosphere Data Set
 Sea surface temperature Thematic Assembly Centre
 National authorities in Member states

Dataset/Product name

Data from COADS
 Data from SST TAC
 National data

In-situ data requirement:***Multi disciplinary profiles - biochemical - real time, Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

N/A

Frequency:

Daily

Note:

In-situ observations gathered by Coriolis /INS TAC

**Relevant Copernicus product(s):
data:**Global Ocean physics and bio-geochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

EuroSites/OceanSites

National authorities in Member states

Dataset/Product name

Data from EuroSites/OceanSites

National data

In-situ data requirement:***Multi disciplinary profiles - salinity - real time, Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

N/A

Frequency:

Daily

Note:

In-situ observations gathered by Coriolis /INS TAC

**Relevant Copernicus product(s):
data:**Global Ocean physics and bio-geochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

EuroSites/OceanSites

National authorities in Member states

Dataset/Product name

Data from EuroSites/OceanSites

National data

In-situ data requirement:***Multi disciplinary profiles - temperature - real time, Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

N/A

Frequency:

Daily

Note:

In-situ observations gathered by Coriolis /INS TAC

**Relevant Copernicus product(s):
data:**Global Ocean physics and bio-geochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

EuroSites/OceanSites

National authorities in Member states

Dataset/Product name

Data from EuroSites/OceanSites

National data

In-situ data requirement:***Ocean colour in-situ data - Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

N/A

Frequency:

N/A

Note:

BOUSSOLE buoy and SPMR in-situ data

SeaBASS NOMAD in-situ data

MERis MATCHUP In-situ Database

Coverage - Global ocean, European, Arctic, Baltic areas

**Relevant Copernicus product(s):
data:**Ocean colour - Global Ocean, European, Arctic,
Baltic areas**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

IFREMER water quality observing network

In-situ Thematic Assembly Centre

SeaBASS

SeaDataNet

National authorities in Member states

Dataset/Product nameData from IFREMER water quality
observing network

Data from INS TAC

Data from SeaBASS

Data from SeaDataNet

National data

In-situ data requirement:***Ocean current - Atlantic North West shelf*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

North Atlantic,

Timeliness:

N/A

Frequency:

N/A

Note:

Drifters and moored instrument data

**Relevant Copernicus product(s):
data:**

Atlantic North West shelf physics and bio-geochemical reanalysis

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersIn-situ Thematic Assembly Centre
North-West Shelf Operational Oceanographic System
National authorities in Member states**Dataset/Product name**Data from INS TAC
Data from NOOS
National data

In-situ data requirement:***Ocean current - delayed mode, Black Sea*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Black Sea

Timeliness:

TBD

Frequency:

TBD

Note:

not specified

**Relevant Copernicus product(s):
data:**

Black Sea physics reanalysis

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersIn-situ Thematic Assembly Centre
SeaDataNet
National authorities in Member states**Dataset/Product name**Data from INS TAC
Data from SeaDataNet
National data

In-situ data requirement:***Ocean current - real time, Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

N/A

Frequency:

Weekly

Note:

Obtained from drifting buoys

**Relevant Copernicus product(s):
data:**Global Ocean physics and bio-geochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersData Buoy Cooperation Panel
National authorities in Member states**Dataset/Product name**Data from DBCP
National data

In-situ data requirement:***Ocean surface velocities - current - Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:View and Download
Acquisition**Coverage:**

Global

Timeliness:

N/A

Frequency:

Single

Note:

Velocities derived from altimetry, drifters and ekman drift

**Relevant Copernicus product(s):
data:**Global observed Ocean physics analysis and
reanalysis**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersAtlantic Oceanographic and Meteorological Laboratory
National authorities in Member states**Dataset/Product name**Data from NOAA/AOML
National data

In-situ data requirement:***Ocean surface velocities - salinity - Global Ocean*****Characteristics:**

Data from drifting buoys

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:View and Download
Acquisition**Coverage:**

Global

Timeliness:

N/A

Frequency:

Single

Note:

not specified

**Relevant Copernicus product(s):
data:**Global observed Ocean physics analysis and
reanalysis**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Ocean surface velocities - temperature - Global Ocean*****Characteristics:**

Data from drifting buoys

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:View and Download
Acquisition**Coverage:**

Global

Timeliness:

N/A

Frequency:

Single

Note:

not specified

**Relevant Copernicus product(s):
data:**Global observed Ocean physics analysis and
reanalysis**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Oxygen, chlorophyll - real time, Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

N/A

Frequency:

N/A

Note:

In-situ observations gathered by Coriolis /INS TAC

**Relevant Copernicus product(s):
data:**Global Ocean physics and bio-geochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Desirable

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

National authorities in Member states

Dataset/Product name

National data

In-situ data requirement:***Salinity profiles - delayed mode, Arctic*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Arctic

Timeliness:

N/A

Frequency:

N/A

Note:

All data provided via INS TAC and SeaDataNet

Data required from 1988 to present

**Relevant Copernicus product(s):
data:**

Arctic Ocean physics reanalysis

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

In-situ Thematic Assembly Centre

SeaDataNet

National authorities in Member states

Dataset/Product name

Data from INS TAC

Data from SeaDataNet

National data

In-situ data requirement:***Salinity profiles - delayed mode, Atlantic North West shelf*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

North Atlantic,

Timeliness:

N/A

Frequency:

N/A

Note:

not specified

**Relevant Copernicus product(s):
data:**

Atlantic North West shelf physics and bio-geochemical reanalysis

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersIn-situ Thematic Assembly Centre
SeaDataNet
National authorities in Member states**Dataset/Product name**Data from INS TAC
Data from SeaDataNet
National data

In-situ data requirement:***Salinity profiles - delayed mode, Baltic Sea*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Baltic Sea

Timeliness:

N/A

Frequency:

Daily

Note:

not specified

**Relevant Copernicus product(s):
data:**

Baltic Sea physics reanalysis

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

In-situ Thematic Assembly Centre
SeaDataNet
National authorities in Member states

Dataset/Product name

Data from INS TAC
Data from SeaDataNet
National data

In-situ data requirement:***Salinity profiles - delayed mode, Black Sea*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Black Sea

Timeliness:

TBD

Frequency:

TBD

Note:

not specified

**Relevant Copernicus product(s):
data:**

Black Sea physics reanalysis

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

In-situ Thematic Assembly Centre
SeaDataNet
National authorities in Member states

Dataset/Product name

Data from INS TAC
Data from SeaDataNet
National data

In-situ data requirement:***Salinity profiles - delayed mode, Mediterranean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Mediterranean Sea

Timeliness:

TBD

Frequency:

TBD

Note:

Measurements requested from 1985 to present

**Relevant Copernicus product(s):
data:**

Mediterranean Sea physics reanalysis

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

In-situ Thematic Assembly Centre

SeaDataNet

National authorities in Member states

Dataset/Product name

Data from INS TAC

Data from SeaDataNet

National data

In-situ data requirement:***Salinity profiles - delayed time, Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:View and Download
Acquisition**Coverage:**

Global

Timeliness:

N/A

Frequency:

Single

Note:

In-situ observations from the CORA data base: historical data provided via INS TAC and SeaDataNet

**Relevant Copernicus product(s):
data:**Global observed Ocean physics analysis and
reanalysis**in-situ data is required for: Criticality of in-situ**

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersIn-situ Thematic Assembly Centre
SeaDataNet
National authorities in Member states**Dataset/Product name**Data from INS TAC
Data from SeaDataNet
National data

In-situ data requirement:***Salinity profiles - near real time, Arctic*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

NRT Service

Coverage:

Arctic

Timeliness:

N/A

Frequency:

Weekly

Note:

CORIOLIS data N,B (Argo, XBTs, CTDs, moorings)

**Relevant Copernicus product(s):
data:**Arctic Ocean physics and bio-geochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersArctic Regional Ocean Observing System
European Global Ocean Observing System
National authorities in Member states**Dataset/Product name**Data from Arctic ROOS
Data from EuroGOOS
National data

