**Horizon 2020**

H2020-EO-2014 New ideas for Earth-relevant Space Applications

EUSTACE

(Grant Agreement 640171)



EU Surface Temperature for All Corners of Earth

Deliverable D*4.3*

*Data Management Plan*

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| --- | --- | --- |
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| Lead Beneficiary | *STFC* | |
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# **1. Executive Summary**

The purpose of the Data Management Plan (DMP) is to provide an analysis of the main elements of the data management policy that will be used by the EUSTACE partners with regard to all the datasets that will be generated by the project. The DMP is not a fixed document, but evolves during the lifespan of the project. The DMP is intended to set up a coherent approach to data issues pertaining to EUSTACE.

The DMP should address the points below on a dataset by dataset basis and should reflect the current status of plans laid by i the consortium in relation to data that will be produced and/or collected.

The data management objectives are to ensure that:

* A high quality documented data archive is created.
* Appropriate data support is provided to the data users and creators.
* Data are made available to users in a timely fashion.
* Academic credit for data creation is given.
* Conditions of use, access and deposit are clearly stated and do not infringe on the data creators' rights.
* Potentially scientifically valuable data are kept for reuse in the long-term and by other disciplines.
* Results are recorded and can be checked and validated.
* Risks to project data are managed.
* Appropriate preservation strategies are employed.
* Statements of status of data holdings are visible and support the scientific endeavours of the consortium.

This document is an agreed record of the data management needs and issues within the project. It defines who is responsible for data management activities both within data centres and by the data creators. It lists the expected data products and provides a mechanism for recording and agreeing changes. Other data needs and issues are also laid out so that problems can be identified early. It includes conditions of use and deposit to clearly express the ownership, responsibilities and rights associated with the data.

This data management plan has been agreed between the STFC CEDA[[1]](#footnote-1) Data Centre and the EUSTACE Science Coordinator Nick Rayner (Met Office) and EUSTACE project management team. Changes to the document will be recorded and data management tables will be updated on the EUSTACE wiki[[2]](#footnote-2) to ensure visibility to all project partners.

***Important Note ! :*** Version 1 of the Data Management Plan reflects the state of affairs at the month 5 early data acquisition phase of the project. Much of the information within the data management tables remains to be filled out in later phases of the project.

The project anticipates that it will manage in excess of 40 complex high volume Earth Observation (EO) and observational data sets that will be engaged with by multiple international partners within a collaborative HPC environment. To that end a new data management structure was created by CEDA for evolving H2020 data intensive projects. The new structure honours all constituent elements of the H2020 Open Data Pilot – Data Management Plan template, but also incorporates risk management, review procedure and exposes the acquisition/archival/preservation status of project data. This data management will also act as input to new CCSDS[[3]](#footnote-3) Information Curation standards development activities and the RDA[[4]](#footnote-4) Active Data Management Plan Working Group in which CEDA is engaged with the UK Digital Curation Centre[[5]](#footnote-5).

2. Project Objectives

With this deliverable, the project has contributed to the achievement of the following objectives (DOA, Section B1.1):

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Objective | Yes | No |
| 1 | Intensively develop the hitherto immature use of Earth Observation estimates of Earth’s surface **skin** temperature to enable new Climate Data Records of the surface **air** temperature Essential Climate Variable (ECV) to be created, for all locations over all surfaces of Earth (i.e. land, ocean, ice and lakes), for every day since 1850. EUSTACE will achieve this by: combining information estimated from multiple satellites with surface air temperature measurements made *in situ* and **creating complete analyses** of surface air temperature, through the application of novel statistical in-filling methods. |  | X |
| 2 | Integrate these new daily surface air temperature Climate Data Records into a range of applications in Earth System Science and Climate Services and research, amongst others. EUSTACE will achieve this via the active and continuous engagement of trail-blazer users, and the provision of products through already-existing user community data portals and service mechanisms, in standard formats. | X |  |
| 3 | Undertake and report detailed research into the relationships between surface skin temperature estimated from Earth Observation satellite measurements and surface air temperature observed *in situ* by conventional measurements, over all surfaces of the Earth, including the polar regions. This is likely to provide information useful for refining coupling in Earth system models. |  | X |
| 4 | Create a sustainable, automated system at an appropriate level of maturity for the potential production of the products beyond the lifetime of the project. To enable this, EUSTACE will also identify Earth Observation and conventional data streams that could be used to update the surface air temperature Climate Data Records in the future, including those from Sentinel missions. |  | X |
| 5 | Extensively validate the new surface air temperature Climate Data Records against independent, surface-based reference data, sourced by the project for this purpose. | X |  |
| 6 | Develop and report new, consistent, validated estimates of uncertainty both in already-existing Earth Observation surface skin temperature estimates and in the new surface air temperature Climate Data Records, at all locations and times across the Earth’s surface. | X |  |
| 7 | Develop links with related activities within Europe and beyond to help to ensure the execution of a joined-up work programme, the Copernicus Services and to enable the provision of requirements for the future surface skin temperature and surface air temperature observing system. |  | X |
| 8 | Other – not directly linked to one of the above objectives | X |  |

|  |  |
| --- | --- |
| 3. Project Information | |
| Project Name | EUSTACE |
| Description of Work | The aim of EUSTACE is to produce a fully-global daily analysis (or ensemble of analyses) of surface air temperature since 1850, integrating different ground-based and satellite-borne data types. |
| Grant Reference(s) | 640171 (H2020) |
| Science Coordinator | Nick Rayner |
| Start/End Dates | Jan. 1, 2015 to June 30, 2018 |
|  | |
| 4. Organisation | |
| Nominated Data Centre | STFC Centre for Environmental Data Archival (CEDA) |
| Data Centre Contact | Ag Stephens |
| Project Data Contact | Nick Rayner – Met Office |
| Any other team members with responsibility for data | WP 1: Observation Integration: (Jacob Hoyer, DMI)  WP 2: Dataset construction (John Kennedy, Met Office)  WP 3: Validation and Intercomparison (Darren Ghent, Uni of Leicester)   WP 4: Janette Bessembinder (KNMI) & Ag Stephens (STFC)   WP 5: Scientific Coordination of EUSTACE (Nick Rayner, MO)  WP 6: Project management (Katie Herring, MO) |

# 5. Formal Commitments to Data Management

The EUSTACE project has made the following formal data management commitments described in the project grant agreement:

“The final products will be curated in the long-term CEMS-Academic archive[[6]](#footnote-6) managed by STFC[[7]](#footnote-7) CEDA. The data will be kept beyond the lifetime of the project alongside many complementary data sets including CMIP5[[8]](#footnote-8) and ESA SST CCI[[9]](#footnote-9). It will be made visible to end-users through both the local (CEDA) and international (ESGF[[10]](#footnote-10)) services. EUSTACE will make use of systems created under the FP7 CLIP-C[[11]](#footnote-11) project to develop an approach to add observation-based climate data sets to the ESGF infrastructure. Through both local and international services, users will be able to find and download whole files. OPeNDap[[12]](#footnote-12) functionality, providing remote sub-setting, is also available through this route. Other generic services being developed for ESGF and CEDA will be able to provide additional interfaces to EUSTACE data.”

“Having captured the data files and the descriptive metadata during EUSTACE, the final products will benefit from integration with the core data management and delivery systems run by CEDA. Alongside the data preservation the project will create a software repository to capture and document the processing code used to generate the outputs, as discussed below.”

“STFC presents its services through a set of local services that allow users to discover, understand and access data. As a partner in the Earth System Grid Federation (ESGF) STFC also maintains a data portal, and related services (such as an “ESGF Data Node”) in an international federation of data centres. This ESGF infrastructure connects portals and archives around the world with a federated search and security layer, which allows users to find and access data across the globe.

Placing the datasets generated by EUSTACE in this established data centre will maximise the availability of them for exploitation during and after the lifetime of the project”

**“Data standards to be used by EUSTACE**

The final data products provided for this project will follow and adhere to a number of standards and conventions. The data will be stored in the Climate and Forecasts Conventions for NetCDF[[13]](#footnote-13) (CF-netCDF) using the CF “standard name” conventions to describe the phenomena being measured/simulated. The information captured in the STFC Centre for Environmental Data Archival (CEDA) metadata catalogue builds upon the Data Specifications from the INSPIRE[[14]](#footnote-14) (Infrastructure for Spatial Information in the European Community) legislation. A summary of this metadata will be published to discovery metadata records compliant with the ISO19115 standard.”

**The project also anticipated the following types of data would be required at the commencement of the project:**

Data that are needed as input to perform the EUSTACE project, and facilitate any subsequent product generation in the time after EUSTACE.

The data sets include:

* Satellite skin observations of the oceans, land, lake and ice surfaces
* In situ observations
* Ancillary data

All these data are used for building and validating the skin surface temperature to surface air temperature relationships. A proportion of the in situ data will also be used directly in the product generation. Reprocessed data sets make a majority of the data sets. For future potential updates of the EUSTACE product, it is thus important to know the status of regular updates of the reprocessed data sets; and alternative data sets, if no updates are planned for the data sets used in the initial development of the EUSTACE products.

**The project anticipates the data output from the project to be as follows, with a high expectation that this will evolve as the project progresses:**

* Satellite skin temperature retrievals (from other projects) for all surfaces of Earth but with new, consistent uncertainty estimates across surfaces;
* Homogenised meteorological station records of surface air temperature measurements for Europe;
* Global data set of surface air temperature measurements from meteorological stations with discontinuities in each station record identified, where possible;
* An in-filled analysis of European surface air temperature based on homogenised meteorological station records since 1951;
* Surface air temperature estimates (with estimates of uncertainty) for all surfaces of Earth, derived from satellite surface skin temperature retrievals; and
* Globally-complete daily analyses of surface air temperature (with estimates of uncertainty)
* A surface air temperature match-up data base for inter-comparison of different surface temperature Climate Data Records

**The following types of materials are also anticipated by the project which must also be considered within the context of data management:**

***User Guides:*** Will support access to various aspects of the project. The primary guide will cover the final data products generated by EUSTACE; this will include a scientific description of the products along with information about formatting and structure and how the products, including uncertainty estimates, can be used.

The second set of user guides will (1) describe the processing chain and intermediate products used to generate final outputs and (2) provide an overview of the different services that are used to deliver the data along with some examples of scientific end usage. Further guidance and documentation will be produced in response to requirements that arise during the course of the project. Documentation on quality checking (code and results) will also be made available.

***Web site:*** Will act as the public interface to the project. It will provide an overview of EUSTACE and will be used to disseminate information on user interaction, project progress and product development. The web site will be set up using a simple Content Management System that will allow multiple project partners to author and edit content.

***Reports and journals:***

* User requirements reports;
* Publicly-released deliverable documents;
* Product user guides, including detailed guidance on uncertainties and information content in the products;
* Peer-reviewed journal articles

***Software Output:***Alongside the generation of the data products there will be significant development of software code throughout EUSTACE. STFC has set up a code repository, using an established version control system (Subversion) and provide training to partners on how to interact with it. The repository will act as a mechanism for internal code sharing and review within the project. Where appropriate and feasible, external access will be allowed for any code being made available under an open source licence; this question of external access will be decided by the General Assembly by the end of the project.

# 6. Project Resources

## Collaborative Infrastructure

Group Work Spaces (GWS) are **portions of CEMS storage allocated for particular projects** to manage themselves, enabling collaborating scientists to share high-performance disk storage.

Users can pull data from external sites to shared storage, process and analyze their data, and where allowed, exploit data available from other Group Work Spaces and from the CEDA archive.

GWSs are often provided in conjunction with project-specific computing resources, configured and deployed as virtual machines in the JASMIN infrastructure.

It is important to understand that these Group Work Spaces are not the same as the CEDA archive: GWS data are not curated for long-term storage.

Data in the GWS are the responsibility of the designated manager **Ag Stephens**. A system is available to enable GWS Managers to transfer data to/from tape and make best use of their allocation of online disk storage. The EUSTACE project has been provided with **150 Tb of Elastic Tape.** Summary of resources supplied to EUSTACE partners below

|  |  |
| --- | --- |
| **Account/Service** | **Academic Partner** |
| CEDA Account | Yes |
| Login Account | CEMS account |
| CEDA Data | Apply to CEDA subject to IP restrictions |
| JASMIN ANALYSIS Platform | Comes as standard with CEMS login |
| LOTUS | Comes as standard with CEMS login and EUSTACE VM |
| EUSTACE GWS | 150 Tb set up |
| Virtual Machine | Upon Application: Dedicated EUSTACE VM can be set up |
| High Performance Transfer | Upon Application |

## Data Management Resources and Scientist Support

The CEDA team will provide data scientist support and advice in following areas

* Data structures
* File formats
* Naming convention
* Metadata
* Design of versioning system (compatible with ESGF services)
* Specification for Quality Checking software
* Data package assembly and data provision
* Product User Guides

Full details of partner man months are detailed in the EUSTACE grant agreement, post-project resources for long-term data archival will be released subject to review procedures against the [NERC data value checklist](#_Appendix_2:_NERC) .

# 7. Data Management Review

## Review Procedures

As an ambitious innovative scientific research project, the required data input and expected data outputs will change over time. The tables below describe the review procedures and outcomes needed to deal with this. The procedures are also expected to evolve in line with project needs.

|  |  |  |  |
| --- | --- | --- | --- |
| Revision of Input Data Sets WP1 | | | |
| **Partner in Charge** | Jacob Hoyer (DMI) | | |
| **Description of review procedure**: DMI to review status of Input data set. This will be reviewed in respect of scientific requirements of the project, with data sets added/deleted in the data management/preservation objective table at 6 month point in project, after that as scientifically necessary | | | |
| **Data Set Reviewed** | **Date** | **Description** | **Outcome** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Revision of Output Data Sets WP2 | | | |
| **Partner in Charge** | John Kennedy (MO) | | |
| **Description of review procedure**:  ***(the following should be considered a provisional description to be further developed at the 12 months stage of the project where full range of data sets will also be considered)*** MO to update Data Management/Preservation Objective table when details of output data set are produced by WP2 related activities, in consultation with consortium/ Nick Rayner and consider if suitable for publication. If so data management/ archival procedure will be put in place and approval sought for long term archival. If not data will be marked for deletion with the GWS at project end + 6 months | | | |
| **Data Set Reviewed** | **Date** | **Description** | **Outcome** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Revision of Output Data Sets WP3 | | | |
| **Partner in Charge** | Darren Ghent (ULEIC) | | |
| **Description of review procedure**: ***(the following should be considered a provisional description to be further developed at the 12 months stage of the project where full range of data sets will also be considered)*** ULEIC to update Data Management/Preservation Objective table when details of output data set are produced by WP3, in consultation with consortium / Nick Rayner and consider if suitable for publication. If so data management/ archival procedure will be put in place and approval sought for long term archival. If not data will be marked for deletion with the GWS at project end + 6months | | | |
| **Data Set Reviewed** | **Date** | **Description** | **Outcome** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Revision of Data for Long Term Archival WP4 | | | |
| **Partner in Charge** | Victoria Bennett/Ag Stephens (CEDA) | | |
| **Description of review procedure**: Victoria Bennett will review data sets and approve resources for long term archival in line with the [NERC data value checklist](#_Appendix_2:_NERC_1). All input data sets will be reviewed at the end of project. Output sets will be reviewed when deemed suitable for publication by the WP leader[. Data deposit agreements](#_Appendix_11:_Data) will then be sought from the consortium | | | |
| **Data Set Reviewed** | **Date** | **Description** | **Outcome** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

