

RA VI RCC Network

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With contributions from

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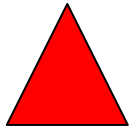
Valentina Khan (NEACC)

Patrick Josse (Météo France)

Overview

Nodes of RA VI RCC Network

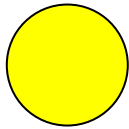
- Node on Climate Data



Services (red):

France, Hungary, Norway, Serbia, Sweden, Turkey;
lead: The Netherlands

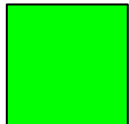
- Node on Climate



Monitoring (yellow):

Armenia, France, The Netherlands, Serbia, Turkey;
lead: Germany

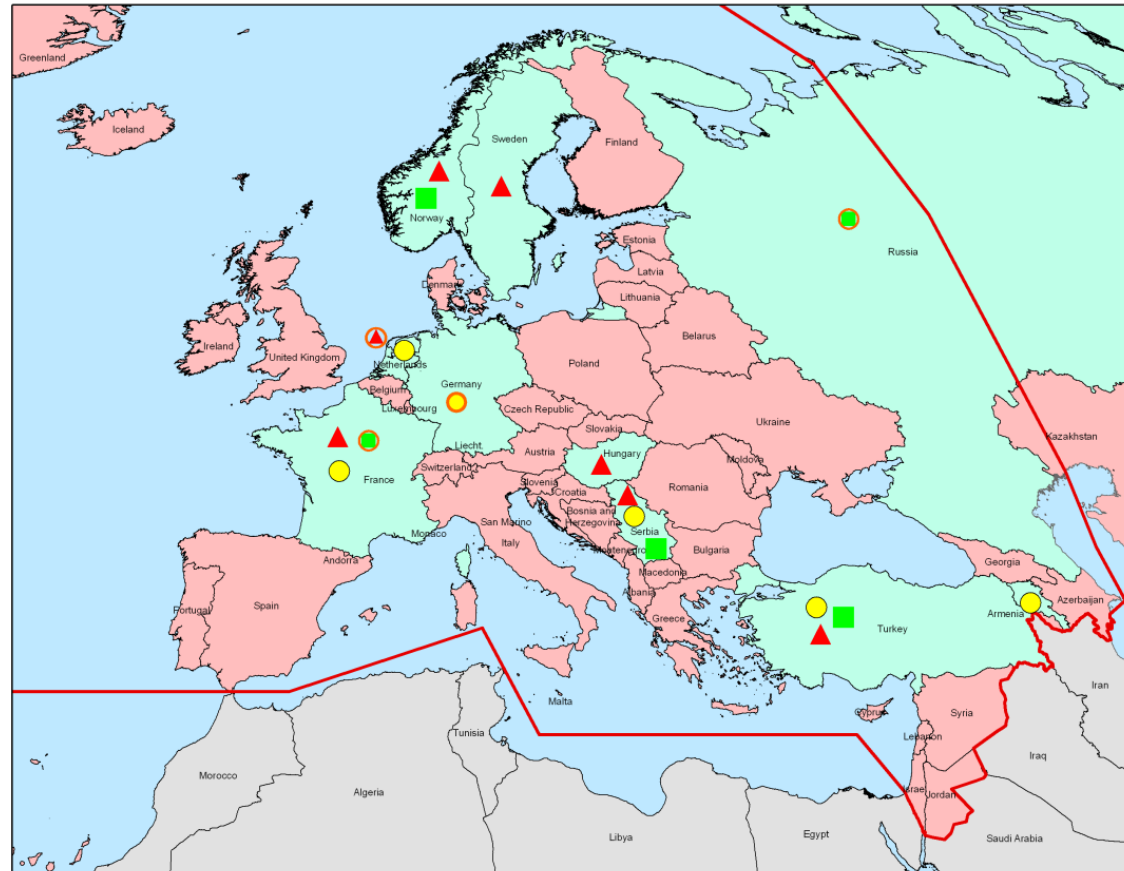
- Node on Long-range



Forecasting (green):

Norway, Serbia, Turkey;
lead: France, Russian Federation

Entry site: www.rccra6.org



1. Node on Climate Data Services

Direct access: <https://www.ecad.eu/RCC-CD/>

RCC Operations: Mandatory Functions



RCC RA VI | RCC Node-CD | RCC Node-OM | RCC Node-LRF

Product catalogue of RCC Node-CD datasets:

- ECA&D (station data)
- E-OBS (gridded data)
- KNMI Climate Explorer
- SE-European gridded model datasets
- Eastern Mediterranean dataset
- BALTEX radar dataset
- SHARK dataset
- CM-SAF Satellite data

The Regional Climate Centre Node on Climate Data (RCC Node-CD)

The RCC Node on Climate Data (RCC Node-CD) provides operational data services to support operational long-range forecasting and climate monitoring by developing quality controlled regional climate datasets and providing climate database and archiving services.

