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Application of open source standards and technologies in the http://climate4impact.eu/ portal

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This presentation will demonstrate how to calculate and visualize the climate indice SU (number of summer days) on the climate4impact portal. The following topics will be covered during the demonstration:
- Security: Login using OpenID for access to the Earth System Grid Fedeation (ESGF) data nodes. The ESGF works in conjunction with several external websites and systems. The climate4impact portal uses X509 based short lived credentials, generated on behalf of the user with a MyProxy service. Single Sign-on (SSO) is used to make these websites and systems work together.
- Discovery: Facetted search based on e.g. variable name, model and institute using the ESGF search services. A catalog browser allows for browsing through CMIP5 and any other climate model data catalogues (e.g. ESSENCE, EOBS, UNIDATA).
- Processing using Web Processing Services (WPS): Transform data, subset, export into other formats, and perform climate indices calculations using Web Processing Services implemented by PyWPS, based on NCAR NCPP OpenClimateGIS and IS-ENES2 ICCLIM.
- Visualization using Web Map Services (WMS): Visualize data from ESGF data nodes using ADAGUC Web Map Services.

The aim of climate4impact is to enhance the use of Climate Research Data and to enhance the interaction with climate effect/impact communities. The portal is based on 21 impact use cases from 5 different European countries, and is evaluated by a user panel consisting of use case owners. It has been developed within the European projects IS-ENES and IS-ENES2 for more than 5 years, and its development currently continues within IS-ENES2 and CLIPC. As the climate impact community is very broad, the focus is mainly on the scientific impact community. This work has resulted in the ENES portal interface for climate impact communities and can be visited at http://climate4impact.eu/

The current main objectives for climate4impact can be summarized in two objectives. The first one is to work on a web interface which automatically generates a graphical user interface on WPS endpoints. The WPS calculates climate indices and subset data using OpenClimateGIS/ICCLIM on data stored in ESGF data nodes. Data is then transmitted from ESGF nodes over secured OpenDAP and becomes available in a new, per user, secured OpenDAP server. The results can then be visualized again using ADAGUC WMS. Dedicated wizards for processing of climate indices will be developed in close collaboration with users. The second one is to expose climate4impact services, so as to offer standardized services which can be used by other portals. This has the advantage to add interoperability between several portals, as well as to enable the design of specific portals aimed at different impact communities, either thematic or national, for example.