## Data Management/Preservation Objectives

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PO /GWS ID | Brief Description | Responsible Partner | Purpose /Value | Preservation and Access Requirements | Link to DMP |
| MODIS | Aqua-MODIS Level-2 LST (GT\_MYD\_2P), Satellite LST and Auxiliary (AUX) data derived from Aqua-MODIS  Land surface skin temperature data sets from GlobTemperature | ULEIC | Satellite Observation - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_Aqua-MODIS_DMP) |
| SEVIRI | SEVIRI Level-2 LST (GT\_SEV\_2P)  Land surface skin temperature data sets from GlobTemperature) | ULEIC | Satellite Observation - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_SEVIRI) |
| esa-sst-cci | Satellite sea surface temperatures from SST CCI | UREAD | Satellite Observation - Input Data | Direct Group Workspace Access via the CEMS Academic Archive – Data is already under active preservation management as a CEMS data set | [DMP](#_SSI_CCI_DMP) |
| ARCLAKE | Satellite LSWT data derived from ATSR-2 and AATSR imagery for 263 large lakes | UREAD | Satellite Observation - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_ARCLAKE) |
| GLTC | Collation of long-term LSWT measurements from 291 lakes from satellite and in situ data | UREAD | Satellite Observation - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_GLTC) |
| AASTI | Arctic and Antarctic ice Surface Temperatures from thermal Infrared satellite sensors (AASTI) - Ice surface skin temperature observations (sea ice and ice Satellite Observation - Input Data sheets) from AVHRR GAC | DMI | Satellite Observation - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_AASTI_DMP) |
| METOP\_IST\_3MSEG | Metop A operational Ice Surface Temperatures - from NACLIM | DMI | Satellite Observation - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_Metop_DMP) |
| ARM\_Insitu | ARM in situ measurements- land and air temperature data | ULEIC/Met Office | In Situ Measurement - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_ARM_in_situ) |
| USCRN\_Insitu | USCRN in situ measurements-land and air temperature : Partners | ULEIC/Met Office | In Situ Measurement - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_USCRN_in_situ) |
| BSRN\_Insitu | BSRN in situ measurements - land and air temperature | ULEIC/Met Office | In Situ Measurement - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_BSRN_in_situ) |
| KIT\_Insitu | KIT/Land Surface Analysis Satellite Applications Facility ground station observations- land and air temperature | ULEIC/Met Office | In Situ Measurement - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_KIT_in_situ) |
| ECAD | European Climate Assessment & Dataset (ECA&D) | UBERN/KNMI | In Situ Measurement - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_ECAD_DMP) |
| GHCN-D | GHCN-D | UBERN/KNMI | In Situ Measurement - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_GHCN-D) |
| HadNMAT2 | Marine air temperature observations from HadNMAT2 | Met Office | In Situ Measurement - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_HadNMAT2_DMP) |
| HadIOD | Sea surface temperature observations from HadIOD | Met Office | In Situ Measurement - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_HadIOD_DMP) |
| ID required | In situ lake surface water temperature measurements through associates of GloboLakes and the Global Lake Temperature Collaboration | UREAD | In Situ Measurement - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_Insitu_Lake_Surface) |
| ID required | IST radiometric surface temperatures from infrared radiometers - High latitude in situ observations of surface temperature (Radiometer, buoys and scientific campaigns | DMI | In Situ Measurement - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_IST_DMP) |
| ID required | Temperature observations with 2 cm interval from 4 Ice mass balance buoys put out in multiyear sea ice floes during the: North Atlantic | DMI | In Situ Measurement - Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_NAACOS) |
| ERA-Interim | ERA-Interim | Met Office | Ancillary Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_ERA_Interim_DMP) |
| ID required | 20th Century Reanalysis | Met Office | Ancillary Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_20th_Century_Reanalysis) |
| OSISAF\_ICE\_REAN | OSI-SAF Global Sea Ice Concentration (OSI-409) | DMI | Ancillary Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_OSI-SAF_DMP) |
| DEM | Level-3 DEM data – Elevation data  (ULEIC) | ULEIC | Ancillary Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_DEM) |
| Frac\_Veg\_Cover | Level-3 FCOVER data – Vegetation data | ULEIC | Ancillary Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_FCOVER) |
| Land\_Cover\_CCI | ESA CCI Land Cover Map | Met Office | Ancillary Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_ESA_CCI_Landcover) |
| CryoClim | CryoClim Snow cover -Snow cover from the GlobSnow | Met Office | Ancillary Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_CryoClim) |
| Climatologies | CRU CL v2.0 , MyOcean OSTIA reanalysis , HadSST2 climatology , HadNMAT2 climatology | Met Office | Ancillary Input Data | Group Workspace Access – NO long term preservation objective (subject to review) | [DMP](#_Climatogies) |
| |  |  | | --- | --- | |  | eust-sfc-temp | | Satellite skin temperature retrievals (from other projects) for all surfaces of Earth but with new, consistent uncertainty estimates across surfaces | UREAD | Output Dataset | Initially held and validated on EUSTACE GWS then transferred to and made publically accessible as part of CEDA - CEMS Academic and exposed through ESGF nodes. Data to be preserved indefinitely | [DMP](#_Satellite_Skin_Temperature) |
| ID required | Homogenised meteorological station records of surface air temperature measurements for Europe | KNMI | Output Dataset | Initially held and validated on EUSTACE GWS then transferred to and made publically accessible as part of CEDA - CEMS Academic and exposed through ESGF nodes. Data to be preserved indefinitely | [DMP](#_Homogenised_Meteorological_Station) |
| ID required | Global data set of surface air temperature measurements from meteorological stations with discontinuities in each station record identified, where possible | UBERN/KNMI | Output Dataset | Initially held and validated on EUSTACE GWS then transferred to and made publically accessible as part of CEDA - CEMS Academic and exposed through ESGF nodes. Data to be preserved indefinitely | [DMP](#_Global_Data_Set) |
| ID required | An in-filled analysis of European surface air temperature based on homogenised meteorological station records since 1951 | KNMI | Output Dataset | Initially held and validated on EUSTACE GWS then transferred to and made publically accessible as part of CEDA - CEMS Academic and exposed through ESGF nodes. Data to be preserved indefinitely | [DMP](#_In–filled_Analysis_of) |
| |  |  | | --- | --- | |  | eust-unc | | Surface air temperature estimates (with estimates of uncertainty) for all surfaces of Earth, derived from satellite surface skin temperature retrievals | Met Office | Output Dataset | Initially held and validated on EUSTACE GWS then transferred to and made publically accessible as part of CEDA - CEMS Academic and exposed through ESGF nodes. Data to be preserved indefinitely | [DMP](#_Match_up_Database) |
| eust-mdb | Surface air temperature match-up data base | ULEIC | Output Dataset | TBD | [DMP](#_Match_up_Database_1) |

# 8. **Input Data Sets**

## Aqua-MODIS

|  |  |
| --- | --- |
| **Product name** | **Aqua-MODIS Level-2 LST (GT\_MYD\_2P)** |
| **Data description** | Satellite LST and Auxiliary (AUX) data derived from Aqua-MODIS |
| **Source** | GlobTemperature product derived from the operational MYD11 observations distributed by the NASA Land Processes Distributed Active Archive Center (LP DAAC) |
| **Key Websites** | <https://lpdaac.usgs.gov/products/modis_products_table>  <http://data.globtemperature.info/> |
| **Version** | GlobTemperature v1.0 |
| **References to technical specifications documents** | Wan, Z. (1999). MODIS Land-Surface Temperature Algorithm Theoretical Basis Document (LST ATBD) Version 3.3. *NASA Report*  Wan, Z. (2008). New refinements and validation of the MODIS land surface temperature/emissivity products. *Remote Sensing of Environment, 112*, 59– 74  Wan, Z., & Li, Z.L. (2008). Radiance-based validation of the V5 MODIS land-surface temperature product. *International Journal of Remote Sensing, 29*, 5373-5395 |
| **Product format** | NetCDF v4.1.3 |
| **Data gridding and resolution** | 1 km swath data in 5-minute granules |
| **Data coverage: temporal** | 2002 to present |
| **Data coverage: spatial** | Global |
| **Third party redistribution.** | No restrictions on use or redistribution |
| **Availability of regular upgrades, update cycle** | Yearly updates to the product expected |
| **Alternative data sources** | If required the GlobTemperature Terra-MODIS product can also be made available |
| **Comments** | The mandatory LST data are stored in datafiles labelled “LST” with accompanying auxiliary data stored in datafiles labelled “AUX” |

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| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **ULEIC** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/MODIS | |
| Number of files | |  |  | | --- | --- | |  | 2610787 | | |
| Size GB | |  | | --- | | 17057 | | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## SEVIRI

|  |  |
| --- | --- |
| **Product name** | **SEVIRI Level-2 LST (GT\_SEV\_2P)** |
| **Data description** | Satellite LST data derived from MSG-SEVIRI |
| **Source** | GlobTemperature product derived from the EUMETSAT Land Surface Analysis SAF Product LSA-001 |
| **Key Websites** | <http://data.globtemperature.info/>  <http://landsaf.meteo.pt/> |
| **Version** | GlobTemperature v1.0 |
| **References to technical specifications documents** | <http://www.eumetsat.int/website/home/Satellites/CurrentSatellites/Meteosat/MeteosatDesign/index.html>  Trigo, I., Freitas, S., Bioucas-Dias, J., Barroso, C., Monteiro, I., and Viterbo, P. (1999). SEVIRI Algorithm Theoretical Basis Document for Land Surface Temperature Issue 1.0. *LSA SAF Report*  Trigo, I.F., Monteiro, I.T., Olesen, F., & Kabsch, E. (2008). An assessment of remotely sensed land surface temperature. *Journal of Geophysical Research-Atmospheres, 113* |
| **Product format** | NetCDF v4.3.1.1 |
| **Data gridding and resolution** | 0.05° x 0.05° equal-angle latitude-longitude gridded data for entire SEVIRI disk at hourly resolution |
| **Data coverage: temporal** | 2007 to 2013 |
| **Data coverage: spatial** | SEVIRI disk – Africa, Europe, part of S. America |
| **Third party redistribution.** | LSA SAF product (LSA-001)  Background Intellectual Property Rights are applicable.  The LSA-002 product is considered “essential” in accordance with the WMO Resolution 40 (Cg-XII). This means that access to these SAF products is granted to all users without a licence, without charge and they may not be redistributed without transformation, as stated in the Basic Principles of EUMETSAT Data Policy (<http://www.eumetsat.int/website/wcm/idc/idcplg?IdcService=GET_FILE&dDocName=PDF_LEG_DATA_POLICY&RevisionSelectionMethod=LatestReleased&Rendition=Web>) |
| **Availability of regular upgrades, update cycle** | Yearly updates to the product expected |
| **Alternative data sources** | Full temporal (15 minute) and spatial resolution data are available from the LSA SAF website: <http://landsaf.ipma.pt> |
| **Comments** | The hourly LST data derived from SEVIRI/Meteosat and available from GlobTemperature is entirely based on the LST product generated within the EUMETSAT Satellite Applications Facility on Land Surface Analysis (LSA SAF product LSA-001) |

|  |  |  |
| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **ULEIC** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/SEVIRI | |
| Number of files | |  |  | | --- | --- | |  | 59048 | | |
| Size GB | |  | | --- | | 428 | | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## ESA SST CCI

|  |  |
| --- | --- |
| **Product name** | ESA SST CCI Analysis Long-term product |
| **Data description** | Interpolated (gap-filled) daily sea surface temperature |
| **Source** | European Space Agency Climate Change Initiative Sea Surface Temperature (SST CCI) |
| **Key Websites** | <http://dx.doi.org/10.5285/878bef44-d32a-40cd-a02d-49b6286f0ea4>  <http://cci.esa.int>  http://badc.nerc.ac.uk/browse/neodc/esacci\_sst |
| **Version** | v1.0 |
| **References to technical specifications documents** | Merchant, C. J., Embury, O., Roberts-Jones, J., Fiedler, E., Bulgin, C. E., Corlett, G. K., Good, S., McLaren, A., Rayner, N., Morak-Bozzo, S. and Donlon, C. (2014), Sea surface temperature datasets for climate applications from Phase 1 of the European Space Agency Climate Change Initiative (SST CCI). Geoscience Data Journal. doi: 10.1002/gdj3.20  http://www.esa-sst-cci.org/sites/default/files/Documents/public/SST\_CCI-PUG-UKMO-001\_Issue-3-signed-accepted.pdf |
| **Product format** | NetCDF |
| **Data gridding and resolution** | 0.05° x 0.05° equal-angle latitude-longitude gird |
| **Data coverage: temporal** | 1991 to 2010 |
| **Data coverage: spatial** | Global |
| **Third party redistribution.** | * Access to [ESA CCI SST data](http://neodc.nerc.ac.uk/browse/neodc/esacci_sst) are available under a [Creative Commons Licence by attribution](http://creativecommons.org/licenses/by/3.0/), which means users may: **Share** — copy and redistribute the material in any medium or format:   **Adapt** — remix, transform, and build upon the material; for any purpose, even commercially. This is conditional on appropriate attribution and providing a link to the license. |
| **Availability of regular upgrades, update cycle** | Next update in 2017 |
| **Alternative data sources** | HadISST |
| **Comments** | The analysis takes as input satellite data only, from AVHRRs and ATSRs, processed by SST CCI techniques. |

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| **Acquisition Risk Management** | | |
| Partner in Charge | **UREAD** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **Pending** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/? | |
| Number of files |  | |
| Size GB |  | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## ARCLAKE

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|  |  |
| --- | --- |
| **Product name** | **ARCLAKE** |
| **Data description** | Satellite LSWT data derived from ATSR-2 and AATSR imagery for 263 large lakes |
| **Source** | University of Reading / University of Edinburgh |
| **Key Websites** | <http://www.geos.ed.ac.uk/arclake> |
| **Version** | 2.0 |
| **References to technical specifications documents** | <http://www.geos.ed.ac.uk/arclake/ARC-Lake-Technical-Note-1-lake-selection_v1.0.pdf>  MacCallum, S.N., and Merchant, C.J. (2012). Surface water temperature observations of large lakes by optimal estimation. Can. J. Remote Sensing, 38(1), 25-45. |
| **Product format** | netCDF |
| **Data gridding and resolution** | 0.05 degree grid/Lake-mean |
| **Data coverage: temporal** | 1991 to 2011 |
| **Data coverage: spatial** | The locations of the 263 lakes is shown below[] |
| **Third party redistribution.** | ODC Attribution License (ODC-By)  [A plain language summary of the Open Database License](http://www.opendatacommons.org/licenses/by/summary/) is available. |
| **Availability of regular upgrades, update cycle** | There is also a v.3.0 of ARCLAKE  ARCLAKE likely to be superseded by update from NERC GloboLakes |
| **Alternative data sources** | ARCLAKE v3.0 |
| **Comments** | None |

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| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **UREAD** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **Pending** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/? | |
| Number of files |  | |
| Size GB |  | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## GLTC

|  |  |
| --- | --- |
| **Product name** | **Global Lake Temperature Collaboration (GLTC) data records** |
| **Data description** | Collation of long-term LSWT measurements from 291 lakes from satellite and in situ data. Satellite data were measured by the Advanced Very High Resolution Radiometer (AVHRR) series and the Along Track Scanning Radiometer (ATSR-1, ATSR-2, Advanced ATSR) series. In situ data were measured by various instruments, details of which are given by Sharma et al. (2015). |
| **Source** | The data set has been produced by phase 1 of the GLTC. |
| **Key Websites** | http://www.laketemperature.org/ |
| **Version** | 1.0 |
| **References to technical specifications documents** | Sharma et al. (2015). A global database of lake surface temperatures collected by in situ and satellite methods from 1985-2009. Scientific Data 2, 150008. |
| **Product format** | comma delimited text files, R package ‘laketemps’ |
| **Data gridding and resolution** | Data provided are summer-time (June, August, September for Northern Hemisphere; January, February, March for Southern Hemisphere) averages from both satellite and in situ measurements. Satellite data is only included for lakes that exhibited at least a 10 x 10 km area of pure water surface without any islands or shorelines. |
| **Data coverage: temporal** | 1985 to 2009 |
| **Data coverage: spatial** | Yellow – in situ sampled lakes; Red – satellite sampled lakes  Figure 1 |
| **Third party redistribution.** | The data policy is here <http://www.lternet.edu/policies/data-access>  This states: “Redistribution. The data are provided for use by the Data User. The metadata and this license must accompany all copies made and be available to all users of this Data Set. The Data User will not redistribute the original Data Set beyond this collaboration sphere.” |
| **Availability of regular upgrades, update cycle** | The data will be updated during phase 2 of the GLTC. Phase 2 aims to include more lakes, longer time series of in situ data, and depth-resolved measurements. |
| **Alternative data sources** | None |
| **Comments** | None |