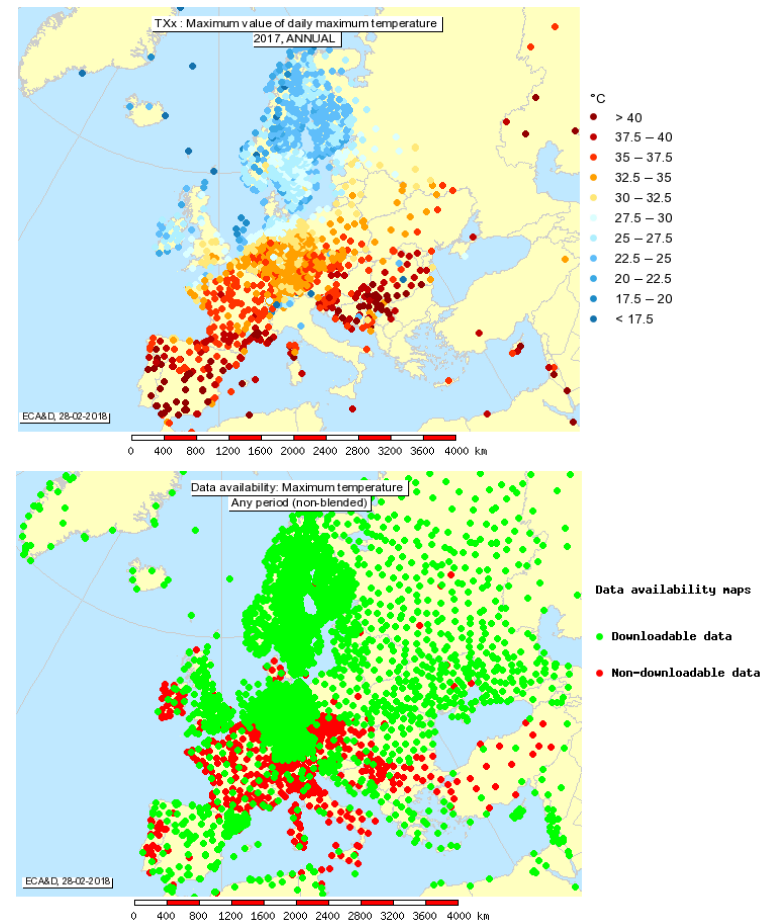
Service overview:

- Quality-controlled regional and subregional datasets (see left menu)
- Safe and recoverable storage of these datasets
- Dataset upload and management toolkit
- Guidance on homogenization
- Guidance on the use of indices and Data Rescue

The following national meteorological and hydrological services form the RCC Node-CD consortium:

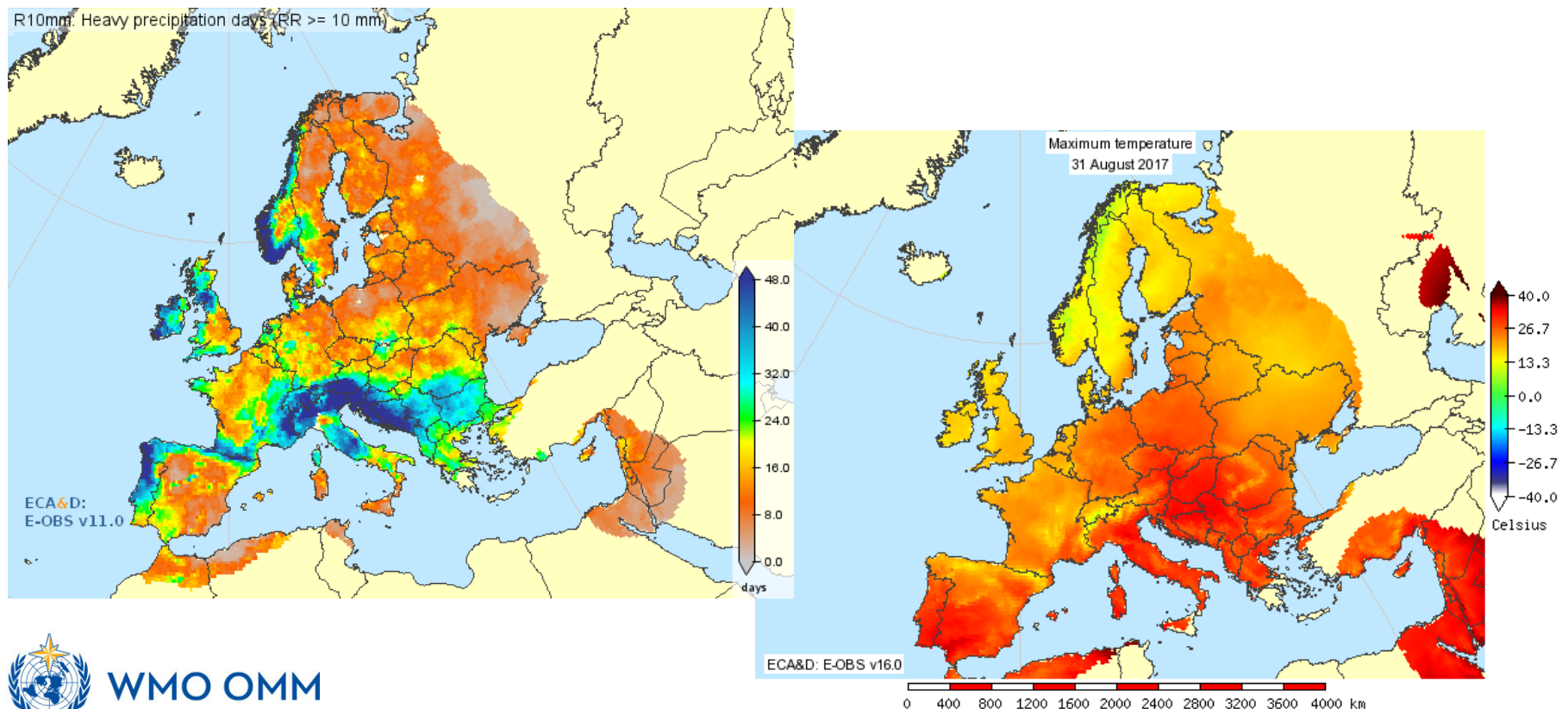
- Royal Netherlands Meteorological Institute (KNMI), Netherlands (Lead)
- Météo France, France
- Hungarian Meteorological Service (OMSZ), Hungary
- Norwegian Meteorological Institute (Met.Nor), Norway
- Republic Hydrometeorological Service of Serbia (RHMS), Serbia
- Swedish Meteorological and Hydrological Institute (SMHI), Sweden
- Turkish State Meteorological Service (TSMG), Turkey

