

ECSN Annual Report 2005

Prepared by the ECSN Manager, January 2005

General remarks

The 10th ECSN Advisory Committee (EAC) Meeting has taken place in Copenhagen, Denmark, 8-10 June 2005. The Meeting was well organized by the Danish Meteorological Institute. It was a fruitful meeting, also with regard to new activities.

With the retirement of Volker Vent-Schmidt, DWD, the EAC has lost an engaged Chairman. As new Chairman of the EAC, Aryan van Engelen, KNMI, was unanimously elected.

Recently the ECSN Climate Atlas of Europe has been made available on a CD-ROM, providing monthly normals and additional statistical information for selected parameters.

The Austrian Meteorological Institute has prepared a proposal for a new ECSN project "High Resolution Temperature Climatology in Complex Terrain - demonstrated in the test area Greater Alpine Region (GAR)". This new project has been approved by the EUMETNET Council at its 24th Meeting in April 2005.

With the purpose to realize a EUROGRID programme and to study the feasibility of such a concept, a preliminary project for a showcase has been worked out. A proposal for such a showcase was prepared by SMHI in close co-operation with ECSN to create and to promote a rational and quality assured climatological production of high resolution gridded data. This EUROGRID Show-

case has been presented and discussed at the 26th EUMETNET Council meeting in Helsinki. The importance of the content of the project was undisputed and warmly supported. But it was stated that the link with other similar activities, such as the developments connected with EEA and ECMWF regarding the INSPIRE directives, and the link with other ECSN activities, such as ECA&D and ENSEMBLES, have to be improved and integrated in the proposal.

The ECMWF workshop to discuss a potential European Regional Reanalysis project (EURRA) has taken place in Reading, in November 2005. The future results of EURRA, high resolution meteorological fields with about 2 km resolution covering Europe, will mean an immense increase in potential benefits for Europe related to environment, meteorology, climatology, hydrology and to sectors such as energy and agriculture. The ECSN EUROGRID concept has also been presented at the EURRA workshop, and it looked reasonable to relate the EUROGRID concept to the EURRA approach.

The combined Conference of the European Meteorological Society (EMS) together with the European Conference on Applied Meteorology (ECAM) has taken place in Utrecht, in September 2005. This EMS/ECAM Conference contained also a substantial part of Climatology, managed by ECSN.

The 5th ECSN Data Management Workshop has taken place in De Bilt, The Netherlands, in De-

cember 2005. The following main topics have been presented and discussed: Data rescue, Databases, Gridding and UNIDART. About 80 participants have discussed the actual state of climate data management in Europe. This successful ECSN Workshop was very well organized by KNMI.

It is planned that the next combined Conference of the European Meteorological Society (EMS), together with the European Conference on Applied Climatology (ECAC), will take place in Ljubljana, Slovenia, 4-8 September 2006. ECSN will be responsible for the scientific part of the ECAC-2006.

European Climate Assessment & Dataset (KNMI)

Following the document that describes the technical work of the ECA&D project, prototypes were developed for the operational database and for the new web-interface.

In March 2005, the ECA&D participants have been asked for updates of the available data series in ECA&D, and for new elements, as humidity, sunshine duration and snowdepth, to be added in ECA&D, in order to get new inputs to the oncoming Assessment Report. The infrastructure of ECA&D is quite capable of handling such a vast amount of data. But new elements introduced in ECA&D involves the development of new quality control procedures.

These requests from the participants, together with data from other projects, resulted into a vast growing amount of new and updated data series. Currently, the amount of data series has grown from nearly 1000 (March 2005) to 5200 (October 2005). Furthermore, the amount of stations

increased in this period from 300 to 1700. As new data entered the system, new activities needed to be done, such as improving quality control procedures, finalizing the GIS-functionality and procedures which enable to process raw data in various formats in such a way, that this data can be further processed by the ECA&D system. This last point is certainly something that is worth to pick up in the future, for example a development of a general purpose data entry module in the ECA&D system. Experience learned that about 60% of the project time is consumed by transferring the various formats of raw data into the one-size-fits-all format .

Currently, the ECA&D system does now offer all the data that has been provided so far. Also, the GIS-functionality is now available as well. But work continues, in the year 2006 new data will be inserted into the system.

ENSEMBLES (KNMI, MeteoSwiss)

The project ENSEMBLES is a European Union FP6 integrated project (<http://www.ensembles-eu.org/>). It covers climate change modelling on time scales from seasons to decades and model validation using observational datasets.