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| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **?** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **Pending** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/? | |
| Number of files |  | |
| Size GB |  | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## AASTI

|  |  |
| --- | --- |
| **Product name** | **Arctic and Antarctic ice Surface Temperatures from thermal Infrared satellite sensors (AASTI)** |
| **Data description** | The observations are Level 2 satellite ice and sea surface temperature observations from 11 NOAA AVHRR sensors, (NOAA 7,9,11,12,14,15,16,17,18,Metop02,19) |
| **Source** | The data set has been produced by DMI and Met.no and is based upon the level 1 data set compiled by EUMETSAT’s Climate Monitoring, Satellite Application Facility. Contact [jlh@dmi.dk](mailto:jlh@dmi.dk) or gd@dmi.dk for further information on the data set |
| **Key Websites** | Naclim website is : <http://www.naclim.eu/> |
| **Version** | 1.0 |
| **References to technical specifications documents** | NACLIM Deliverable D32.28  Report on the documentation and description of the new Arctic Ocean dataset combining SST and IST  Contact [jlh@dmi.dk](mailto:jlh@dmi.dk) or [gd@dmi.dk](mailto:gd@dmi.dk) for further information |
| **Product format** | NetCDF 3, CF1.4 compliant |
| **Data gridding and resolution** | The data set is GAC data in approximately 5 km resolution |
| **Data coverage: temporal** | 1982 to 2009 |
| **Data coverage: spatial** | AASTI covers only the regions north of 40 degree north and south of 40 degree south, the figure below shows an example for 1 GAC swath |
| **Third party redistribution.** | The data are freely available to third parties |
| **Availability of regular upgrades, update cycle** | An update of this product to version 1.1 is expected when the level 1 Tb from climate SAF have been updated within approximately 6 months. Regular updates on e.g. a yearly basis depends upon funding. No funding is available at the moment but it is being sought. |
| **Alternative data sources** | The operational ice surface temperature products from OSI-SAF (see description below) will be processed. In addition, the operational Modis and VIIRS IST are available. |
| **Comments** | Version 1.0 contains calibration errors in about 30 % of the orbits from NOAA 7 to 14, due to erroneous calibration correction in the CLARA data set. This will be fixed within the Climate SAF and a new version will be ready. |

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| **Acquisition Risk Management** | | |
| Partner in Charge | **DMI** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/AASTI | |
| Number of files | |  |  | | --- | --- | | 556666 |  | | |
| Size GB | |  | | --- | | 7568 | | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## **Metop**

|  |  |
| --- | --- |
| **Product name** | **Metop A operational Ice Surface Temperatures** |
| **Data description** | This surface temperature product is an integrated IST, SST and MIZ temperature product based on METOP AVHRR IR level 2 swath data. Swath data width is approximately 2000km at approximately 1km resolution. The data are provided in 3 minutes segments and is processed as such and the product is delivered in the same 3 minutes swath projection.  The data includes the fields:   * **ic**: Ice concentration * **st**: Ice and sea surface temperatures * **cm\_flag**: Cloud mask and algorithm flag * **lat**:Latitude * **lon**:Longitude * **time**: time * **sza**: Sun-Zenith angle |
| **Source** | The data set has been produced by DMI under the Myocean project, but a transition is currently taking place, to include it as an official OSI-SAF product. |
| **Key Websites** | <http://osisaf.met.no/> |
| **Version** | 1.0 |
| **References to technical specifications documents** | The product is documented in the Myocean Product User Manual for Ice Surface Temperature  Reference: MYO-WP14-SIW-DMI-ARC-SEAICE\_TEMP-OBS-PUM  Contact [jlh@dmi.dk](mailto:jlh@dmi.dk) or [gd@dmi.dk](mailto:gd@dmi.dk) for further information. |
| **Product format** | NetCDF3, CF compliant |
| **Data gridding and resolution** | Spatial resolution is 1 km |
| **Data coverage: temporal** | From January 2013 to present |
| **Data coverage: spatial** | North of 60 deg N |
| **Third party redistribution.** | The data are freely available to third parties |
| **Availability of regular upgrades, update cycle** | Production will continue without gaps within the OSI-SAF. |
| **Alternative data sources** | The operational Modis and VIIRS IST are available. |
| **Comments** |  |

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| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **DMI** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/METOP\_IST\_3MSEG | |
| Number of files | |  |  | | --- | --- | | 760 |  | | |
| Size GB | |  | | --- | | 1240 | | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## ARM in situ

|  |  |
| --- | --- |
| **Product name** | **ARM in situ measurements** |
| **Data description** | In situ LST, air temperature and additional meteorological data measured at the Atmospheric Radiation Measurement (ARM) Climate Research Facility sites |
| **Source** | [U.S. Department of Energy (DOE)](http://www.energy.gov/) |
| **Key Websites** | <https://www.arm.gov/> |
| **Version** | Version numbering is variable and site specific |
| **References to technical specifications documents** | <http://www.arm.gov/publications/handbooks>  Mather, J.H., & Voyles, J.W. (2012). The ARM Climate Research Facility: A Review of Structure and Capabilities. *Bulletin of the American Meteorological Society, 94*, 377-392 |
| **Product format** | NetCDF |
| **Data gridding and resolution** | Point data averaged every 60 seconds |
| **Data coverage: temporal** | 1995 to present |
| **Data coverage: spatial** | Three primary locations: Southern Great Plains, North Slope of Alaska, Eastern North Atlantic  Mobile facilities anywhere in the world  Archive data from fixed locations in Tropical Western Pacific |
| **Third party redistribution.** | Free and open access to data; some sources restrict secondary distribution of data (see full data policy: <http://www.arm.gov/data/docs/policy>).  The U.S. Department of Energy ARM Climate Research Facility should be acknowledged in publications as the programmatic origin of the field program |
| **Availability of regular upgrades, update cycle** | Not known |
| **Alternative data sources** | N/A |
| **Comments** | Data from the ARM network are to be used for WP3 validation independent of that to be used in WP1 relationship building |

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| **Acquisition Risk Management** | | |
| Partner in Charge | **ULEIC/Met Office** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/ARM\_Insitu | |
| Number of files | |  |  |  | | --- | --- | --- | |  | 215731 |  | | |
| Size GB | |  | | --- | | 80 | | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## USCRN in situ

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| --- | --- |
| **Product name** | **USCRN in situ measurements** |
| **Data description** | In situ LST, air temperature and additional meteorological data measured at the US Climate Research Network (USCRN) sites |
| **Source** | National Climatic Data Center, NESDIS, NOAA, U.S. Department of Commerce |
| **Key Websites** | <http://www.ncdc.noaa.gov/crn/> |
| **Version** | N/A |
| **References to technical specifications documents** | <http://www.ncdc.noaa.gov/crn/instrdoc.html>  Howard J. Diamond, Thomas R. Karl, Michael A. Palecki, C. Bruce Baker, Jesse E. Bell, Ronald D. Leeper, David R. Easterling, Jay H. Lawrimore, Tilden P. Meyers, Michael R. Helfert, Grant Goodge, and Peter W. Thorne, 2013: U.S. Climate Reference Network after One Decade of Operations: Status and Assessment. *Bull. Amer. Meteor. Soc.*, **94**, 485–498 |
| **Product format** | ASCII |
| **Data gridding and resolution** | Point data averaged every 300 seconds |
| **Data coverage: temporal** | 2006 to present for sub-hourly data |
| **Data coverage: spatial** | 114 sites across the conterminous 48 states, with 16 additional sites in Alaska and 2 sites in Hawaii |
| **Third party redistribution.** | Users who redistribute or use USCRN data to create products and conduct analyses are asked to cite NCDC and the USCRN program as the source of the data (see full data policy: <http://www1.ncdc.noaa.gov/pub/data/uscrn/documentation/program/USCRN_Data_Management_Plan-September_2012.pdf>).  USCRN Program requests that users of USCRN data reference the following journal articles: Howard J. Diamond, Thomas R. Karl, Michael A. Palecki, C. Bruce Baker, Jesse E. Bell, Ronald D. Leeper, David R. Easterling, Jay H. Lawrimore, Tilden P. Meyers, Michael R. Helfert, Grant Goodge, and Peter W. Thorne, 2013: U.S. Climate Reference Network after One Decade of Operations: Status and Assessment. *Bull. Amer. Meteor. Soc.*, **94**, 485–498. doi, <http://dx.doi.org/10.1175/BAMS-D-12-00170.1>  Or, if emphasizing soil moisture/temperature data: Bell, J.E., M.A. Palecki, C.B. Baker, W.G. Collins, J.H. Lawrimore, R.D. Leeper, M.E. Hall, J. Kochendorfer, T.P. Meyers, T. Wilson, and H.J. Diamond. 2013: U.S. Climate Reference Network Soil Moisture and Temperature Observations. J. Hydrometeorol., doi: 10.1175/JHM-D-12-0146.1 |
| **Availability of regular upgrades, update cycle** | Not known |
| **Alternative data sources** | N/A |
| **Comments** | Data from the USCRN are to be used for WP3 validation independent of that to be used in WP1 relationship building |

|  |  |  |
| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **ULEIC/Met Office** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/USCRN\_Insitu | |
| Number of files | |  |  | | --- | --- | | 1760 |  | | |
| Size GB | 23 | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## BSRN in situ

|  |  |
| --- | --- |
| **Product name** | **BSRN in situ measurements** |
| **Data description** | In situ air temperature and additional meteorological data measured at the Baseline Surface Radiation Network (BSRN) sites |
| **Source** | World Radiation Monitoring Center (WRMC) |
| **Key Websites** | <http://www.bsrn.awi.de/> |
| **Version** | Version 1.0 |
| **References to technical specifications documents** | Ohmura, A., E. G. Dutton, B. Forgan and 12 co-authors, 1998: Baseline Surface Radiation Network (BSRN)/WCRP): New precision radiometry for climate research. Bull. Amer. Meteoro. Soc. 79, 2115- 2136 |
| **Product format** | ASCII (Station-to-archive format) |
| **Data gridding and resolution** | Point data averaged every 60 seconds |
| **Data coverage: temporal** | 1992 to present for sub-hourly data |
| **Data coverage: spatial** | 64 sites located around the world |
| **Third party redistribution.** | BSRN data is freely available to users for research purposes.  Use of a particular station's data and the World Radiation Monitoring Center (WRMC) must always be explicitly acknowledged  BSRN data sets provided by the WRMC must not be passed to a third party without the agreement of the WRMC |
| **Availability of regular upgrades, update cycle** | Not known |
| **Alternative data sources** | N/A |
| **Comments** | Data from the BSRN are to be used for WP3 validation independent of that to be used in WP1 relationship building |

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| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **ULEIC/Met Office** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/BSRN\_Insitu | |
| Number of files | |  | | --- | | 8304 | | |
| Size GB | |  | | --- | | 9 | | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## KIT insitu

|  |  |
| --- | --- |
| **Product name** | **KIT/Land Surface Analysis Satellite Applications Facility ground station observations** |
| **Data description** | In situ station observations of land surface temperature (LST), 2 m temperature and moisture, wind speed (2-3 m and 20-25 m height), long- and short-wave radiation (up- and down-welling radiation). |
| **Source** | Karlsruhe Institute of Technology and University of Copenhagen (Dahra Met data only) |
| **Key Websites** | <http://www.imk-asf.kit.edu/english/MSA-Validiation.php> |
| **Version** | Version 1 |
| **References to technical specifications documents** | Gottsche et al., 2013, ‘Validation of land surface temperature derived from MSG/SEVIRI with in situ measurements at Gobabeb, Namibia’, IJRS, DOI: 10.1080/01431161.2012.716539 |
| **Product format** | Ascii |
| **Data gridding and resolution** | Point observations at 1-minute intervals. |
| **Data coverage: temporal** | 2005 – present (Evora, Portugal), 2007- present (Gobabeb, Namibia and Dahra, Senegal), 2009 – present (Kalahari, Namibia). |
| **Data coverage: spatial** | Evora (Portugal), Farm RMZ and Heimat (Kalahari, Namibia), Gobabeb (Namib Desert) and Dahra (Senegal). |
| **Third party redistribution.** | Not permitted. |
| **Availability of regular upgrades, update cycle** | Data collection expected to continue for the foreseeable future. Requests for new/updated data must be made to KIT/Uni. Copenhagen. |
| **Alternative data sources** | None available. |
| **Comments** | Data from the Dahra station have significant gaps owing to vandalism and theft. Meteorological data for this station are probably provided by the University of Copenhagen. |

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| **Acquisition Risk Management** | | |
| Partner in Charge | **ULEIC/Met Office** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/KIT\_Insitu | |
| Number of files | |  |  | | --- | --- | |  | 6 | | |
| Size GB | |  | | --- | | 0 | | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## ECAD

|  |  |
| --- | --- |
| **Product name** | **European Climate Assessment & Dataset (ECA&D)** |
| **Data description** | In situ data, daily average temperature, daily maximum temperature, daily minimum temperature |
| **Source** | The ECA&D is compiled by KNMI and is a joint effort of National Meteorological and Hydrological Services and other data holding institutions in Europe and the Mediterranean |
| **Key Websites** | <http://www.ecad.eu> |
| **Version** | Version updated to Feb. 28 2015 |
| **References to technical specifications documents** | <http://www.ecad.eu/documents/atbd.pdf>  Klein Tank et al. (2002) Daily dataset of 20th-century surface air temperature and precipitation series for the European Climate Assessment, Intern. J. Climatol. 22:1441-1453 |
| **Product format** | ASCII |
| **Data gridding and resolution** | Station data |
| **Data coverage: temporal** | daily |
| **Data coverage: spatial** | Data contained for Europe (incl. Greenland), the Middle East and North Africa. |
| **Third party redistribution.** | Yes (for non-commercial research and education) |
| **Availability of regular upgrades, update cycle** | Monthly updated |
| **Alternative data sources** | - |
| **Comments** | - |

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| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **UBERN/KNMI** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress |  | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/ECAD | |
| Number of files | |  |  | | --- | --- | |  | 30093 | | |
| Size GB | |  | | --- | | 28 | | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## GHCN-D

|  |  |
| --- | --- |
| **Product name** | **Global Historical Climatology Network – Daily (GHCN-D)** |
| **Data description** | In situ data, daily maximum temperature, daily minimum temperature, precipitation, snow fall and snow depth. |
| **Source** | The GHCN-D data set is compiled by NCDC/NOAA |
| **Key Websites** | ftp://ftp.ncdc.noaa.gov/pub/data/ghcn/daily/ |
| **Version** | Version 3.20 |
| **References to technical specifications documents** | The journal article describing GHCN-Daily is:  Menne, M.J., I. Durre, R.S. Vose, B.E. Gleason, and T.G. Houston, 2012: An overview of the Global Historical Climatology Network-Daily Database. Journal of Atmospheric and Oceanic Technology, 29, 897-910, doi:10.1175/JTECH-D-11-00103.1.  To acknowledge the specific version of the dataset used, please cite:  Menne, M.J., I. Durre, B. Korzeniewski, S. McNeal, K. Thomas, X. Yin, S. Anthony, R. Ray, R.S. Vose, B.E.Gleason, and T.G. Houston, 2012: Global Historical Climatology Network -Daily (GHCN-Daily), Version 3.20 NOAA National Climatic Data Center. http://doi.org/10.7289/V5D21VHZ [April 2015]. |
| **Product format** | ASCII |
| **Data gridding and resolution** | Station data |
| **Data coverage: temporal** | daily |
| **Data coverage: spatial** | Global |
| **Third party redistribution.** | Open for non-commercial research and education. |
| **Availability of regular upgrades, update cycle** | - |
| **Alternative data sources** | - |
| **Comments** | - |