- Daily data sets for download
- Visualisation tools
- Homogeneity tests



1. Node on Climate Data Services

RCC Operations: Mandatory Functions (continued)



1. Node on Climate Data Services

Direct access: <https://www.ecad.eu/RCC-CD/>

RCC Operations: Mandatory Functions

- Regional datasets
 - ECA/D dataset updates from GTS-SYNOP (KNMI, Netherlands)
 - ECA/D dataset updates with high quality time series provided by ECA&D partners (KNMI, Netherlands)
 - Standardized set of 42 extremes indices for ECA/D series in the form of tables, graphs, and maps (KNMI, Netherlands)
 - ECA/D dataset station metadata (KNMI, Netherlands)
 - MILLENNIUM dataset (KNMI, Netherlands)

1. Node on Climate Data Services

Direct access: <https://www.ecad.eu/RCC-CD/>

RCC Operations: Mandatory Functions

- Regional datasets (continued)
 - ENSEMBLES Gridded Dataset E-OBS (TT, RR) (KNMI, Netherlands)
 - South East European gridded model datasets for 1951-2100 (RHMS, Serbia)
 - Eastern Mediterranean dataset (TSMS, Turkey)
 - BALTEX hydrological dataset (SMHI, Sweden)
 - BALTEX oceanographic dataset (SMHI, Sweden)
 - BALTEX radar dataset (SMHI, Sweden)



1. Node on Climate Data Services

Direct access: <https://www.ecad.eu/RCC-CD/>

RCC Operations: Mandatory Functions

- Regional datasets (continued)
 - SHARK dataset (SMHI, Sweden)
- Climatology from global reanalysis
 - CARPATCLIM-DANUBECLIM dataset ERA Interim climatology (RHMSS, Serbia)
- Provision of database and archiving services
 - Safe, recoverable storage of all ECA/D and RCC-related datasets (KNMI, Netherlands)
 - Upload and data management toolkit (KNMI, Netherlands)

1. Node on Climate Data Services

Direct access: <https://www.ecad.eu/RCC-CD/>

RCC Operations: Mandatory Functions

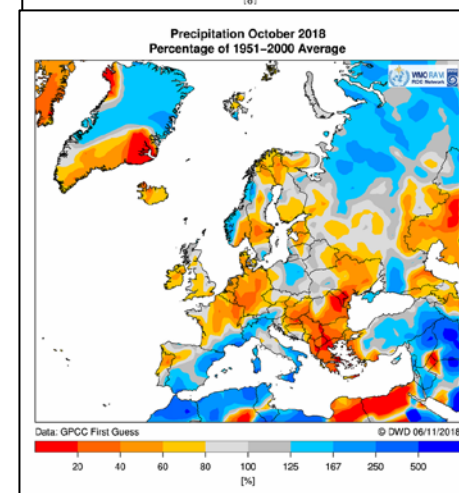
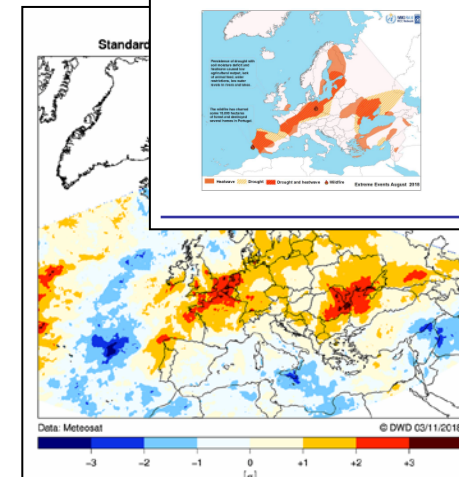
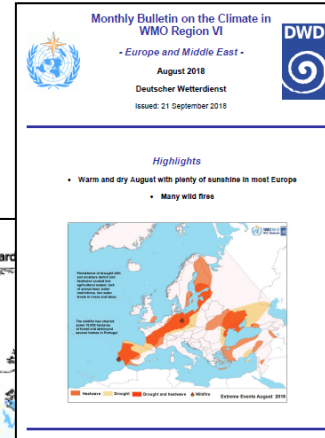
- Information and guidance on methodologies and products
 - Guidance on homogenisation (HMS, Hungary)
 - QC-procedures (KNMI, Netherlands)
- Co-ordination of training
 - Guidance on the use of climate indices and DARE (KNMI, Netherlands)
 - Training course "Climatology, Foundation for Climate Services" (Météo France)

2. Node on Climate Monitoring

Direct access: www.dwd.de/rcc-cm

RCC Operations: Mandatory Functions

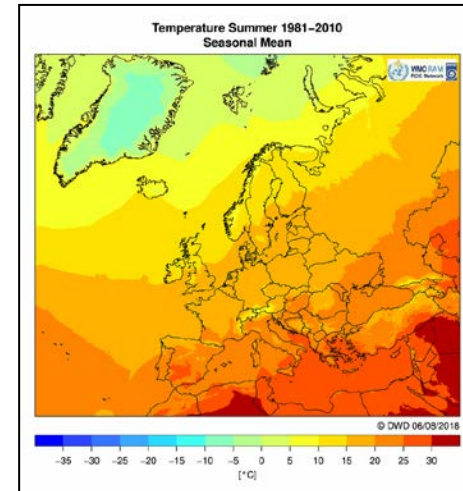
- Climate diagnostics bulletins (monthly, seasonal, annual), based on RCC maps and contributions of NMHSs;
- Key climate monitoring products: climate maps and diagrams (monthly, some daily), most of them available on 10th-15th day of the following month;
- Variables targeted: all Essential Climate Variables (ECVs), presently temperature, precipitation, sunshine duration, snow cover, cloud cover, global radiation, precipitable water, sea surface temperature, sea level pressure, daily maximum and minimum temperature, soil moisture, and derived climate indices (e.g. number of fair and cloudy days, drought index etc.)