In-situ data requirement:***Salinity profiles - real time, Atlantic Iberic Biscay Irish area*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Atlantic Iberic

Timeliness:

N/A

Frequency:

Daily

Note:

not specified

**Relevant Copernicus product(s):
data:**Atlantic Iberic Biscay Irish area physics and
biogeochemical analysis and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersEuropean Global Ocean Observing System
Ireland-Biscay-Iberia Regional Operational Oceanographic
System
National authorities in Member states**Dataset/Product name**Data from EuroGOOS
Data from IBI-ROOS
National data

In-situ data requirement:***Salinity profiles - real time, Atlantic North West shelf*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

North Atlantic,

Timeliness:

N/A

Frequency:

Daily

Note:

not specified

**Relevant Copernicus product(s):
data:**

Atlantic North West shelf physics and bio-geochemical analysis and forecast

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersEuropean Global Ocean Observing System
North-West Shelf Operational Oceanographic System
National authorities in Member states**Dataset/Product name**Data from EuroGOOS
Data from NOOS
National data

In-situ data requirement:***Salinity profiles - real time, Baltic Sea*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

Client Service

Coverage:

Baltic Sea

Timeliness:

TBD

Frequency:

TBD

Note:

Online validation if possible

**Relevant Copernicus product(s):
data:**Baltic Sea physics and biogeochemical analysis
and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersBaltic Operational Oceanographic System
European Global Ocean Observing System
National authorities in Member states**Dataset/Product name**Data from BOOS
Data from EuroGOOS
National data

In-situ data requirement:***Salinity profiles - real time, Black Sea*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Black Sea

Timeliness:

N/A

Frequency:

Irregular

Note:

IFREMER-BREST DT APEX & drifters buoys T,S profiles, SST, SSS, U,V & buoys coordinates, requested via IFREMER interactive interface and then acquired via FTP.

Observations frequency: at least twice per year, when BS external products DT mode validation will be executed.

**Relevant Copernicus product(s):
data:**

Black Sea physics and biogeochemical analysis
and forecast

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

Black Sea Global Ocean Observing System
European Global Ocean Observing System
National authorities in Member states

Dataset/Product name

Data from BlackSea GOOS
Data from EuroGOOS
National data

In-situ data requirement:***Salinity profiles - real time, Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

1 day

Frequency:

Daily

Note:

In-situ observations gathered by Coriolis in Brest

**Relevant Copernicus product(s):
data:**Global Ocean physics and bio-geochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

Euro Argo/Argo

National authorities in Member states

Dataset/Product name

Data from Euro Argo/Argo

National data

In-situ data requirement:***Salinity profiles - real time, Mediterranean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Mediterranean Sea

Timeliness:

TBD

Frequency:

Daily

Note:

not specified

**Relevant Copernicus product(s):
data:**Mediterranean area physics and biogeochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersEuropean Global Ocean Observing System
Mediterranean Operational Oceanography Network
National authorities in Member states**Dataset/Product name**Data from EuroGOOS
Data from MOON
National data

In-situ data requirement:
Sea ice - Baltic Sea

Characteristics:
not specified

Target accuracy:
not specified

Threshold accuracy:
not specified

Dissemination:
View and Download

Coverage:
Baltic Sea

Timeliness:
N/A

Frequency:
N/A

Note:
Ground truth from observation stations, Finnish and Swedish icebreakers, and ships is used.
Frequency - when consecutive SAR data is available during the Baltic Sea ice season.