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| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **UBERN/KNMI** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **Pending** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming | |
| Number of files |  | |
| Size GB |  | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

## HadNMAT2

|  |  |
| --- | --- |
| **Product name** | **HadNMAT2** |
| **Data description** | In situ air temperature measurements, corrected to a reference height of 10m |
| **Source** | National Oceanography Centre and Met Office Hadley Centre |
| **Key Websites** | <http://www.metoffice.gov.uk/hadobs/hadnmat2/> |
| **Version** | v.2.0.0.0 |
| **References to technical specifications documents** | <http://www.metoffice.gov.uk/hadobs/hadnmat2/> |
| **Product format** | ascii |
| **Data gridding and resolution** | Data are point observations of air temperature |
| **Data coverage: temporal** | 1856-2010 |
| **Data coverage: spatial** | All ocean areas |
| **Third party redistribution.** | The data should be publicly available by the end of the project so redistribution would be unnecessary. |
| **Availability of regular upgrades, update cycle** | Air temperature measurements can be obtained from ICOADS real time updates. The data would need to be adjusted to a reference height. |
| **Alternative data sources** | n/a |
| **Comments** |  |

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| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **Met Office** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/HadNMAT2 | |
| Number of files | |  |  |  | | --- | --- | --- | |  | 3726 |  | | |
| Size GB | 2 | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## HadIOD

|  |  |
| --- | --- |
| **Product name** | **HadIOD (Hadley Centre Integrated Ocean Database)** |
| **Data description** | In situ water temperature, with uncertainty estimates and bias adjustments |
| **Source** | Met Office Hadley Centre. |
| **Key Websites** | <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2014JC010053/abstract> |
| **Version** | 1.1.0.0 |
| **References to technical specifications documents** | <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2014JC010053/abstract> |
| **Product format** | Format is plain ascii, file format description is provided in the data directory |
| **Data gridding and resolution** | Data are point observations |
| **Data coverage: temporal** | 1850-2014 |
| **Data coverage: spatial** | All ocean areas |
| **Third party redistribution.** | No |
| **Availability of regular upgrades, update cycle** | Product is updated once per year. |
| **Alternative data sources** | ICOADS Real Time updates could provide near-surface water temperature |
| **Comments** | Other comments. |

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| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **HadIOD** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/HadIOD | |
| Number of files | |  |  | | --- | --- | | 22 |  | | |
| Size GB | 42 | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## IST

|  |  |
| --- | --- |
| **Product name** | **IST radiometric surface temperatures from infrared radiometers** |
| **Data description** | ISAR and Cambell Scientific IR120) obtained during field campaigns to Greenland  The campaigns and instruments are listed below include:   * March/April 2011, Qaanaaq, Greenland: (ISAR and IR 120) * March/April 2012, Qaanaaq, Greenland: (IR 120 only) * March/April 2013, Qaanaaq Greenland : (ISAR + IR120) * March/April 2014, Qaanaaq Greenland: (IR 120) * January-April 2015, Qaanaaq Greenland, (IR 120 + AWS) |
| **Source** | All data have been acquired by DMI |
| **Key Websites** |  |
| **Version** |  |
| **References to technical specifications documents** | A data report from the 2011 experiment can be found at: <http://www.dmi.dk/fileadmin/Rapporter/TR/tr11-18.pdf> |
| **Product format** | All radiometer data are in ascii including information in the header |
| **Data gridding and resolution** | Point observations. |
| **Data coverage: temporal** | From 2011 to 2015. Field campaigns are typically carried out in 1-2 weeks in Late March and beginning of April.  An AWS with an IR 120 was put out in January 2015, providing 10 minutes observations of T2m and Tskin until (at least) April 2015. |
| **Data coverage: spatial** | Inglefield Bredning, Greenland, about 77.45 N, -69.21 W |
| **Third party redistribution.** | Data can be used by the partners in EUSTACE |
| **Availability of regular upgrades, update cycle** | 2-3 yearly field campaigns with radiometers are planned for the next 3 year |
| **Alternative data sources** |  |
| **Comments** |  |

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| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **DMI** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/? | |
| Number of files | |  |  | | --- | --- | | 32960 |  | | |
| Size GB | 33 | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## NAACOS

|  |  |
| --- | --- |
| **Product name** | **IMB from the NAACOS project** |
| **Data description** | Temperature observations with 2 cm interval from 4 Ice mass balance buoys put out in multiyear sea ice floes during the: North Atlantic - Arctic coupling in a changing climate: impacts on ocean circulation, carbon cycling and sea-ice (NAACOS) project.  The air-snow, snow-ice and ice-water interfaces are also identified in the data. |
| **Source** | All data have been acquired by DMI |
| **Key Websites** | Project website: http://www.staff.dtu.dk/cost/ProjectLinks/NAACOS/ |
| **Version** |  |
| **References to technical specifications documents** | The IMBs are produced by SAMS and follow the standard format for their IMBs. |
| **Product format** | All radiometer data are in ascii including information in the header |
| **Data gridding and resolution** | Point observations moving with the ice flows. |
| **Data coverage: temporal** | 6 hourly observations from August 2008 to failure of the buoys. The longest recording buoy (number 3) observed until February 2014. |
| **Data coverage: spatial** | The data coverage of the IMBs is shown in the figure below. |
| **Third party redistribution.** | Data usage us restricted to the partners in EUSTACE |
| **Availability of regular upgrades, update cycle** | IMBs will be deployed within the ICE-ARC during winter 2016, these data are also available to EUSTACE. |
| **Alternative data sources** |  |
| **Comments** |  |

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| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **DMI** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/ISTI | |
| Number of files | |  |  | | --- | --- | | 32960 |  | | |
| Size GB | 33 | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## ERA Interim

|  |  |
| --- | --- |
| **Product name** | **ERA-Interim** |
| **Data description** | Reanalysis data set with separate products for: Surface analysis, Pressure level analysis, Model level analysis, Isentropic level analysis, Potential vorticity level analysis, Surface daily forecast, Pressure level daily forecast, Model level daily forecast |
| **Source** | European Centre for Medium-Range Weather Forecasts (ECMWF) |
| **Key Websites** | <http://www.ecmwf.int/en/research/climate-reanalysis/era-interim> |
| **Version** | Version 1 |
| **References to technical specifications documents** | Berrisford et al., 2011, ‘The ERA-Interim archive V2.0’, ECMWF publication available from <http://old.ecmwf.int/publications/library/ecpublications/_pdf/era/era_report_series/RS_1_v2.pdf>  Dee et al., (2011), The ERA-Interim reanalysis: configuration and performance of the data assimilation system. Q.J.R. Meteorol. Soc., 137: 553–597. doi: 10.1002/qj.828 |
| **Product format** | NetCDF and GRIB |
| **Data gridding and resolution** | ~ 80 km spatial resolution, 6-hourly, 60 vertical levels (surface to 0.1 hPa). T255 Spectral resolution and reduced N256 Gaussian grid. |
| **Data coverage: temporal** | 1979-current |
| **Data coverage: spatial** | Global |
| **Third party redistribution.** | Prohibited. |
| **Availability of regular upgrades, update cycle** | Updated in real time for the foreseeable future (2 months lag). |
| **Alternative data sources** | ERA-interim will continue to be updated for the foreseeable future to be replaced eventually by ERA5 which will then be updated, possible around 2017. |
| **Comments** |  |

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| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **Met Office** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/ERA-interim – contains a README file with information about the data being in the BADC archive. | |
| Number of files | |  |  |  | | --- | --- | --- | |  | 5 |  | | |
| Size GB | 0 | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

This dataset is stored for long-term archival in the BADC archive.

## NOAA 20th Century Reanalysis

|  |  |
| --- | --- |
| **Product name** | **NOAA 20th Century Reanalysis** |
| **Data description** | Reanalysis |
| **Source** | The 20th Century Reanalysis (Version 2) Dataset was produced by the National Oceanic and Atmospheric Administration (NOAA) and University of Colorado's Cooperative Institute for Research in Environmental Sciences (CIRES), members of the international Twentieth Century Reanalysis (20CR) project. The data were produced through international cooperation under the auspices of the international Atmospheric Circulation Reconstructions over the Earth (ACRE) initiative, and working groups of the Global Climate Observing System (GCOS) and the World Climate Research Program (WCRP). |
| **Key Websites** | <http://www.esrl.noaa.gov/psd/data/20thC_Rean/> |
| **Version** | Version 2 |
| **References to technical specifications documents** | <http://www.esrl.noaa.gov/psd/data/20thC_Rean/> |
| **Product format** | Grib1 |
| **Data gridding and resolution** | Analyses every 6 hours on a 2 degree grid were produced to give the most likely state of the atmosphere based on a 56 ensemble member runs. Means, spreads and all ensemble members for each time step are available in the dataset archived at the BADC. |
| **Data coverage: temporal** | 1871-2009 |
| **Data coverage: spatial** | Global |
| **Third party redistribution.** | No, but data are freely available to all registered CEDA users. |
| **Availability of regular upgrades, update cycle** | 20th Century reanalysis will only be used for historical part of EUSTACE so updates are not needed |
| **Alternative data sources** | n/a |
| **Comments** | Other comments. |

|  |  |  |
| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **Met Office** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **Pending** | |
| Destination/location on GWS | Data is in the BADC archive:  /badc/noaa-20cr-v2/data | |
| Number of files |  | |
| Size GB |  | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

This dataset is stored for long-term archival in the BADC archive.

## OSI-SAF

|  |  |
| --- | --- |
| **Product name** | **OSI-SAF Global Sea Ice Concentration (OSI-409)** |
| **Data description** | The reprocessed sea ice concentration dataset of the EUMETSAT OSI SAF, covering the period from October 1978 to October 2009 (SMMR and SSM/I). The dataset includes error-bars for each grid cell (uncertainties). Version 1.1 of the dataset was released late 2011. Recently, the data set has been extended to August 2014  The product consists of three major fields:  ● sea ice concentration  ● uncertainty estimate  ● processing flag |
| **Source** | The data set has been produced by the OSI-SAF using passive microwave observations from the SMMR/SSMI(S) satellite series |
| **Key Websites** | <http://osisaf.met.no/> |
| **Version** | 1.1 + extension |
| **References to technical specifications documents** | Product user manual can be found at:  <http://osisaf.met.no/docs/pum_seaicereproc_ss2_v1p3.pdf>  validation report can be found at:  <http://osisaf.met.no/docs/validation_report_seaicereproc_ss2_v1p3.pdf> |
| **Product format** | Files are in NetCDF3 format. An example of a filename is:  ice\_conc\_nh\_ease-125\_reproc\_201401311200.nc |
| **Data gridding and resolution** | The sea ice concentration product is available on two projections and grids, each with one product for each hemisphere. The projections used are a Lambert Azimuthal Equal Area projection with a grid resolution of about 12.5 km, and a Polar Stereographic projection with a grid resolution of 10.0km. The Lambert grid is also called the EASE grid, and it is used by NSIDC for several of their sea ice products. |

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| **Acquisition Risk Management** | | |
| Partner in Charge | **DMI** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/OSISAF\_ICE\_REAN | |
| Number of files | |  |  | | --- | --- | | 23788 |  | | |
| Size GB | |  | | --- | | 310 | | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

|  |  |
| --- | --- |
| **Data coverage: temporal** | The OSI SAF sea ice concentration reprocessing data set covers the period from 26.10.1978 to 9.8.2014 |
| **Data coverage: spatial** | Data products are available for the Northern and Southern hemispheres. The coverage is shown in the figures below |
| **Third party redistribution.** | The data are freely available to third parties |
| **Availability of regular upgrades, update cycle** | Regular updates are planned with a time interval from 1 to 2 years. The next version is planned to be released fall 2016. |
| **Alternative data sources** | Alternative sea ice concentration data set are available from the ESA Climate change initiative (CCI) project for the sea ice. In addition, ice concentration data is available at National Snow and Ice Data Center (NSIDC) |
| **Comments** | The extension from 2009 to 2014 is not an official part of the OSI-SAF reprocessed data set, but is currently under review and will be included within a few months |

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| **Acquisition Risk Management** | | |
| Partner in Charge | **DMI** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **Pending** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming | |
| Number of files |  | |
| Size GB |  | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## DEM

|  |  |
| --- | --- |
| **Product name** | **Level-3 DEM data** |
| **Data description** | Down-sampled version of Digital Elevation Model (DEM) data from the Shuttle Radar Topography Mission (SRTM) |
| **Source** | National Aeronautics and Space Administration (NASA) and the National Geospatial-Intelligence Agency (NGA) |
| **Key Websites** | <https://lta.cr.usgs.gov/SRTM>  <http://www2.jpl.nasa.gov/srtm/index.html> |
| **Version** | Version 1.0 |
| **References to technical specifications documents** | Farr, T.G., M. Kobrick, 2000, Shuttle Radar Topography Mission produces a wealth of data, Amer. Geophys. Union Eos, v. 81, p. 583-585.  Rodriguez, E., C.S. Morris, J.E. Belz, E.C. Chapin, J.M. Martin, W. Daffer, S. Hensley, 2005, An assessment of the SRTM topographic products, Technical Report JPL D-31639, Jet Propulsion Laboratory, Pasadena, California, 143 pp |
| **Product format** | NetCDF v4.1.3 |
| **Data gridding and resolution** | 1/120° equal-angle latitude-longitude gridded data |
| **Data coverage: temporal** | N/A |
| **Data coverage: spatial** | Global |
| **Third party redistribution.** | No restrictions on use or redistribution |
| **Availability of regular upgrades, update cycle** | Unknown |
| **Alternative data sources** | N/A |
| **Comments** | The product is derived from STRM full resolution, 3 arc-sec data but down-sampled to 30 arc-sec (~ 1km) |

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| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **ULEIC** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/DEM | |
| Number of files | |  |  |  | | --- | --- | --- | |  | 2 | 3 | | |
| Size GB | |  | | --- | | 3 | | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## FCOVER

|  |  |
| --- | --- |
| **Product name** | **Level-3 FCOVER data** |
| **Data description** | Satellite-derived fractional vegetation cover (FCOVER) data from SPOT-VGT and PROBA-V |
| **Source** | GlobTemperature product derived from the Copernicus Global Land Service FCOVER product |
| **Key Websites** | <http://land.copernicus.eu/global/products/fcover> |
| **Version** | FCOVER v1.0 |
| **References to technical specifications documents** | Baret, F., Weiss, M., Lacaze, R., Camacho, F., Makhmara, H., Pacholcyzk, P., & Smets, B. (2013). GEOV1: LAI and FAPAR essential climate variables and FCOVER global time series capitalizing over existing products. Part1: Principles of development and production. Remote Sensing of Environment, 137, 299-309  Camacho, F., Cernicharo, J., Lacaze, R., Baret, F., & Weiss, M. (2013). GEOV1: LAI, FAPAR essential climate variables and FCOVER global time series capitalizing over existing products. Part 2: Validation and intercomparison with reference products. Remote Sensing of Environment, 137, 310-329 |
| **Product format** | NetCDF v4.1.3 |
| **Data gridding and resolution** | 1/112° equal-angle latitude-longitude gridded data (10-day composites) |
| **Data coverage: temporal** | 1999 to 2012 |
| **Data coverage: spatial** | Global |
| **½Third party redistribution.** | Free and open access as defined under article 8 [GMES data and information policy of the GIO regulation](http://web.jrc.ec.europa.eu/callsfortender/index.cfm?action=app.showdoc&id=14890&ei=4sdeUcGWKqnB0gXP2YHYCA&usg=AFQjCNF_SElxq8X250EsQDLlH8iaJCUAlA&sig2=HXmvyf-5TbFxPJEMHDDE_A&bvm=bv.44770516,d.d2k) and the Copernicus data policy regulation [No 1159/2013](http://land.copernicus.eu/global/sites/default/files/documents/about/Commission_Delegated_Regulation_1159_2013.pdf). |
| **Availability of regular upgrades, update cycle** | Version 2.0 expected Q3 2015 |
| **Alternative data sources** | N/A |
| **Comments** | GlobTemperature product derived from the Copernicus Global Land Service FCOVER product whereby 10-day composites are created from the source input data and climatology where no data exists |