2. Node on Climate Monitoring

RCC Operations: Mandatory Functions (continued)

- Historical reference climatology: all variables as far as possible for 1961-1990 and 1981-2010 or dependent on data (e.g. availability of satellite data), different spatial resolution dependent on variable, time resolution monthly;
- Climate watch advisories for RA VI and for south-eastern Europe
- Major constraints: limited resources, limited data availability and data quality



Climate Watch Advisory

Guidance on drought ID: 201808-u10

Area concerned: Particularly parts of western and central Europe (France, Netherlands, Belgium, Luxembourg, Germany, Poland, Czech Republic)

Initial statement issued on 6 July 2018
First update issued on 20 July 2018
Second update issued on 3 August 2018
Third update issued on 17 August 2018
Fourth update issued on 24 August 2018
Fifth update issued on 07 September 2018
Sixth update issued on 19 September 2018
Seventh update issued on 2 October 2018
Eighth update issued on 16 October 2018
Ninth update issued on 24 October 2018
Tenth update issued on 2 November 2018

Valid: Begin: on 6 November 2018 **End:** 12 November 2018

To: Climate Watch focal points of NMHS: France, Netherlands, Belgium, Luxembourg, Germany, Poland, Czech Republic

The RA VI RCC Network Offenbach Node on Climate Monitoring (RCC Node-OM) is responsible for providing Climate Watch guidance information for NMHS for own consideration for issuing climate advisories for their territory.

After having consulted the consortium partners of the RCC Node-OM and RCC Node-LRF (RA VI RCC Network Toulouse and Moscow Node on Long-Range Forecasting), RCC Node-OM issues the following guidance information:

Due to the results from monthly forecasts we expect:

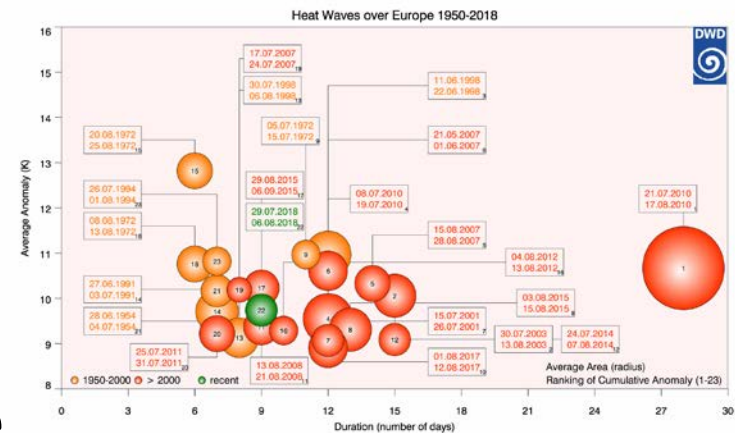
"A continuation of the drought situation for at least the next week for parts of western and central Europe is expected. The probability is locally more than 70% that precipitation will be below the lower tercile.

This drought may be accompanied by water scarcity, low river levels and harvest losses since soil moisture is reduced."

2. Node on Climate Monitoring

RCC Operations: Highly Recommended Functions

- Circulation indices (e.g. Blocking, signals of NAO patterns in temperature and precipitation, ENSO signals in Europe)
- Additional climate variables and indices (e.g. heat and cold wave parameters)
- Extreme event maps
- Climate Knowledge Data Base on Extreme events (KRONER)



2. Node on Climate Monitoring

RCC Operations: Highly Recommended Functions (continued)

- Regional coordination/ collaboration with other RCCs, esp. neighbours of RA VI;
- Coordination with existing centres/ activities (SEEVCCC, ECA&D, EMCC, Copernicus)
- Training/ capacity development;
- Research and Development targeting in new products and services
- Major constraints: limited resources (therefore collaboration with research institutes/ universities)

2. Node on Climate Monitoring

Role in RCOF Activities

- RCC nodes CM and LRF participate actively in RCOFs in RA VI (MedCOF, SEECOF, NEACOF) by leading and providing most of the guidance documents
- Participation of all RCC Nodes in training activities at RCOFs;
- Major constraints: limited resources

2. Node on Climate Monitoring

User Engagement

- Targeted users of RCC are NMHSs
- Feedback of NMHSs are collected on RCC workshops
- Contact to NMHSs via nominated national focal points
- Generic email addresses
- Online feedback forms
- Newsletters informing about new products and relevant decisions
- Most RCC products available for public, some password protected
- RCOFS used for outreach
- Feedback mechanism included in RCC Operation Plan

3. Node on Long-range Forecasting

Lead: NEACC

Direct access: <http://neacc.meteoinfo.ru/> (user/ password needed)

- Activities to improve LRF technology at NEACC and list of LRF products
 - Implementing CHFP and S2S output standards.
 - New snow albedo parameterization in SL-AV, cloudiness retuning.
 - Moving from NCEP2 to ERA Interim data for hindcasts.
 - More accurate SW and LW radiation parameterization (CLIRAD SW + RRTM LW).
 - ALARO-0 microphysics
 - Increased horizontal resolution (0.72°x0.9° lat-lon)