ENSEMBLES consists of 10 research themes, while each research theme is divided into several work packages. KNMI and MeteoSwiss co-operate in the work package that involves the development of a daily resolution gridded dataset for Europe. The gridded datasets will include several climate variables, as minimum/maximum temperature, precipitation, air pressure and snow cover, and the datasets will go back as far as station data availability allows (45 years, or possibly even longer). The resolution of the datasets

should be high enough to capture extreme weather events.

The gridded datasets are going to be built on a dense network of daily station data. Therefore, the dataset developed in ECA&D serves as a good start for this network. However, the eventual grid resolution is going to be 25 km. For this reason, additional data series have been requested. Furthermore, daily series collated within several other national or international projects will be used to obtain a dense network of data series.

KNMI and MeteoSwiss started in February 2005 with the collation, quality control and homogenization of data series which will be used for the gridding process.

So far, nearly 700 European stations have been collected in the ENSEMBLES database. Since 4200 stations would be needed for a station density of one station per 2500 km², many more data have to be collected!

KNMI and MeteoSwiss are investigating several methods for the quality control procedure to be applied to the ENSEMBLES database, and testing several methods to detect inhomogeneities in the series. The British ENSEMBLES partners will develop and evaluate several gridding methods. The daily gridded datasets should be produced by the end of 2007, and will be accompanied by estimates of data uncertainty.

In order to prevent a chaos in European data policy, the ECSN Delegates have decided that the ECA&D data policy has also to be applied to the ENSEMBLES data. That is to say, the National Weather Services remain the data owners, also for the gridded ENSEMBLES data sets.

A website for the ENSEMBLES gridding project was launched in October 2005:

http://www.knmi.nl/samenw/ensembles_rt5/WP51.html.

Generate Climate Monitoring Products (DWD)

The project Generate Climate Monitoring Products which was completed early in 2004 is continued since then in a quasi operational stage. The climate monitoring products distributed under GCMP are accessible through:

<http://www.gcmp.dwd.de>

The number of participating European National Meteorological and Hydrological Services as well as the number of monitoring products they contribute to the project are still going up, presently 18 Services are taking part.

Meanwhile the development of a successor platform, EuCLIS, starting from the existing prototype GCMP, is under way. According to the plans it will be operational by the end of June 2006. Currently the software design is developed. There will be administration tools available to the participating countries by which they can configure the paths to the products they wish to contribute.

Parallel to the development of the EuCLIS platform, a proposal for the establishment of a new ECSN project "European Climate Information System", EuroCLIS, will be submitted for the provision of national and European climate monitoring products. In EuroCLIS the contributions to the EuCLIS platform and the cooperation of the participating countries will be planned and organized. It is envisaged to extend the participating countries also to the WMO Region VI.

Alpine Tmap (ZAMG)

Recently the ECSN Climate Atlas of Europe, led by Météo-France, has been made available a CD-ROM, providing monthly normals and additional statistical information for selected parameters. In the Atlas project proposal it was stated that the Atlas will be made available without maps. Maps could be added at a later stage when the GIS project reaches a conclusion

In the meantime the Austrian Meteorological Institute has taken the initiative to launch a new ECSN project "High Resolution Temperature Climatology in Complex Terrain - demonstrated in the test area Greater Alpine Region (GAR)". The project will provide a high quality data product for a special European region based on the experiences and knowledge of the involved countries. However, the results and findings can be generalised and transferred to other European countries with a complex orography and therefore with sub-grid scale problems in spatial interpolation.

The project proposal „Alpine Tmap“ has been approved by the EUMETNET Council at its 24th Meeting in April 2005. ZAMG will act as Responsible Member.

The proposed project has a 2-year time-table, and it will compromise on the computation period by splitting the time-frames into two separate steps. Firstly 1961-1990, which is the WMO period and has optimised network density, and secondly 1971-2000, the „modern period“ which endorses the Climate Atlas of Europe.

The main deliverable will be a mean monthly temperature field in a 1km resolution. In addition to its value as a classical state of the art climate

product, the results will serve as direct, and so far not existing, basic data input for a large field of applications in related climate-sensitive research areas.

At the 26th Council meeting the Programme Decisions have been validated and financial support will be given by the countries Austria, France, Germany, Hungary, Italy, Luxembourg, Norway, Switzerland and United Kingdom.

The official project start has been dated with 1st of January 2006. However, a lot of pre-project work has been carried out.

In a first step, data collection was characterised by an intensive search for existing temperature data for the period 1961-1990 with the leading principle to achieve the highest possible spatial density. The original number of collected single station datasets was approximately 1800, but not all of them met the requirements in terms of completeness and data-quality. Finally a network of 1704 stations passed the location-correction and the gap-filling and sample adjustment procedures.

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