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| **Acquisition Risk Management** | | |
| Partner in Charge | **ULEIC** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/Frac\_Veg\_Cover | |
| Number of files | |  |  | | --- | --- | | 509 |  | | |
| Size GB | |  | | --- | | 128 | | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## ESA CCI Land cover

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| --- | --- |
| **Product name** | **ESA CCI Land Cover Map** |
| **Data description** | Three satellite-derived global land cover (LC) maps representative for the 1998-2002, 2003-2007 and 2008-2012 epochs, with associated uncertainty information |
| **Source** | European Space Agency (ESA) Climate Change Initiative (CCI) |
| **Key Websites** | <http://www.esa-landcover-cci.org/> |
| **Version** | Version 1 (Phase 1) |
| **References to technical specifications documents** | LC CCI Algorithm Theoretical Basis Document v2, 2013 (<http://www.esa-landcover-cci.org/?q=webfm_send/75>)  LC CCI Product User Guide v2, 2014 (<http://www.esa-landcover-cci.org/?q=webfm_send/84>) |
| **Product format** | NetCDF (CF-1.6) |
| **Data gridding and resolution** | Regular 0.002778 degrees lat/long (approx. 300 m spatial resolution). |
| **Data coverage: temporal** | 1998-2012 |
| **Data coverage: spatial** | Global. |
| **Third party redistribution.** | Not permitted (but note data set is ‘free and open access’) |
| **Availability of regular upgrades, update cycle** | ESA LC CCI Phase 2 currently underway which will improve upon, and temporally extend Phase 1 products. Phase 2 will be undertaken 2015-2018. |
| **Alternative data sources** | Not known / not applicable. |
| **Comments** | Land cover classification is semi-static and version 1 land cover maps can be used during the EUSTACE lifetime and for a few years beyond the end of the project. |

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| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **`Met Office** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/Land\_Cover\_CCI | |
| Number of files | |  |  | | --- | --- | | 20 |  | | |
| Size GB | 28 | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## CryoClim

|  |  |
| --- | --- |
| **Product name** | **CryoClim Snow cover**  Level 3 data products: ‘[daily-multi-sce-nhl](http://thredds.met.no/thredds/catalog/cryoclim/met.no/daily-multi-sce-nhl/)’ and ‘[daily-multi-sce-nhl](http://thredds.met.no/thredds/catalog/cryoclim/met.no/daily-multi-sce-nhl/)**’** |
| **Data description** | Snow cover estimated from optical and passive microwave satellite data. |
| **Source** | CryoClim (project funded and facilitated by the Norwegian Space Centre and the European Space Agency). |
| **Key Websites** | <http://www.cryoclim.net/cryoclim/index.php/CryoClim> |
| **Version** | Version 1 (prototype product) |
| **References to technical specifications documents** | None available (expected at a later date) |
| **Product format** | NetCDF (CF-1.4) |
| **Data gridding and resolution** | 5 km EASE grid (Equal-Area Scalable Earth) |
| **Data coverage: temporal** | 25-07-1992 to 01-08-2009 (anticipated from circa 2000 required for EUSTACE) |
| **Data coverage: spatial** | Global (one file per hemisphere) |
| **Third party redistribution.** | Not permitted without special permission from the Norwegian Computing Center. Data set is ‘free and open access’. |
| **Availability of regular upgrades, update cycle** | Data for 2009 – present expected by end 2015. Regular updates anticipated thereafter (likely monthly but to be confirmed). Daily updates may also be available by the end of EUSTACE. |
| **Alternative data sources** | MODIS daily snow cover. |
| **Comments** | CryoClim Snow cover data field ‘sca’ contents:  41: water  43: glacier (or otherwise known permanent snow cover)  100: bare ground  200: snow cover  Contact Øystein Rudjord ([oystein.rudjord@nr.no](mailto:oystein.rudjord@nr.no)) for further information. |

|  |  |  |
| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **Met Office** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/CryoClim | |
| Number of files | |  |  |  | | --- | --- | --- | |  | 6570 |  | | |
| Size GB | |  | | --- | | 497 | | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here.

## Climatogies

|  |  |
| --- | --- |
| **Product name** | **CRU CL v2.0** |
| **Data description** | In situ based interpolated climatologies of mean temperature and diurnal temperature range, relative humidity, sunshine, ground frost, 10m wind speed, wet days, precipitation, elevation |
| **Source** | The Climatic Research Unit at the University of East Anglia. |
| **Key Websites** | <http://www.cru.uea.ac.uk/cru/data/hrg/tmc> |
| **Version** | 2.0 |
| **References to technical specifications documents** | New et al. 2002 <http://www.int-res.com/abstracts/cr/v21/n1/p1-25/> |
| **Product format** | Ascii |
| **Data gridding and resolution** | Monthly 10 arc minute resolution. |
| **Data coverage: temporal** | Data are a climatology for 1961-1990 |
| **Data coverage: spatial** | All land areas except Antarctica. |
| **Third party redistribution.** | No, but data are publicly available from CRU |
| **Availability of regular upgrades, update cycle** | Climatology is static and not in need of updates |
| **Alternative data sources** | n/a |
| **Comments** | Other comments. |
| **Product name** | MyOcean OSTIA reanalysis |
| **Data description** | Analysed sea surface temperature (L4) and sea ice fraction |
| **Source** | The climatology was provided with the SST CCI tools, but it’s an average based on the MyOcean OSTIA reanalysis |
| **Key Websites** | <http://www.myocean.eu/web/69-myocean-interactive-catalogue.php?option=com_csw&view=details&product_id=SST_GLO_SST_L4_REP_OBSERVATIONS_010_011> |
| **Version** | Version 1 |
| **References to technical specifications documents** | <http://journals.ametsoc.org/doi/abs/10.1175/JCLI-D-11-00648.1> |
| **Product format** | NetCDF |
| **Data gridding and resolution** | Daily, 0.05deg.x 0.05deg. |
| **Data coverage: temporal** | 1985-2007 |
| **Data coverage: spatial** | All ocean areas |
| **Third party redistribution.** | No, but data are publicly available |
| **Availability of regular upgrades, update cycle** | Climatology is static and needs no updates |
| **Alternative data sources** | n/a |
| **Comments** |  |

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| --- | --- |
| **Product name** | **HadSST2 climatology** |
| **Data description** | In situ SST |
| **Source** | Met Office Hadley Centre |
| **Key Websites** | <http://www.metoffice.gov.uk/hadobs/hadsst2> |
| **Version** | 2 |
| **References to technical specifications documents** | <http://www.metoffice.gov.uk/hadobs/hadsst2> |
| **Product format** | NetCDF |
| **Data gridding and resolution** | 5-day 1 degree by 1 degree |
| **Data coverage: temporal** | 1961-1990 climatology |
| **Data coverage: spatial** | All ocean areas not covered by ice shelves |
| **Third party redistribution.** | No, climatology is publicly available already |
| **Availability of regular upgrades, update cycle** | Climatology is static and needs no update |
| **Alternative data sources** | n/a |
| **Comments** |  |

|  |  |
| --- | --- |
| **Product name** | **HadNMAT2 climatology** |
| **Data description** | In situ . |
| **Source** | Met Office Hadley Centre |
| **Key Websites** | <http://www.metoffice.gov.uk/hadobs/hadnmat2/> |
| **Version** | 2.0.0.0 |
| **References to technical specifications documents** | <http://www.metoffice.gov.uk/hadobs/hadnmat2/> |
| **Product format** | NetCDF. |
| **Data gridding and resolution** | 5-day 1 degree by 1 degree. |
| **Data coverage: temporal** | 1961-1990 climatology. |
| **Data coverage: spatial** | All ocean areas. |
| **Third party redistribution.** | No, climatology is publicly available |
| **Availability of regular upgrades, update cycle** | Climatology is static and needs no update |
| **Alternative data sources** | n/a |
| **Comments** |  |

|  |  |  |
| --- | --- | --- |
| **Acquisition Risk Management** | | |
| Partner in Charge | **Met Office** | |
| Risk | Description | Action Required? |
| Quality of Data |  |  |
| Significant Gaps in Data |  |  |
| Issue with Supplier Agreement or licence |  |  |
| Delays in acquisition including technical or staffing problems |  |  |
| Are additional resource required to utilise data e.g. software |  |  |
| **Acquisition Plan** | | |
| Producer agreement and portion of data set(s) to be acquired |  | |
| Transfer Schedule |  | |
| Transfer Method |  | |
| **Acquisition Status** | | |
| Acquisition Progress | **In Progress** | |
| Destination/location on GWS | /group\_workspaces/cems2/eustace/data/incoming/Climatologies | |
| Number of files | |  |  |  | | --- | --- | --- | |  | 390 |  | | |
| Size GB | |  | | --- | | 21 | | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Have appropriate read/write permissions been set |  | |
| Have addition resource required for use of data on project (e.g.) been acquired? |  | |

**Preservation Access and Monitoring Activities.**

No preservation objective has been set for this data. Currently this data set will be deleted when the GWS is closed post project. If, under review, data is considered a long term asset for transfer to the CEMS Academic archive, additional data management tables will be added here

# 8. Output Data

## Satellite Skin Temperature Retrievals

|  |  |
| --- | --- |
| **Data Set Name** | **Anticipated Data set – no information yet** |
| **Data Description** |  |
| **Strategic Value and Target Community** |  |
| **Data Creator (Scientist in charge)** |  |
| **Location on GWS** |  |
| **Version** |  |
| **References to User Support Materials and Technical Specification Documents** | Brief description of document and links to documents in CEDA document repository |
| **Project Website** | [https://eustace-project.eu/](https://webmail.stfc.ac.uk/OWA/redir.aspx?C=2pDVKTNeJEy5E7ewue7p5QkIVfQCbNII5bhnv_CD_zIjEHasuw2qax63O2K_vYONyfIlu1qBTrU.&URL=https%3a%2f%2feustace-project.eu%2f) |
| **Relevant Software** | Description and link to relevant software in project repository [https://eustace-project.eu/](https://webmail.stfc.ac.uk/OWA/redir.aspx?C=2pDVKTNeJEy5E7ewue7p5QkIVfQCbNII5bhnv_CD_zIjEHasuw2qax63O2K_vYONyfIlu1qBTrU.&URL=https%3a%2f%2feustace-project.eu%2f) |
| **Product format** | Anticipated CF-NetCDF |
| **Number of file** |  |
| **Size GB** |  |
| **Data gridding and resolution** |  |
| **Data coverage: temporal** |  |
| **Data coverage: spatial** |  |
| **Licence for Distribution** | GPL |
| **Related Data Sets** |  |
| **Comments** |  |

|  |  |  |
| --- | --- | --- |
| **Archival Risk Management** | | |
| Partner in Charge | **CEDA** | |
| Risk | Description | Action Required? |
| Scientific Quality and Relevance of Data |  | Project to carry out quality check and data to be reviewed in context of NERC data value check list |
| Archival Quality of Data |  | CEDA to provide advice and support to project on versioning and CF-NetCDF compliance |
| Issue with Supplier Agreement or licence |  | Deposit agreement to be signed by PI Nick Rayner after agreement with consortium |
| Delays in Product including technical or staffing problems |  | EUSTACE Project Management Procedures and attendance of Ag Stephens at WP leaders meetings |
| Are additional resources required to utilise data e.g. software |  | Yes supporting resources to be reviewed by |
| **Archival Plan** | | |
| Producer agreement and portion/version of data set(s) to be archived. Details of supporting resources and representation information to be acquired for long term archival |  | |
| Access Plan | MOLES/CEDA, ESGF, DOI | |
| Transfer Schedule |  | |
| Transfer Method | Direct Transfer from GWS to CEMS Academic archive | |
| **Archival Status** | | |
| Archival Progress | (Pending/In progress/complete) | |
| Data Deposit agreement signed/approved |  | |
| NERC long term archival resources approved |  | |
| Destination/location on CEMS |  | |
| Number of files archived |  | |
| Size GB archived |  | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Has MOLES compliant meta data been gathered? |  | |
| Has MOLES Catalogue record been created? |  | |
| Have appropriate access permissions been set and data published via CEDA? |  | |
| Has data been published via ESGF node? |  | |
| Has DOI been Issued? |  | |
| Have links between catalogue and website been established? |  | |
| Have Links between catalogue and document repository been established? |  | |
| Have Links between catalogue and Subversion code repository been established? |  | |
| Have additional resources required for use of data on project been acquired and associated with data set? |  | |

|  |  |  |
| --- | --- | --- |
| **Preservation Risk Management** | | |
| Partner in Charge | **CEDA** | |
| Risk | Description | Action Required? |
| Data Format |  | Standard NetCDF format is highly stable and a CEDA “supported format”. Support of format , quality checking and RepInfo can be provided by CEDA |
| Semantics |  | Support will be provided by CEDA |
| Fixity |  | Data will be backed up and fixity checked in line with CEDA common practices |
| Media Refreshment |  | Data will be backed up and fixity checked in line with CEDA common practices |
| External/Linked Resources |  | Yes website, documents and Subversion code repository link will need to be monitored |
| **Preservation Plan and Status (Immediate action to be taken)** | | |
| Format compliance |  | |
| CF standard names compliance |  | |
| **Monitoring Plan (aspects to reviewed/monitored by CEDA in long term)** | | |
| Format Review | Review suitability of NetCDF format by Designated community in 10 years | |
| Link to Document Repository | Review stability of link and value of content in Doc Repository in 5 years | |
| Link to Website | Review stability of link and value of content project end + 5 years | |
| Link to Software | Review stability of link an value of content in Subversion repository project end + 5 years | |

## Homogenised Meteorological Station records

|  |  |
| --- | --- |
| **Data Set Name** | **Anticipated Data set – no information yet** |
| **Data Description** |  |
| **Strategic Value and Target Community** |  |
| **Data Creator (Scientist in charge)** |  |
| **Location on GWS** |  |
| **Version** |  |
| **References to User Support Materials and Technical Specification Documents** | Brief description of document and links to documents in CEDA document repository |
| **Project Website** | [https://eustace-project.eu/](https://webmail.stfc.ac.uk/OWA/redir.aspx?C=2pDVKTNeJEy5E7ewue7p5QkIVfQCbNII5bhnv_CD_zIjEHasuw2qax63O2K_vYONyfIlu1qBTrU.&URL=https%3a%2f%2feustace-project.eu%2f) |
| **Relevant Software** | Description and link to relevant software in project repository [https://eustace-project.eu/](https://webmail.stfc.ac.uk/OWA/redir.aspx?C=2pDVKTNeJEy5E7ewue7p5QkIVfQCbNII5bhnv_CD_zIjEHasuw2qax63O2K_vYONyfIlu1qBTrU.&URL=https%3a%2f%2feustace-project.eu%2f) |
| **Product format** | Anticipated CF-NetCDF |
| **Number of file** |  |
| **Size GB** |  |
| **Data gridding and resolution** |  |
| **Data coverage: temporal** |  |
| **Data coverage: spatial** |  |
| **Licence for Distribution** | GPL |
| **Related Data Sets** |  |
| **Comments** |  |

|  |  |  |
| --- | --- | --- |
| **Archival Risk Management** | | |
| Partner in Charge | **CEDA** | |
| Risk | Description | Action Required? |
| Scientific Quality and Relevance of Data |  | Project to carry out quality check and data to be reviewed in context of NERC data value check list |
| Archival Quality of Data |  | CEDA to provide advice and support to project on versioning and CF-NetCDF compliance |
| Issue with Supplier Agreement or licence |  | Deposit agreement to be signed by PI Nick Rayner after agreement with consortium |
| Delays in Product including technical or staffing problems |  | EUSTACE Project Management Procedures and attendance of Ag Stephens at WP leaders meetings |
| Are additional resources required to utilise data e.g. software |  | Yes supporting resources to reviewed by |
| **Archival Plan** | | |
| Producer agreement and portion/version of data set(s) to be archived. Details of supporting resources and representation information to be acquired for long term archival |  | |
| Access Plan | MOLES/CEDA, ESGF, DOI | |
| Transfer Schedule |  | |
| Transfer Method | Direct Transfer from GWS to CEMS Academic archive | |
| **Archival Status** | | |
| Archival Progress | (Pending/In progress/complete) | |
| Data Deposit agreement signed/approved |  | |
| NERC long term archival resources approved |  | |
| Destination/location on CEMS |  | |
| Number of files archived |  | |
| Size GB archived |  | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Has MOLES compliant meta data been gathered? |  | |
| Has MOLES Catalogue record been created? |  | |
| Have appropriate access permissions been set and data published via CEDA? |  | |
| Has data been published via ESGF node? |  | |
| Has DOI been Issued? |  | |
| Have links between catalogue and website been established? |  | |
| Have Links between catalogue and document repository been established? |  | |
| Have Links between catalogue and Subversion code repository been established? |  | |
| Have additional resources required for use of data on project been acquired and associated with data set? |  | |