3. Node on Long-range Forecasting

Lead: NEACC (continued)

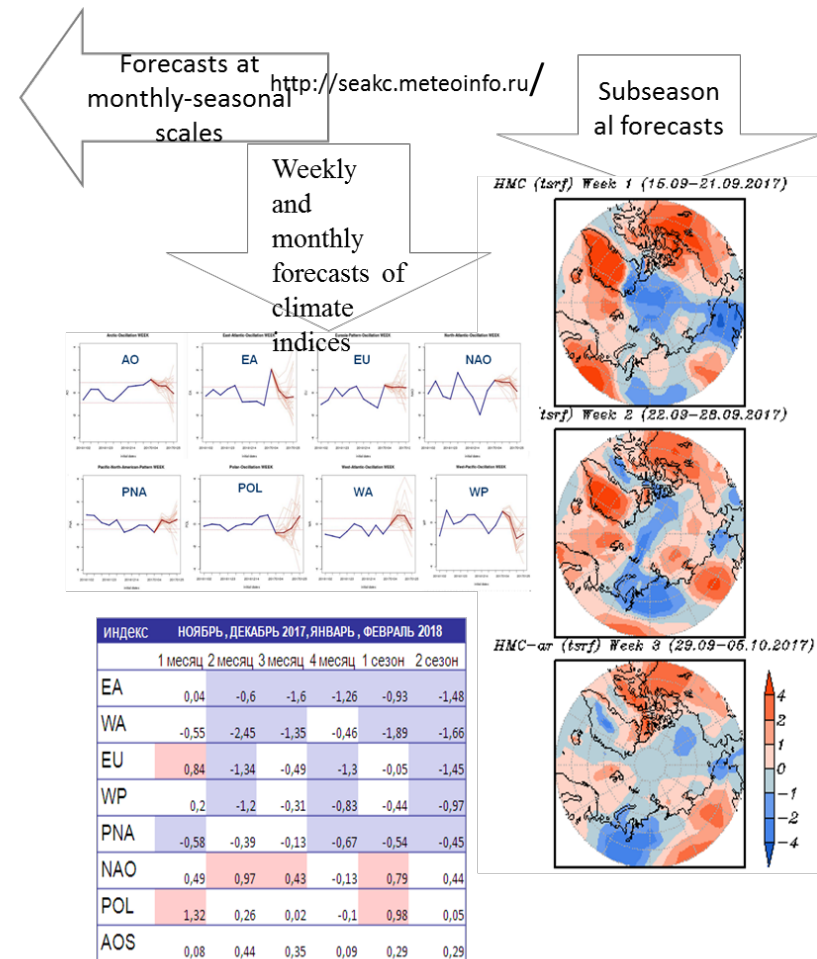
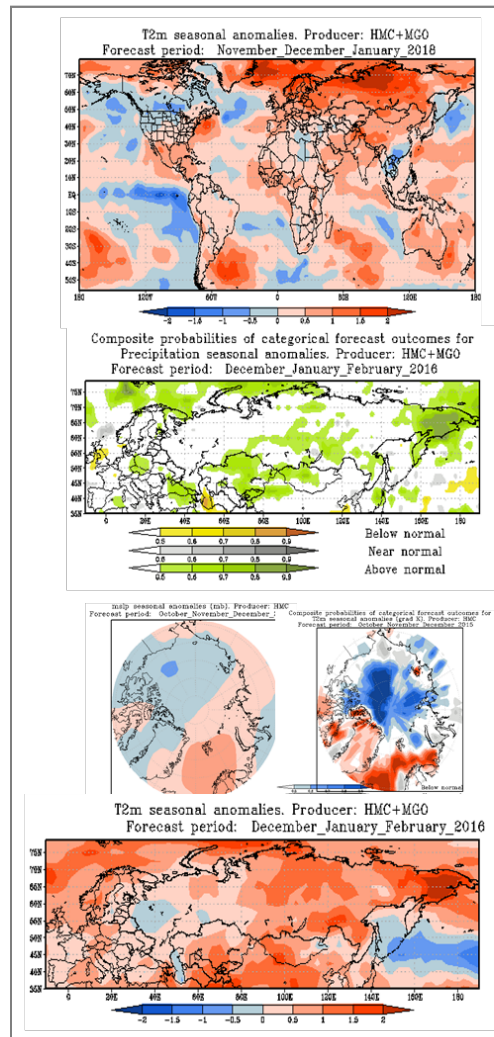
- Prognostic climate information
 - Forecasts for a month or a season on the basis of SL-AV and MGO models (maps, surveys, numerical data)
 - Circulation Indices
 - Intra-seasonal forecasts (new experimental technology)
 - Outlooks of seasonal forecasts
- Forecasts verification
 - Skill scores of operational forecasts
 - Skill scores of retrospective forecasts



3. Node on Long-range Forecasting

Lead: NEACC (continued)

