CLIPC Continuity Plan Outline

CLIPC Milestone 42 (Sustainability plan outline).

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Background and Scope

CLIPC will generate outputs in a number of areas. Requirements, software, standards, data products, scientific analysis and networks.

The primary target for CLIPC activity is the Copernicus Climate Change Service (C3S). C3S is now in a planning stage, after the contract for management of the service was awarded to ECMWF towards the end of 2014.

In the context of sustainability, there are significant differences between CLIPC and sister projects funded in the same FP7 round (i.e. ERACLIM2, UERRA, EUCLEIA, QA4ECV). Other projects have areas of activity which are aligned with identifiable components of C3S, but CLIPC addresses broad interdisciplinary areas which span a wide range C3S activities. See http://www.ecmwf.int/sites/default/files/Copernicus%20Climate%20Change%20Service%20An%20introduction.pdf for more details – a provisional list of tenders is given in Appendix 1.

Whereas other projects may see sustainability in terms of contributions to tendered activities, CLIPC is dealing with issues which address the integration of services across C3S. For instance, Climate Data Store content is split across C3S six sub-projects and CLIPC is working on standardisation of data formats and publication protocols across the thematic categories of these 6 sub-projects.

This documents discusses the key areas in which CLIPC will develop "foreground" and the avenues for sustainability of activities which are started. The title has been altered from that foreseen in the project Description of Work to avoid confusion with the prevalent interpretation of "sustainability" in the context of climate change adaptation.

This outline will provide a starting point for CLIPC deliverable 9.1 "Sustainability roadmap for Copernicus climate data service infrastructure", which is due at month 20 of the project (July 2015). The topics listed below will be elaborated on in that document.

Value developed in CLIPC

User requirements and networks

CLIPC will generate a broad set of user requirements and develop working relationship with a network of users, including climate scientists, impact researchers, boundary organisations and ,to a lesser extent, societal end users.

Data products

CLIPC will produce a range of enhanced data products. These will include:

- climate data with standardised metadata;
- climate projections adjusted for consistency with key observational datasets;
- statistics of climate data (Tier 1 Climate Change Impact Indicators);
- indicators of impact on the physical environment (Tier 2 Climate Change Impact Indicators);
- indicators of socio-economic impact (Tier 3 Climate Change Impact Indicators).

Methods and tools

Within CLIPC methods and tools that are currently emerging from the research arena will be These methods and tools can then be used as building blocks for developing operational services.

Service components

Service components, such as search and visualisation services, will be enhanced through work in CLIPC. These will be deployed as an instance of the AGUDUC portal.

Integrated infrastructure

The integration of a range of different services is key to CLIPC.

Standards and protocols

CLIPC is developing a range of protocols and standards, and building tools which exploit existing standards.

- INSPIRE and ISO11195 catalogue profile, with SKOS keywords for discovery;
- Vocabularies to define all types of climate data in an integrated SKOS framework

People: knowledge, talents, skills

Through cross-domain interactions CLIPC will build up a valuable body of experienced people.

Pathways for continuity

Category	Comments and Approach
User Requirements and Networks	Ensure that the network of users is informed about C3S developments and opportunities. Ensure that user requirements outputs are presented at appropriate venues.
Data Products	Data products must first be lodged in a secure long term archive which can preserve them beyond the end of CLIPC. Usage should be encouraged by providing the data through services and formats which meet user requirements.
Service Components	Close interaction with IS-ENES2 project will ensure that use of CLIPC service components backed up by that community. Continuing support for the AGUDUC platform at KNMI will ensure that CLIPC foreground in this area is put to use. At this stage it is too early to say how this package will fit into C3S, but it is clear that a data visualisation service of some kind will be needed.
Integrated Infrastructure	CLIPC should maintain an active presence in workshops and meetings associated with C3S to ensure that ideas developed within CLIPC are included in the relevant discussions.
Standards and Protocols	Ensure usage through engagement with the community, engaging in workshops such as the 2014 meeting on GRIB to NetCDF conversion hosted by ECMWF. Exploit standards to give added-value services for high profile climate datasets. Advertise at appropriate conferences: such as the informatics sessions at the European Geophysical Union and American Geophysical Union conferences
People	There is a growing demand for climate services and for people with knowledge necessary for climate service provision. CLIPC will enhance the number and quality of experts in the area of climate data access and climate impact indicators who will be available to C3S and other national and international programmes in this area.

Conclusions

The core route for sustainability for CLIPC will be the emerging C3S service. This is a highly unpredictable route at present because of the short time-scales for the establishment of C3S, but it is clear that there will be many opportunities.

C3S is holding a series of workshops to help shape the pre-operational service: it is vital that CLIPC attends and makes meaningful contributions to these workshops.

Because of the nature of the C3S procurement process, and, now, the existence of the C3S portal hosted by ECMWF (www.copernicus-climate.eu) there is no clear future for the portal as a whole.

Appendix I: Indicative list of C3S sub-contracts

The following list is taken from a presentation given at an information day in January, 2014. The most recent information is available from www.ecmwf.int/en/about/suppliers/copernicus-procurement.

C3S infrastructure

- System software development
- Application software developments

CDS content

- Observation collection and processing
- Observation gridded products (II)
- Regional Climate re-analyses
- Seasonal Forecasts
- Global Climate Projections
- Regional Climate Projections

C3S infrastructure

- System software development
- Application software developments

CDS content

- Observation collection and processing
- Observation gridded products (I)
- Observation gridded products (II)
- Regional Climate reanalyses
- Seasonal Forecasts
- Global Climate Projections
- Regional Climate Projections

Sectoral Information System

- Proof-of-concept (PoC) with three sectors

Invitation to Tender issued on 31st March 2015.

- Extension to other sectors
- Tool box and business developments

Evaluation and Quality Control

- Proof-of-concept: CDS infra structure and content, UR
- Proof-of-concept: SIS development for pilot sectors, UR

Outreach and Dissemination

- Web content provision & management
- Public Outreach
- Events
- Training

Prior Information Notices

Prior information notices have been published for:

Technical Infrastructure: http://ted.europa.eu/udl?uri=TED:NOTICE:165570-2015:TEXT:EN:HTML&tabId=1

Invitations to Tender

Invitations to tender have been issued for:

SIS Proof of concept: http://ted.europa.eu/udl?uri=TED:NOTICE:120089-2015:TEXT:EN:HTML

Seasonal forecast system: http://ted.europa.eu/udl?uri=TED:NOTICE:120091-2015:TEXT:EN:HTML