## Global Data Set of surface air temperature Measurements

|  |  |
| --- | --- |
| **Data Set Name** | **Anticipated Data set – no information yet** |
| **Data Description** |  |
| **Strategic Value and Target Community** |  |
| **Data Creator (Scientist in charge)** |  |
| **Location on GWS** |  |
| **Version** |  |
| **References to User Support Materials and Technical Specification Documents** | Brief description of document and links to documents in CEDA document repository |
| **Project Website** | [https://eustace-project.eu/](https://webmail.stfc.ac.uk/OWA/redir.aspx?C=2pDVKTNeJEy5E7ewue7p5QkIVfQCbNII5bhnv_CD_zIjEHasuw2qax63O2K_vYONyfIlu1qBTrU.&URL=https%3a%2f%2feustace-project.eu%2f) |
| **Relevant Software** | Description and link to relevant software in project repository [https://eustace-project.eu/](https://webmail.stfc.ac.uk/OWA/redir.aspx?C=2pDVKTNeJEy5E7ewue7p5QkIVfQCbNII5bhnv_CD_zIjEHasuw2qax63O2K_vYONyfIlu1qBTrU.&URL=https%3a%2f%2feustace-project.eu%2f) |
| **Product format** | Anticipated CF-NetCDF |
| **Number of file** |  |
| **Size GB** |  |
| **Data gridding and resolution** |  |
| **Data coverage: temporal** |  |
| **Data coverage: spatial** |  |
| **Licence for Distribution** | GPL |
| **Related Data Sets** |  |
| **Comments** |  |

|  |  |  |
| --- | --- | --- |
| **Archival Risk Management** | | |
| Partner in Charge | **CEDA** | |
| Risk | Description | Action Required? |
| Scientific Quality and Relevance of Data |  | Project to carry out quality check and data to be reviewed in context of NERC data value check list |
| Archival Quality of Data |  | CEDA to provide advice and support to project on versioning and CF-NetCDF compliance |
| Issue with Supplier Agreement or licence |  | Deposit agreement to be signed by PI Nick Rayner after agreement with consortium |
| Delays in Product including technical or staffing problems |  | EUSTACE Project Management Procedures and attendance of Ag Stephens at WP leaders meetings |
| Are additional resources required to utilise data e.g. software |  | Yes supporting resources to reviewed by |
| **Archival Plan** | | |
| Producer agreement and portion/version of data set(s) to be archived. Details of supporting resources and representation information to be acquired for long term archival |  | |
| Access Plan | MOLES/CEDA, ESGF, DOI | |
| Transfer Schedule |  | |
| Transfer Method | Direct Transfer from GWS to CEMS Academic archive | |
| **Archival Status** | | |
| Archival Progress | (Pending/In progress/complete) | |
| Data Deposit agreement signed/approved |  | |
| NERC long term archival resources approved |  | |
| Destination/location on CEMS |  | |
| Number of files archived |  | |
| Size GB archived |  | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Has MOLES compliant meta data been gathered? |  | |
| Has MOLES Catalogue record been created? |  | |
| Have appropriate access permissions been set and data published via CEDA? |  | |
| Has data been published via ESGF node? |  | |
| Has DOI been Issued? |  | |
| Have links between catalogue and website been established? |  | |
| Have Links between catalogue and document repository been established? |  | |
| Have Links between catalogue and Subversion code repository been established? |  | |
| Have additional resources required for use of data on project been acquired and associated with data set? |  | |

|  |  |  |
| --- | --- | --- |
| **Preservation Risk Management** | | |
| Partner in Charge | **CEDA** | |
| Risk | Description | Action Required? |
| Data Format |  | Standard NetCDF format is highly stable and a CEDA “supported format”. Support of format , quality checking and RepInfo can be provided by CEDA |
| Semantics |  | Support will be provided by CEDA |
| Fixity |  | Data will be backed up and fixity checked in line with CEDA common practices |
| Media Refreshment |  | Data will be backed up and fixity checked in line with CEDA common practices |
| External/Linked Resources |  | Yes website, documents and Subversion code repository link will need to be monitored |
| **Preservation Plan and Status (Immediate action to be taken)** | | |
| Format compliance |  | |
| CF standard names compliance |  | |
| **Preservation Status (Immediate action to be taken)** | | |
| Association with NetCDF RepInfo |  | |
| **Monitoring Plan (aspects to reviewed/monitored by CEDA in long term)** | | |
| Format Review | Review suitability of NetCDF format by Designated community in 10 years | |
| Link to Document Repository | Review stability of link and value of content in Doc Repository in 5 years | |
| Link to Website | Review stability of link and value of content project end + 5 years | |
| Link to Software | Review stability of link an value of content in Subversion repository project end + 5 years | |

## In–filled Analysis of European surface air temperature

|  |  |
| --- | --- |
| **Data Set Name** | **Anticipated Data set – no information yet** |
| **Data Description** |  |
| **Strategic Value and Target Community** |  |
| **Data Creator (Scientist in charge)** |  |
| **Location on GWS** |  |
| **Version** |  |
| **References to User Support Materials and Technical Specification Documents** | Brief description of document and links to documents in CEDA document repository |
| **Project Website** | [https://eustace-project.eu/](https://webmail.stfc.ac.uk/OWA/redir.aspx?C=2pDVKTNeJEy5E7ewue7p5QkIVfQCbNII5bhnv_CD_zIjEHasuw2qax63O2K_vYONyfIlu1qBTrU.&URL=https%3a%2f%2feustace-project.eu%2f) |
| **Relevant Software** | Description and link to relevant software in project repository [https://eustace-project.eu/](https://webmail.stfc.ac.uk/OWA/redir.aspx?C=2pDVKTNeJEy5E7ewue7p5QkIVfQCbNII5bhnv_CD_zIjEHasuw2qax63O2K_vYONyfIlu1qBTrU.&URL=https%3a%2f%2feustace-project.eu%2f) |
| **Product format** | Anticipated CF-NetCDF |
| **Number of file** |  |
| **Size GB** |  |
| **Data gridding and resolution** |  |
| **Data coverage: temporal** |  |
| **Data coverage: spatial** |  |
| **Licence for Distribution** | GPL |
| **Related Data Sets** |  |
| **Comments** |  |

|  |  |  |
| --- | --- | --- |
| **Archival Risk Management** | | |
| Partner in Charge | **CEDA** | |
| Risk | Description | Action Required? |
| Scientific Quality and Relevance of Data |  | Project to carry out quality check and data to be reviewed in context of NERC data value check list |
| Archival Quality of Data |  | CEDA to provide advice and support to project on versioning and CF-NetCDF compliance |
| Issue with Supplier Agreement or licence |  | Deposit agreement to be signed by PI Nick Rayner after agreement with consortium |
| Delays in Product including technical or staffing problems |  | EUSTACE Project Management Procedures and attendance of Ag Stephens at WP leaders meetings |
| Are additional resources required to utilise data e.g. software |  | Yes supporting resources to reviewed by |
| **Archival Plan** | | |
| Producer agreement and portion/version of data set(s) to be archived. Details of supporting resources and representation information to be acquired for long term archival |  | |
| Access Plan | MOLES/CEDA, ESGF, DOI | |
| Transfer Schedule |  | |
| Transfer Method | Direct Transfer from GWS to CEMS Academic archive | |
| **Archival Status** | | |
| Archival Progress | (Pending/In progress/complete) | |
| Data Deposit agreement signed/approved |  | |
| NERC long term archival resources approved |  | |
| Destination/location on CEMS |  | |
| Number of files archived |  | |
| Size GB archived |  | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Has MOLES compliant meta data been gathered? |  | |
| Has MOLES Catalogue record been created? |  | |
| Have appropriate access permissions been set and data published via CEDA? |  | |
| Has data been published via ESGF node? |  | |
| Has DOI been Issued? |  | |
| Have links between catalogue and website been established? |  | |
| Have Links between catalogue and document repository been established? |  | |
| Have Links between catalogue and Subversion code repository been established? |  | |
| Have additional resources required for use of data on project been acquired and associated with data set? |  | |

|  |  |  |
| --- | --- | --- |
| **Preservation Risk Management** | | |
| Partner in Charge | **CEDA** | |
| Risk | Description | Action Required? |
| Data Format |  | Standard NetCDF format is highly stable and a CEDA “supported format”. Support of format , quality checking and RepInfo can be provided by CEDA |
| Semantics |  | Support will be provided by CEDA |
| Fixity |  | Data will be backed up and fixity checked in line with CEDA common practices |
| Media Refreshment |  | Data will be backed up and fixity checked in line with CEDA common practices |
| External/Linked Resources |  | Yes website, documents and Subversion code repository link will need to be monitored |
| **Preservation Plan and Status (Immediate action to be taken)** | | |
| Format compliance |  | |
| CF standard names compliance |  | |
| **Preservation Status (Immediate action to be taken)** | | |
| Association with NetCDF RepInfo |  | |
| **Monitoring Plan (aspects to reviewed/monitored by CEDA in long term)** | | |
| Format Review | Review suitability of NetCDF format by Designated community in 10 years | |
| Link to Document Repository | Review stability of link and value of content in Doc Repository in 5 years | |
| Link to Website | Review stability of link and value of content project end + 5 years | |
| Link to Software | Review stability of link an value of content in Subversion repository project end + 5 years | |

## Surface air temperature estimates (with uncertainty)

|  |  |
| --- | --- |
| **Data Set Name** | **Anticipated Data set – no information yet** |
| **Data Description** |  |
| **Strategic Value and Target Community** |  |
| **Data Creator (Scientist in charge)** |  |
| **Location on GWS** |  |
| **Version** |  |
| **References to User Support Materials and Technical Specification Documents** | Brief description of document and links to documents in CEDA document repository |
| **Project Website** | [https://eustace-project.eu/](https://webmail.stfc.ac.uk/OWA/redir.aspx?C=2pDVKTNeJEy5E7ewue7p5QkIVfQCbNII5bhnv_CD_zIjEHasuw2qax63O2K_vYONyfIlu1qBTrU.&URL=https%3a%2f%2feustace-project.eu%2f) |
| **Relevant Software** | Description and link to relevant software in project repository [https://eustace-project.eu/](https://webmail.stfc.ac.uk/OWA/redir.aspx?C=2pDVKTNeJEy5E7ewue7p5QkIVfQCbNII5bhnv_CD_zIjEHasuw2qax63O2K_vYONyfIlu1qBTrU.&URL=https%3a%2f%2feustace-project.eu%2f) |
| **Product format** | Anticipated CF-NetCDF |
| **Number of file** |  |
| **Size GB** |  |
| **Data gridding and resolution** |  |
| **Data coverage: temporal** |  |
| **Data coverage: spatial** |  |
| **Licence for Distribution** | GPL |
| **Related Data Sets** |  |
| **Comments** |  |

|  |  |  |
| --- | --- | --- |
| **Archival Risk Management** | | |
| Partner in Charge | **CEDA** | |
| Risk | Description | Action Required? |
| Scientific Quality and Relevance of Data |  | Project to carry out quality check and data to be reviewed in context of NERC data value check list |
| Archival Quality of Data |  | CEDA to provide advice and support to project on versioning and CF-NetCDF compliance |
| Issue with Supplier Agreement or licence |  | Deposit agreement to be signed by PI Nick Rayner after agreement with consortium |
| Delays in Product including technical or staffing problems |  | EUSTACE Project Management Procedures and attendance of Ag Stephens at WP leaders meetings |
| Are additional resources required to utilise data e.g. software |  | Yes supporting resources to reviewed by |
| **Archival Plan** | | |
| Producer agreement and portion/version of data set(s) to be archived. Details of supporting resources and representation information to be acquired for long term archival |  | |
| Access Plan | MOLES/CEDA, ESGF, DOI | |
| Transfer Schedule |  | |
| Transfer Method | Direct Transfer from GWS to CEMS Academic archive | |
| **Archival Status** | | |
| Archival Progress | (Pending/In progress/complete) | |
| Data Deposit agreement signed/approved |  | |
| NERC long term archival resources approved |  | |
| Destination/location on CEMS |  | |
| Number of files archived |  | |
| Size GB archived |  | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Has MOLES compliant meta data been gathered? |  | |
| Has MOLES Catalogue record been created? |  | |
| Have appropriate access permissions been set and data published via CEDA? |  | |
| Has data been published via ESGF node? |  | |
| Has DOI been Issued? |  | |
| Have links between catalogue and website been established? |  | |
| Have Links between catalogue and document repository been established? |  | |
| Have Links between catalogue and Subversion code repository been established? |  | |
| Have additional resources required for use of data on project been acquired and associated with data set? |  | |

|  |  |  |
| --- | --- | --- |
| **Preservation Risk Management** | | |
| Partner in Charge | **CEDA** | |
| Risk | Description | Action Required? |
| Data Format |  | Standard NetCDF format is highly stable and a CEDA “supported format”. Support of format , quality checking and RepInfo can be provided by CEDA |
| Semantics |  | Support will be provided by CEDA |
| Fixity |  | Data will be backed up and fixity checked in line with CEDA common practices |
| Media Refreshment |  | Data will be backed up and fixity checked in line with CEDA common practices |
| External/Linked Resources |  | Yes website, documents and Subversion code repository link will need to be monitored |
| **Preservation Plan and Status (Immediate action to be taken)** | | |
| Format compliance |  | |
| CF standard names compliance |  | |
| **Preservation Status (Immediate action to be taken)** | | |
| Association with NetCDF RepInfo |  | |
| **Monitoring Plan (aspects to reviewed/monitored by CEDA in long term)** | | |
| Format Review | Review suitability of NetCDF format by Designated community in 10 years | |
| Link to Document Repository | Review stability of link and value of content in Doc Repository 5 years | |
| Link to Website | Review stability of link and value of content end + 5 years | |
| Link to Software | Review stability of link an value of content in Subversion repository project end + 5 years | |