Relevant Copernicus product(s):
data:

Sea ice - Baltic Sea

in-situ data is required for: Criticality of in-situ

Calibration and validation Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

Baltic Monitoring and Forecasting Centre
Baltic Operational Oceanographic System
European Global Ocean Observing System
National authorities in Member states

Dataset/Product name

Data from Baltic MFC
Data from BOOS
Data from EuroGOOS
National data

In-situ data requirement:***Sea ice - Global Ocean, Arctic*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Global

Timeliness:

N/A

Frequency:

N/A

Note:

Any in-situ drift buoy data available

Coverage - Global Ocean, Arctic

**Relevant Copernicus product(s):
data:**

Sea ice - Arctic

Sea ice - Global Ocean

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

International Arctic Buoy Programme

National authorities in Member states

Dataset/Product name

Data from IABP

National data

In-situ data requirement:***Sea level - delayed mode, Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

TBD

Frequency:

N/A

Note:

Tide gauge data

**Relevant Copernicus product(s):
data:**Global observed Ocean physics analysis and
reanalysis**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersEuropean Global Ocean Observing System
Global Sea Level Observing System
National authorities in Member states**Dataset/Product name**Data from EuroGOOS
Data from GLOSS
National data

In-situ data requirement:***Sea level - real time, Atlantic Iberic Biscay Irish area*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Atlantic Iberic

Timeliness:

TBD

Frequency:

Daily

Note:

Tide gauges data including the Puertos del Estado observation network

**Relevant Copernicus product(s):
data:**Atlantic Iberic Biscay Irish area physics and
biogeochemical analysis and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersEuropean Global Ocean Observing System
Ireland-Biscay-Iberia Regional Operational Oceanographic
System
National authorities in Member states**Dataset/Product name**Data from EuroGOOS
Data from IBI-ROOS
National data

In-situ data requirement:***Sea level - real time, Atlantic North West shelf*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

North Atlantic,

Timeliness:

N/A

Frequency:

Daily

Note:

not specified

**Relevant Copernicus product(s):
data:**

Atlantic North West shelf physics and bio-geochemical analysis and forecast

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersEuropean Global Ocean Observing System
North-West Shelf Operational Oceanographic System
National authorities in Member states**Dataset/Product name**Data from EuroGOOS
Data from NOOS
National data

In-situ data requirement:***Sea level - real time, Baltic Sea*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

Client Service

Coverage:

Baltic Sea

Timeliness:**Frequency:**

TBD

Note:

Tide gauges data

Online validation if possible

**Relevant Copernicus product(s):
data:**Baltic Sea physics and biogeochemical analysis
and forecast**in-situ data is required for: Criticality of in-situ**

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersBaltic Operational Oceanographic System
European Global Ocean Observing System
National authorities in Member states**Dataset/Product name**Data from BOOS
Data from EuroGOOS
National data

In-situ data requirement:***Sea level - real time, Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

TBD

Frequency:

N/A

Note:

Data from tide gauges

Coverage besides Global Ocean: Baltic Sea, Northwest shelf, IBI

**Relevant Copernicus product(s):
data:**Global Ocean physics and bio-geochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersEuropean Global Ocean Observing System
Global Sea Level Observing System
National authorities in Member states**Dataset/Product name**Data from EuroGOOS
Data from GLOSS
National data

In-situ data requirement:***Sea level - real time, Global Ocean and European seas*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

N/A

Frequency:

N/A

Note:

Tide gauge data

Coverage - Global ocean and European seas

**Relevant Copernicus product(s):
data:**

Sea level - Mediterranean Sea

Sea level - Arctic, IBI, Black Sea

Sea level - Global Ocean

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Calibration and validation

Essential

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

Global Sea Level Observing System

In-situ Thematic Assembly Centre

National authorities in Member states

Dataset/Product name

Data from GLOSS

Data from INS TAC

National data

In-situ data requirement:***Sea surface temperature - Global Ocean and regional seas*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

NRT Service

Coverage:

Global

Timeliness:

N/A

Frequency:

N/A

Note:

NRT in-situ sea surface temperature measurements exchanged on the WMO GTS

**Relevant Copernicus product(s):
data:****in-situ data is required for: Criticality of in-situ**

Sea surface temperature - Mediterranean Sea and Black Sea	Product generation	Essential
Sea surface temperature - North West shelf	Product generation	Essential
Sea surface temperature - Global Ocean	Product generation	Essential
Sea surface temperature - European area	Product generation	Essential
Sea surface temperature - Baltic Sea	Product generation	Essential
Sea surface temperature - Arctic Sea	Product generation	Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