- Example products



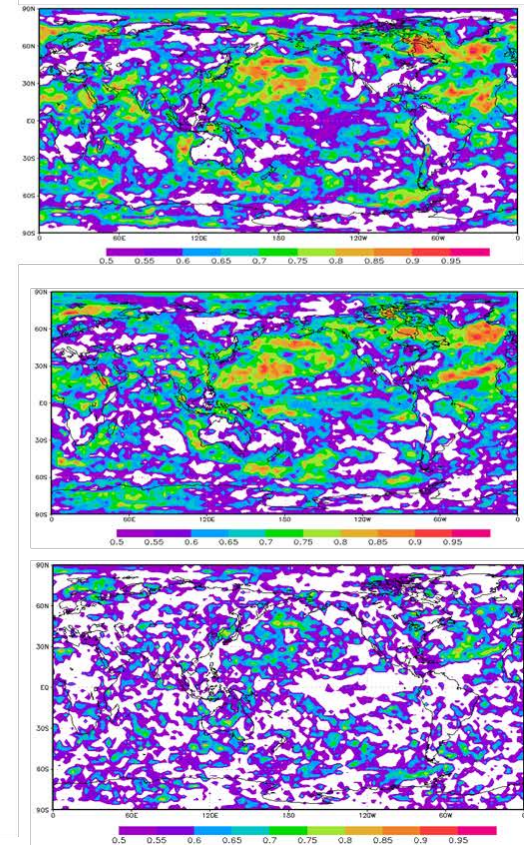
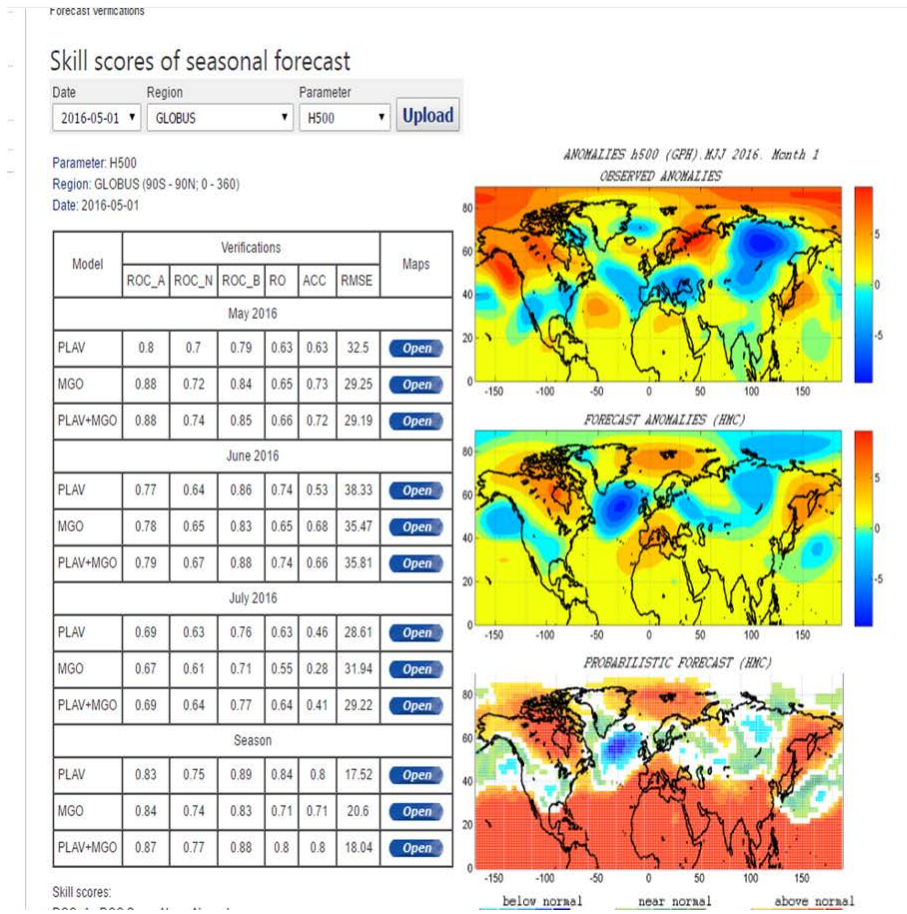
3. Node on Long-range Forecasting

Lead: NEACC (continued)