## Match up Database

|  |  |
| --- | --- |
| **Data Set Name** | **Anticipated Data set – no information yet** |
| **Data Description** |  |
| **Strategic Value and Target Community** |  |
| **Data Creator (Scientist in charge)** |  |
| **Location on GWS** |  |
| **Version** |  |
| **References to User Support Materials and Technical Specification Documents** | Brief description of document and links to documents in CEDA document repository |
| **Project Website** | [https://eustace-project.eu/](https://webmail.stfc.ac.uk/OWA/redir.aspx?C=2pDVKTNeJEy5E7ewue7p5QkIVfQCbNII5bhnv_CD_zIjEHasuw2qax63O2K_vYONyfIlu1qBTrU.&URL=https%3a%2f%2feustace-project.eu%2f) |
| **Relevant Software** | Description and link to relevant software in project repository [https://eustace-project.eu/](https://webmail.stfc.ac.uk/OWA/redir.aspx?C=2pDVKTNeJEy5E7ewue7p5QkIVfQCbNII5bhnv_CD_zIjEHasuw2qax63O2K_vYONyfIlu1qBTrU.&URL=https%3a%2f%2feustace-project.eu%2f) |
| **Product format** | Anticipated CF-NetCDF |
| **Number of file** |  |
| **Size GB** |  |
| **Data gridding and resolution** |  |
| **Data coverage: temporal** |  |
| **Data coverage: spatial** |  |
| **Licence for Distribution** | GPL |
| **Related Data Sets** |  |
| **Comments** |  |

|  |  |  |
| --- | --- | --- |
| **Archival Risk Management** | | |
| Partner in Charge | **CEDA** | |
| Risk | Description | Action Required? |
| Scientific Quality and Relevance of Data |  | Project to carry out quality check and data to be reviewed in context of NERC data value check list |
| Archival Quality of Data |  | CEDA to provide advice and support to project on versioning and CF-NetCDF compliance |
| Issue with Supplier Agreement or licence |  | Deposit agreement to be signed by PI Nick Rayner after agreement with consortium |
| Delays in Product including technical or staffing problems |  | EUSTACE Project Management Procedures and attendance of Ag Stephens at WP leaders meetings |
| Are additional resources required to utilise data e.g. software |  | Yes supporting resources to reviewed by |
| **Archival Plan** | | |
| Producer agreement and portion/version of data set(s) to be archived. Details of supporting resources and representation information to be acquired for long term archival |  | |
| Access Plan | MOLES/CEDA, ESGF, DOI | |
| Transfer Schedule |  | |
| Transfer Method | Direct Transfer from GWS to CEMS Academic archive | |
| **Archival Status** | | |
| Archival Progress | (Pending/In progress/complete) | |
| Data Deposit agreement signed/approved |  | |
| NERC long term archival resources approved |  | |
| Destination/location on CEMS |  | |
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| Size GB archived |  | |
| Confirmation of quality and sufficiency of data |  | |
| Licence confirmed as suitable for use by EUSTACE |  | |
| Has MOLES compliant meta data been gathered? |  | |
| Has MOLES Catalogue record been created? |  | |
| Have appropriate access permissions been set and data published via CEDA? |  | |
| Has data been published via ESGF node? |  | |
| Has DOI been Issued? |  | |
| Have links between catalogue and website been established? |  | |
| Have Links between catalogue and document repository been established? |  | |
| Have Links between catalogue and Subversion code repository been established? |  | |
| Have additional resources required for use of data on project been acquired and associated with data set? |  | |

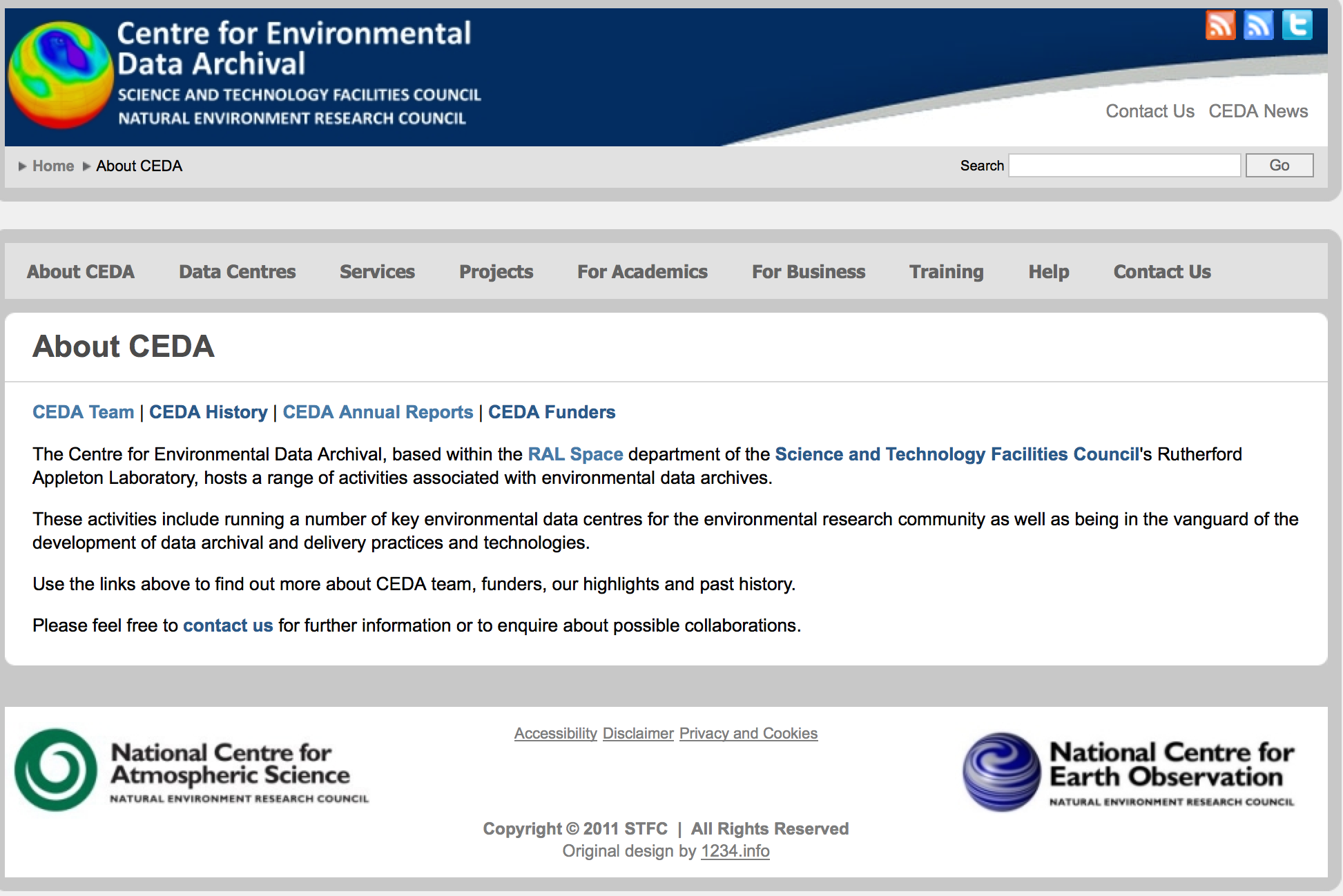
|  |  |  |
| --- | --- | --- |
| **Preservation Risk Management** | | |
| Partner in Charge | **CEDA** | |
| Risk | Description | Action Required? |
| Data Format |  | Standard NetCDF format is highly stable and a CEDA “supported format”. Support of format , quality checking and RepInfo can be provided by CEDA |
| Semantics |  | Support will be provided by CEDA |
| Fixity |  | Data will be backed up and fixity checked in line with CEDA common practices |
| Media Refreshment |  | Data will be backed up and fixity checked in line with CEDA common practices |
| External/Linked Resources |  | Yes website, documents and Subversion code repository link will need to be monitored |
| **Preservation Plan and Status (Immediate action to be taken)** | | |
| Format compliance |  | |
| CF standard names compliance |  | |
| **Preservation Status (Immediate action to be taken)** | | |
| Association with NetCDF RepInfo |  | |
| **Monitoring Plan (aspects to reviewed/monitored by CEDA in long term)** | | |
| Format Review | Review suitability of NetCDF format by Designated community in 10 years | |
| Link to Document Repository | Review stability of link and value of content in Doc Repository in 5 years | |
| Link to Website | Review stability of link and value of content project end + 5 years | |
| Link to Software | Review stability of link an value of content in Subversion repository project end + 5 years | |

# Appendices

## Appendix 1: STFC CEDA

The Centre for Environmental Data Archival, based within the [RAL Space](http://www.stfc.ac.uk/ralspace/default.aspx) department of the [Science and Technology Facilities Council](http://www.stfc.ac.uk)'s Rutherford Appleton Laboratory, hosts a range of activities associated with environmental data archives.

These activities include running a number of key environmental data centres for the environmental research community as well as being in the vanguard of the development of data archival and delivery practices and technologies.



The Centre for Environmental Data Archival was established primarily to facilitate and curate both datasets needed for academic research and datasets produced by such research.

CEDA is primarily funded by the [Natural Environment Research Council](http://www.nerc.ac.uk), but it is also funded by DECC, and the missions differ slightly.

Further information on CEDA can be found here: [www.ceda.ac.uk](http://www.ceda.ac.uk)

## Appendix 2: NERC data value check list

In order to preserve and maintain access to the EUSTACE data products and maximise the impact of the impact of the project in the long term, NEODC must allocate resources in order to do this. Victoria Bennett, CEDA Head of Earth Observation, will appraise EUSTACE output in accordance with the NERC data value checklist to approve resources.

Data Value Checklist - Purpose and scope

The Data Value Checklist aims to identify which data should be considered for accession to the NERC Environmental Data Centres. The individual Data Centres’ collections policies (both written and informal) will assist in deciding which Data Centre is the most appropriate place to deposit the data depending upon the science area and type of data collected.

The Data Value Checklist is intended to be used in the following circumstances:

a) When preparing a full Data Management Plan to assist Data Centres and Principal Investigators in determining the likely long term value of the data to be produced by a project.

b) Upon receipt of the data for deposit with the Data Centres, to assess their

quality, integrity, originality and content

This will ensure that data included in the NERC Data Centre collections are of long term value to the scientific community.

Further information on the NERC data value checklist can be found here: <http://www.nerc.ac.uk/research/sites/data/policy/data-value-checklist.pdf>

## Appendix 3:CF- NetCDF Metadata Conventions

Data producers on the EUSTACE project will be supported by CEDA staff to produce CF-NetCDF compliant data products.

NetCDF (network Common Data Form) is an interface for array-orientated data access and a library that provides an implementation of that interface. Many groups have adopted netCDF as a standard way to represent their scientific data. The netCDF software was developed at the Unidata Program Center in Boulder Colorado USA.

The NetCDF format has a wide range of reasons why it is one of CEDA's recommended formats, including:

* + being extensively used within the atmospheric and oceanic science communities.
  + being a portable self-describing binary data format.
  + it is network-transparent, meaning that it can be accessed by computers that store integers, characters and floating-point numbers in different ways.
  + it provides direct-access: a small subset of a large dataset may be accessed efficiently, without first reading through all the preceding data.
  + it is appendable: data can be appended to a netCDF dataset along one dimension without copying the dataset or redefining its structure.
  + datasets can be read and written in a number of languages, these include C, C++, FORTRAN, IDL, Python, Perl, and Java.
  + the different language implementations are [freely](http://www.unidata.ucar.edu/packages/netcdf/copyright.html) available from [the UNIDATA ftp area](ftp://ftp.unidata.ucar.edu/pub/netcdf/) or from other [mirror sites](http://www.unidata.ucar.edu/packages/netcdf/mirrors.html).
  + several graphics packages support netCDF input, making it very easy to display and analyse netCDF datasets. For instance [FERRET](http://ferret.wrc.noaa.gov/Ferret/) and [CDAT](http://esg.llnl.gov/cdat/) provide both command line and graphical user interfaces for displaying and analysing gridded data.
  + netCDF is completely and methodically documented in UNIDATA's [NetCDF User's Guide](http://www.unidata.ucar.edu/packages/netcdf/guide.txn_toc.html).
  + several groups have defined [conventions](http://www.unidata.ucar.edu/packages/netcdf/conventions.html) for netCDF files, to enable the exchange of data. CEDA has adopted the [Climate and Forecasting (CF) conventions](http://badc.nerc.ac.uk/help/formats/netcdf/index_cf.html) for netCDF data.

CEDA supports and strongly recommends the compliance with the [Climate and Forecast (CF) Metadata Convention](http://www.cfconventions.org/).

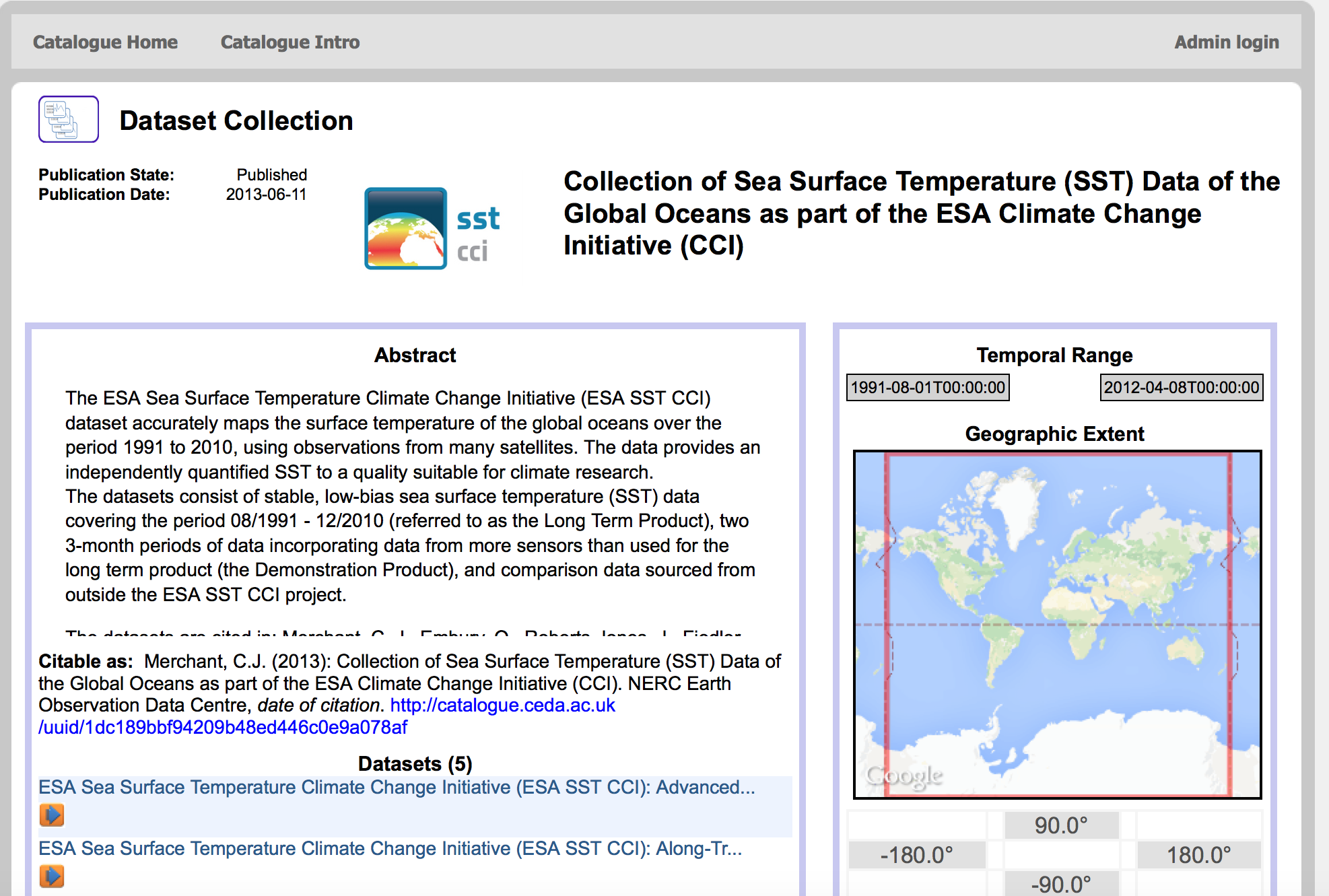
* CF conventions are guidelines and recommendations as to where to put information within a netCDF file, and they provide advice as to what type of information you might want to include. CF conventions allow the creator of the dataset to include information about the data and the dataset itself (metadata) in a structured way, which makes it easier for other users to retrieve the information. Global attributes describe the general properties and origins of the dataset while local attributes are used to characterise the recorded variables.
* CEDA provides [Information on the CF Convention](http://badc.nerc.ac.uk/help/formats/netcdf/index_cf.html), illustrated by some examples.