Data Buoy Cooperation Panel
 EUCOS Surface Marine Programme
 European Global Ocean Observing System
 In-situ Thematic Assembly Centre
 National authorities in Member states

Dataset/Product name

Data from DBCP
 Data from E-SURFMAR
 Data from EuroGOOS
 Data from INS TAC
 National data

In-situ data requirement:***Temperature - real time, Atlantic North West shelf*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

North Atlantic,

Timeliness:

N/A

Frequency:

Daily

Note:

not specified

**Relevant Copernicus product(s):
data:**

Atlantic North West shelf physics and bio-geochemical analysis and forecast

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersEuropean Global Ocean Observing System
North-West Shelf Operational Oceanographic System
National authorities in Member states**Dataset/Product name**Data from EuroGOOS
Data from NOOS
National data

In-situ data requirement:***Temperature profiles - delayed mode, Arctic*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Arctic

Timeliness:**Frequency:**

N/A

Note:

Historical data provided via INS TAC and SeaDataNet

Data required from 1988 to present

**Relevant Copernicus product(s):
data:**

Arctic Ocean physics reanalysis

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

In-situ Thematic Assembly Centre

SeaDataNet

National authorities in Member states

Dataset/Product name

Data from INS TAC

Data from SeaDataNet

National data

In-situ data requirement:***Temperature profiles - delayed mode, Atlantic North West shelf*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

North Atlantic,

Timeliness:

N/A

Frequency:

Daily

Note:

not specified

**Relevant Copernicus product(s):
data:**

Atlantic North West shelf physics and bio-geochemical reanalysis

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersIn-situ Thematic Assembly Centre
SeaDataNet
National authorities in Member states**Dataset/Product name**Data from INS TAC
Data from SeaDataNet
National data

In-situ data requirement:***Temperature profiles - delayed mode, Baltic Sea*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Baltic Sea

Timeliness:

N/A

Frequency:

Daily

Note:

not specified

**Relevant Copernicus product(s):
data:**

Baltic Sea physics reanalysis

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

In-situ Thematic Assembly Centre
SeaDataNet
National authorities in Member states

Dataset/Product name

Data from INS TAC
Data from SeaDataNet
National data

In-situ data requirement:***Temperature profiles - delayed mode, Black Sea*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Black Sea

Timeliness:

N/A

Frequency:

Irregular

Note:

Observations frequency: at least twice per year, when BS external products DT mode validation will be executed.

**Relevant Copernicus product(s):
data:**

Black Sea physics reanalysis

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

In-situ Thematic Assembly Centre

SeaDataNet

National authorities in Member states

Dataset/Product name

Data from INS TAC

Data from SeaDataNet

National data

In-situ data requirement:***Temperature profiles - delayed mode, Mediterranean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Mediterranean Sea

Timeliness:

TBD

Frequency:

TBD

Note:

Measurements requested from 1985 to present

**Relevant Copernicus product(s):
data:**

Mediterranean Sea physics reanalysis

in-situ data is required for: Criticality of in-situ

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

In-situ Thematic Assembly Centre
 Mediterranean Operational Oceanography Network
 National authorities in Member states

Dataset/Product name

Data from INS TAC
 Data from MOON
 National data

In-situ data requirement:***Temperature profiles - delayed time, Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:View and Download
Acquisition**Coverage:**

Global

Timeliness:

N/A

Frequency:

Single

Note:

In-situ observations from the CORA data base: historical data provided via INS TAC and SeaDataNet

**Relevant Copernicus product(s):
data:**Global observed Ocean physics analysis and
reanalysis**in-situ data is required for: Criticality of in-situ**

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersIn-situ Thematic Assembly Centre
SeaDataNet
National authorities in Member states**Dataset/Product name**Data from INS TAC
Data from SeaDataNet
National data

In-situ data requirement:***Temperature profiles - near real time, Arctic*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

NRT Service

Coverage:

Arctic

Timeliness:

N/A

Frequency:

Weekly

Note:

CORIOLIS data N,B (Argo, XBTs, CTDs, moorings)

**Relevant Copernicus product(s):
data:**Arctic Ocean physics and bio-geochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersArctic Regional Ocean Observing System
European Global Ocean Observing System
National authorities in Member states**Dataset/Product name**Data from Arctic ROOS
Data from EuroGOOS
National data

In-situ data requirement:***Temperature profiles - real time, Atlantic Iberic Biscay Irish area*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

View and Download

Coverage:

Atlantic Iberic

Timeliness:

N/A

Frequency:

Daily

Note:

not specified

**Relevant Copernicus product(s):
data:**Atlantic Iberic Biscay Irish area physics and
biogeochemical analysis and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersEuropean Global Ocean Observing System
Ireland-Biscay-Iberia Regional Operational Oceanographic
System
National authorities in Member states**Dataset/Product name**Data from EuroGOOS
Data from IBI-ROOS
National data

In-situ data requirement:***Temperature profiles - real time, Baltic Sea*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

Client Service

Coverage:

Baltic Sea

Timeliness:**Frequency:**

N/A

Note:

Online validation if possible

**Relevant Copernicus product(s):
data:**Baltic Sea physics and biogeochemical analysis
and forecast**in-situ data is required for: Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersBaltic Operational Oceanographic System
European Global Ocean Observing System
National authorities in Member states**Dataset/Product name**Data from BOOS
Data from EuroGOOS
National data

In-situ data requirement:***Temperature profiles - real time, Black Sea*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Black Sea

Timeliness:

N/A

Frequency:

Irregular

Note:

IFREMER-BREST DT APEX & drifters buoys, T,S profiles, SST, SSS, U,V & buoys coordinates, requested via IFREMER interactive interface and then acquired via FTP.

Observations frequency: at least twice per year, when BS external products DT mode validation will be executed.

**Relevant Copernicus product(s):
data:**

Black Sea physics and biogeochemical analysis
and forecast

in-situ data is required for: Criticality of in-situ

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

Black Sea Global Ocean Observing System
European Global Ocean Observing System
National authorities in Member states

Dataset/Product name

Data from BlackSea GOOS
Data from EuroGOOS
National data

In-situ data requirement:***Temperature profiles - real time, Mediterranean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Mediterranean Sea

Timeliness:

TBD

Frequency:

Daily

Note:

not specified

**Relevant Copernicus product(s):
data:**Mediterranean area physics and biogeochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providersEuropean Global Ocean Observing System
Mediterranean Operational Oceanography Network
National authorities in Member states**Dataset/Product name**Data from EuroGOOS
Data from MOON
National data

In-situ data requirement:***Temperature profiles - real time, timeliness 1 day, Global Ocean*****Characteristics:**

not specified

Target accuracy:

not specified

Threshold accuracy:

not specified

Dissemination:

TBD

Coverage:

Global

Timeliness:

1 day

Frequency:

Daily

Note:

In-situ observations gathered by Coriolis in Brest

**Relevant Copernicus product(s):
data:**Global Ocean physics and bio-geochemical
analysis and forecast**in-situ data is required for: Criticality of in-situ**

Product generation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Oceanographic geographical features

Potential in-situ data providers

Euro Argo/Argo

National authorities in Member states

Dataset/Product name

Data from Euro Argo/Argo

National data

In-situ data requirement:
Wind - Global Ocean

Characteristics:
not specified

Target accuracy:
not specified

Threshold accuracy:
not specified

Dissemination:
View and Download

Coverage:
Global

Timeliness:
N/A

Frequency:
Monthly

Note:
In-situ drift buoys

Relevant Copernicus product(s):
data:

Wind - Global Ocean

in-situ data is required for: **Criticality of in-situ**

Calibration and validation

Essential

Links to Inspire annex(s) and theme(s):

Annex III: Meteorological geographical features

Potential in-situ data providers

The Network of European Meteorological Services
National authorities in Member states

Dataset/Product name

Meteorological observations
National data