Skill scores of monthly-seasonal forecasts

Operational forecasts

Hindcasts

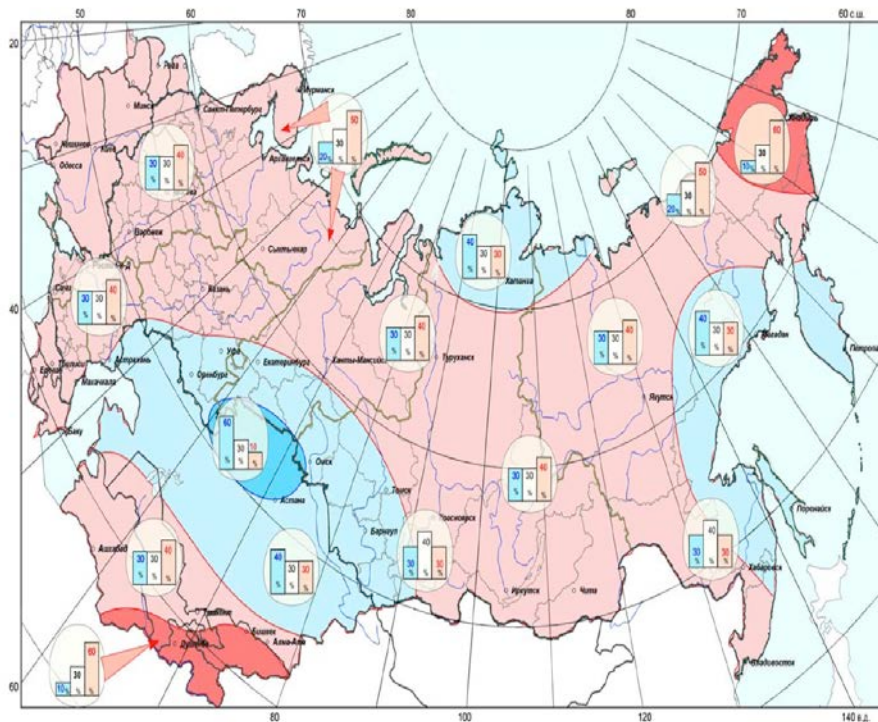


3. Node on Long-range Forecasting

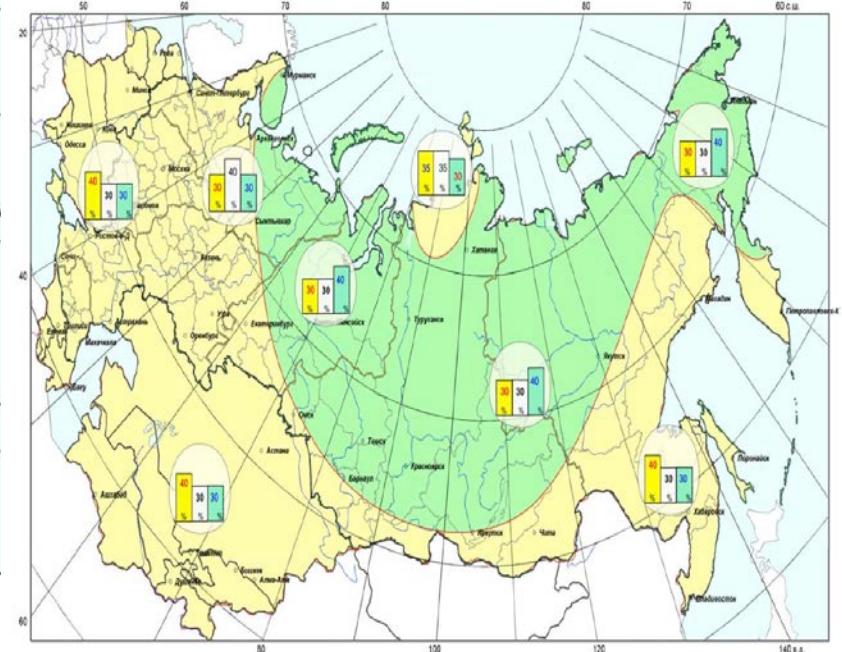
Lead: NEACC (continued)

Examples of consensus seasonal forecasts issued during NEACOF sessions

Consensus air temperature forecast for winter 2017/2018



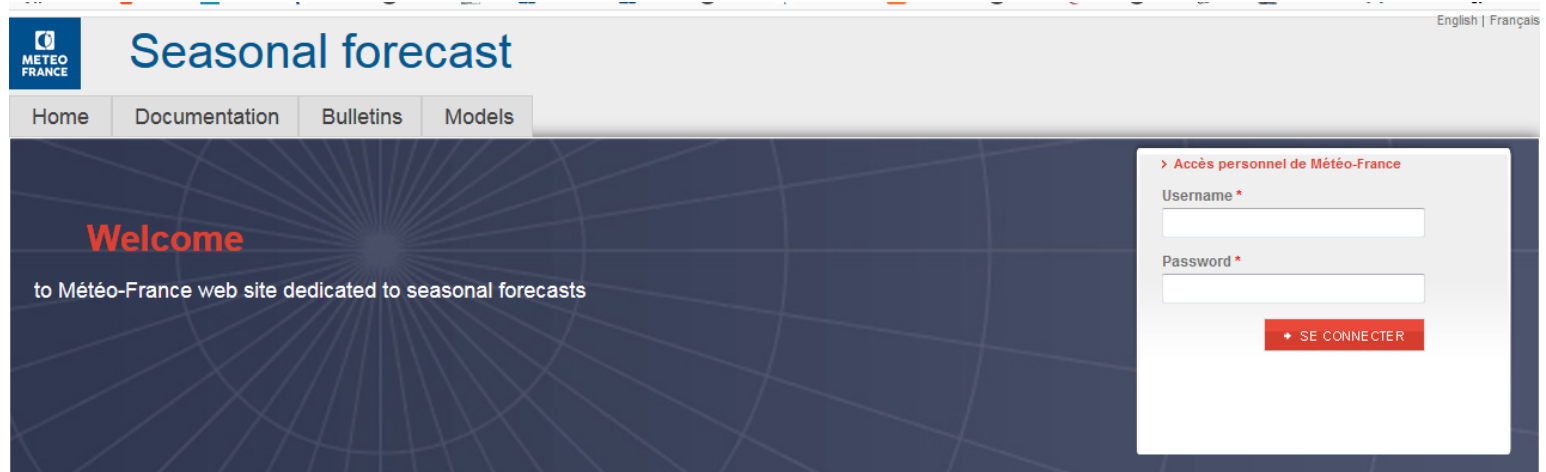
Consensus precipitation forecast for winter 2017/2018



3. Node on Long-range Forecasting

Lead: Météo France

Direct access: <http://seasonal.meteo.fr/> (user/ password needed)



Météo-France has been designated by WMO
as Global Producing Centre (GPC) of long-range forecasts
and as RA6 Regional Climate Centre node on Long Range Forecasts (RCC-LRF).