Further information on the CF – NetCDF standard can be found here: <http://www.ceda.ac.uk/help/users-guide/file-formats/netcdf/>

## Appendix 4: CEDA - MOLES Metadata Catalogue

The MOLES3 CEDA catalogue provides support for organising information about data, and for user navigation around data holdings. “CEDA-MOLES”, also supports data management functions for the Centre for Environmental Data Archival, CEDA.

The latest MOLES3 has enhanced data provenance, for further structured information to support ISO19115 discovery metadata export (for EU INSPIRE compliance), and provides appropriate fixed landing pages for Digital Object Identifiers (DOIs) in the presence of evolving datasets. It compliant with ISO19156 Observations and Measurements (O&M) and provides a standardised framework for organising information about EUSTACE project data. Creating a MOLES 3 record and publishing data through CEDA also exposes EUSTACE project data to other federated discovery mechanisms such as the NERC data portal. The MOLES CEDA catalogue can be accessed here: <http://www.ceda.ac.uk/services/dataSearch/>



ESA SST CCI catalogue record

## Appendix 5: ESGF

The Earth System Grid Federation (ESGF) is a spontaneous collaboration of groups, agencies and institutions around the world, that are dedicated to the development and operation of a long-term system for the management, access and analysis of climate data. Some of the challenges that ESGF is committed to address include:

* The enormous scale of the data holdings, moving from Peta-bytes to Exa-bytes.
* Support for both model output and a wide variety of observational data
* The distributed nature of the data archives, which are geographically distributed and autonomously operated
* The need to enable users to access and analyze data with a wide variety of client tools - not just web browsers, but also rich desktop clients, libraries and toolkits
* The need to harmonize and federate multiple local access policies

The ESGF architecture is based on a system of autonomous and distributed Nodes, which interoperate through common acceptance of federation protocols and trust agreements. Data is stored at multiple Nodes, and served through local data and metadata services. Nodes exchange information about their data holdings and services, trust each other for registering users and establishing access control decisions. The net result is that a user can use a web browser or rich desktop client, connect to any Node, and seamlessly find and access data throughout the federation. (see [ESGF Architecture](https://github.com/ESGF/esgf.github.io/wiki/ESGF_Architecture) for more details.)

At each Node, the ESGF software stack is the result of the integration of multiple applications and servers, either developed by some of the ESGF partners, or freely available from the community. CEDA supports and publishes data to one of these ESGF nodes



ESGF node at CEDA

## Appendix 6: Citation and DOI

Data from the EUSTACE project transferred to the CEDA archives is to be assigned a Digital Object Identifier - or DOI. A DOI enables scientists to cite datasets in the same manner as a scientific journal article, thereby enabling credit to be assigned to the dataset creators, and ensuring the discoverability, permanence and stability of the dataset. For further details on DOIs please see the [NERC DOI webpage](http://www.nerc.ac.uk/research/sites/data/doi/), or refer to the "[Getting a citation for your dat (DOIs)](http://www.ceda.ac.uk/help/archiving-with-ceda/getting-data-doi/)" page in the "Guide to data providers"

A typical citation to use for data with a DOI is:

Science and Technology Facilities Council (STFC), Chilbolton Facility for Atmospheric and Radio Research, [S. A. Callaghan, J. Waight, C. J. Walden, J. Agnew and S. Ventouras]. GBS 20.7GHz slant path radio propagation measurements, Sparsholt site, [Internet]. British Atmospheric Data Centre, 2003-2005, 1st April 2011, doi:10.5285/E8F43A51-0198-4323-A926-FE69225D57DD

The DOI landing page will additionally :

(a) display the EU emblem and  
(b) include the following text:  
  
"This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 640171".

## Appendix 7: JASMIN/CEMS

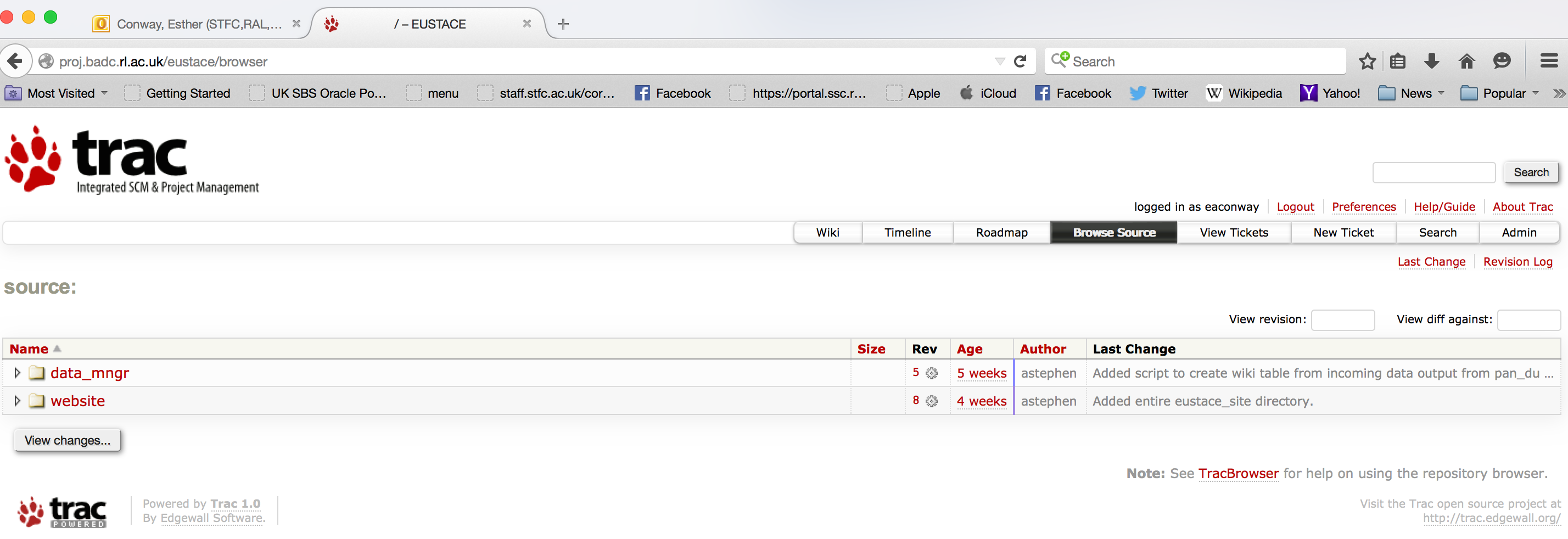
JASMIN provides the UK and European climate and earth-system science communities with an efficient data analysis environment. Many datasets, particularly EO satellite data, are too big to be easily shipped around: JASMIN enables the EUSTACE project to bring their processing to the data.

The EUSTACE project will be provided with self-managing group workspaces and dedicated virtual machines, enabling models and algorithms to be evaluated alongside curated archive data, and for data to be shared and evaluated before being deposited in the permanent archive. Further details on the JASMIN CEMS infrastructure can be found here [www.jasmin.ac.uk](http://www.jasmin.ac.uk)

JASMIN Infrastructure

## Appendix 8: EUSTACE Software and GNU GPL Licence

Software code produced by the project will be stored in a dedicate svn accessible at <http://proj.badc.rl.ac.uk/eustace/browser>



This svn repository will be maintained 5 years post project after which it will reviewed in terms of value to the data archived at CEDA and the need of the broader scientific community.

At the consortium’s discretion the software code will be made publically available under the GPL licence and can be associated with archived data through the CEDA catalogue. The GNU General Public License is a free, copyleft license for software and other kinds of works. More information on the GNU GPL licence can be found here <http://www.gnu.org/licenses/gpl-3.0.en.html> .

## Appendix 9: OGL licence

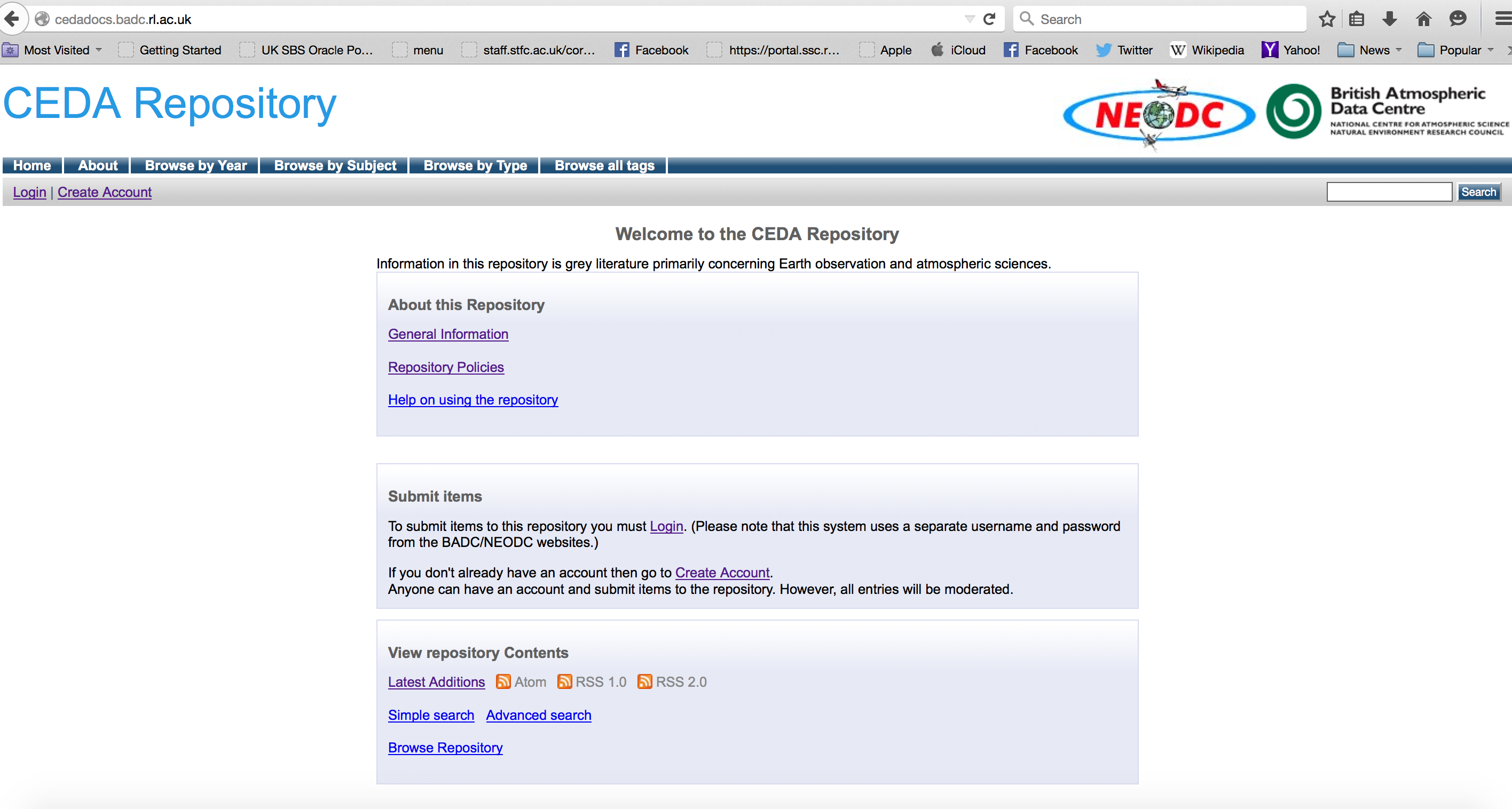
The EUSTACE project will use version 3.0 of the Open Government Licence for data products approved for archival within the CEDA repository. The Controller of HMSO may, from time to time, issue new versions of the Open Government Licence. If you are already using Information under a previous version of the Open Government Licence, the terms of that licence will continue to apply.

These terms are compatible with the Creative Commons Attribution License 4.0 and the Open Data Commons Attribution License, both of which license copyright and database rights. This means that when the Information is adapted and licensed under either of those licences, you automatically satisfy the conditions of the OGL when you comply with the other licence. The OGLv3.0 is Open Definition compliant.

Further context, best practice and guidance can be found in the [UK Government Licensing Framework section](http://www.nationalarchives.gov.uk/information-management/uk-gov-licensing-framework.htm) on The National Archives website.

## Appendix 10: CEDA Document Repository

The CEDA Document Repository will act as the permanent repository for public facing documentation, scientific publications and presentations, which will also be linked to the EUSTACE website. The CEDA repository is for grey literature primarily concerning Earth observation and the atmospheric sciences with all content being publically available. Project partners are encouraged to deposit documentation and presentations in PDF format where possible



CEDA Document Repository: <http://cedadocs.badc.rl.ac.uk/>

The Preservation Policy of the CEDA Documents Repository is as follows

1. Items will be retained indefinitely.
2. The repository will try to ensure continued readability and accessibility.
   * Items will be migrated to new file formats where necessary.
   * It may not be possible to guarantee the readability of some unusual file formats.
3. The repository regularly backs up its files according to current best practice.
4. The original bit stream is retained for all items, in addition to any upgraded formats.
5. Items may not normally be removed from the repository.
6. Acceptable reasons for withdrawal include:
   * Proven copyright violation or plagiarism
   * Legal requirements and proven violations
   * National Security
7. Withdrawn items are not deleted *per se*, but are removed from public view.
8. Withdrawn items' identifiers/URLs are retained indefinitely.
9. URLs will continue to point to 'tombstone' citations, to avoid broken links and to retain item histories.
10. The metadata of withdrawn items will not be searchable.
11. In the event of the repository being closed down, the database will be transferred to another appropriate archive.

## Appendix 11: Data Deposit Agreement

*General Deposit Conditions for Data*

*Data creators or custodians of data held on project group workspaces will be required to agree to the following data deposit conditions before the data are added/transferred to the archive.*

1. *The depositor confirms that he/she is the owner of the data and/or has the right to deposit the data in a NERC archive.*
2. *Ownership of the data remains with the data creator.*
3. *NERC reserves the right to store the data, and make the data available under appropriate Conditions of Use that are consistent with NERC data policy.*
4. *The depositor grants NERC permission to, without changing content, translate the data to any medium or format for the purpose of future preservation and accessibility.*

*.*

1. Centre for Environmental Data Archival [www.ceda.ac.uk](http://www.ceda.ac.uk) [↑](#footnote-ref-1)
2. EUSTACE Wiki: http://proj.badc.rl.ac.uk/eustace/wiki/ [↑](#footnote-ref-2)
3. Consultative Committee on Space Data Standards <http://public.ccsds.org/default.aspx> [↑](#footnote-ref-3)
4. Research Data Alliance <https://rd-alliance.org/> [↑](#footnote-ref-4)
5. Digital Curation Centre [www.dcc.ac.uk](http://www.dcc.ac.uk) [↑](#footnote-ref-5)
6. CEMS academic archive <http://www.neodc.rl.ac.uk/> [↑](#footnote-ref-6)
7. Science and Technology Facilities Council [www.stfc.ac.uk](http://www.stfc.ac.uk) [↑](#footnote-ref-7)
8. CMIP5 <http://catalogue.ceda.ac.uk/uuid/0cff1ec1af330fd5719c144660e24995> [↑](#footnote-ref-8)
9. ESA SST CCI <http://catalogue.ceda.ac.uk/uuid/1dc189bbf94209b48ed446c0e9a078af> [↑](#footnote-ref-9)
10. ESGF <http://esgf-index1.ceda.ac.uk/esgf-web-fe/> [↑](#footnote-ref-10)
11. CLIP-C <http://www.ceda.ac.uk/projects/clipc/> [↑](#footnote-ref-11)
12. OpenDap <https://github.com/ESGF/esgf.github.io/wiki/ClientAccessToESGFOPeNDAPServers> [↑](#footnote-ref-12)
13. CF-NetCDF <http://www.ceda.ac.uk/help/users-guide/file-formats/netcdf/> [↑](#footnote-ref-13)
14. INSPIRE <http://data.gov.uk/location/inspire> [↑](#footnote-ref-14)