In this framework, it delivers through this website :

- ARPEGE model forecasts and scores
- Operational products and services within the RA6 RCC Network

RA6 RCC Network useful links

 »RCC Network (RA6) De Bilt Node on Climate Data Services	 »RCC Network (RA6) Offenbach Node on Climate Monitoring	 »RCC Network (RA6) Toulouse Node on Long-range Forecastings	 »RCC Network (RA6) Moscow Node on Long-range Forecastings
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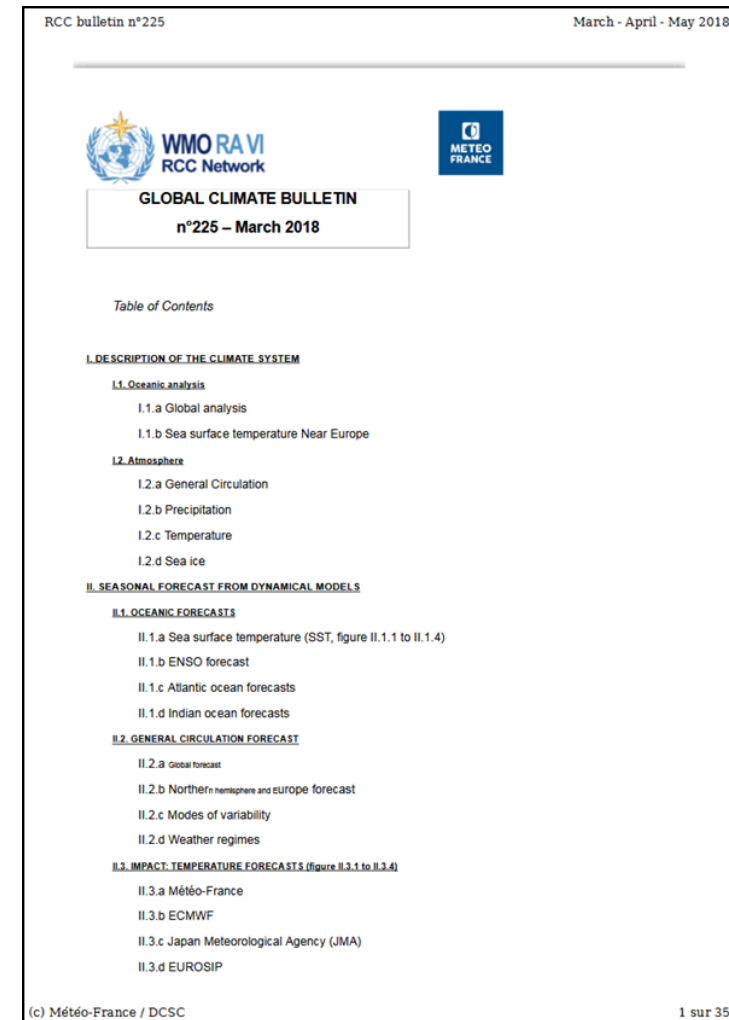


WMO OMM

3. Node on Long-range Forecasting

Lead: Météo France

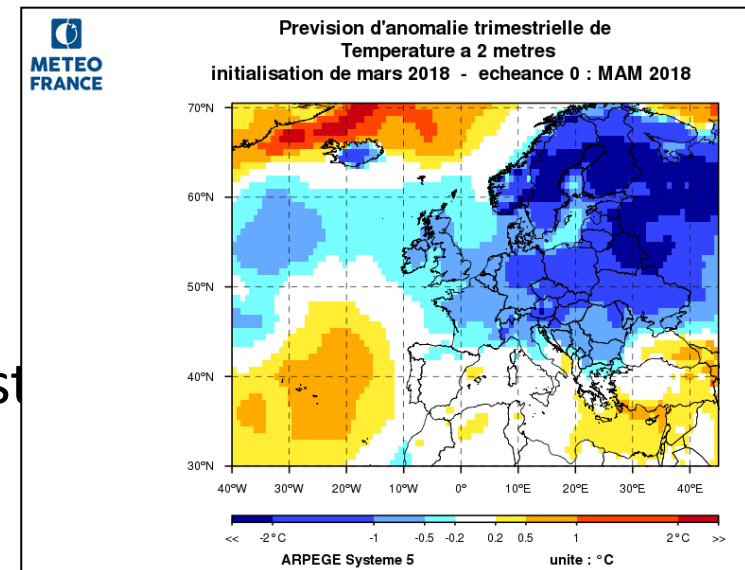
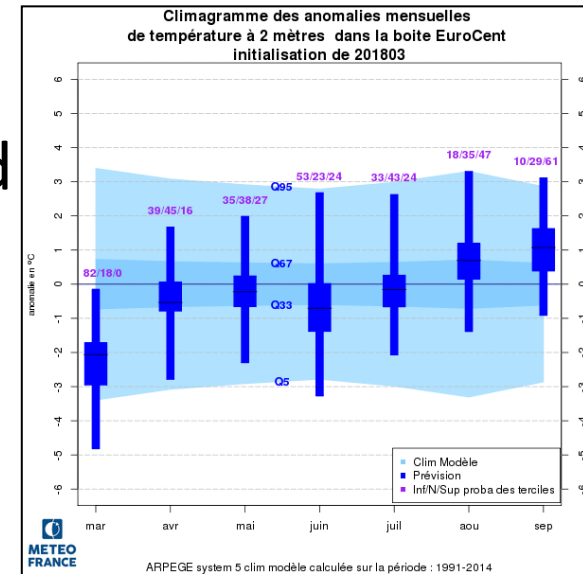
- Monthly global bulletin
 - analysis of the current global climate (focus on Europe with input from RCC Node-CM) and state of the main predictability drivers
 - expertise on GPC forecasts
 - synthesis: text and T/RR probability charts on Europe (human expertise)



3. Node on Long-range Forecasting

Lead: Météo France

- Specific products developed on MF and ECMWF models:
 - global products : velocity potential & stream function ...
 - regional climate products: modes of variability, weather regimes
 - regional impact products : heat wave/ cold spells probability, degree-days
- Climate outlook
- Verification bulletins:
 - a posteriori comparison on forecast from a set of models



3. Node on Long-range Forecasting

Lead: Météo France

- Way forward:
 - Ongoing work on a redesign of the seasonal forecast bulletin
 - Ongoing development of sectorial products (in the framework of European projects like COPERNICUS, MEDSCOPE)

Thank you!

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