

Minutes of the 22nd Annual Meeting of the Working Group on Co-operation Between European Forecasters (WGCEF)

By Christian Csekits, ZAMG (chair) and Jos Diepeveen KNMI (vice-chair)

Thursday 29th – Friday 30th September 2016 - Reading, United Kingdom



List of Participants (in alphabetical order):

BLAAUBOER Dick Eumetnet

CSEKITS Christian ZAMG/Austria

CUSACK Evelyn Met. Eireann

DIEPEVEEN Jos KNMI/The Netherlands

DOUBLET Karen-Helen Met Norway

HAUSEN Robert DWD/Germany

HEWSON Tim ECMWF

*JOHANSSON Mats Swedish Meteorological
and Hydrological Institute*

*KALIN Lovro Meteorological and
Hydrometeorological Service of Croatia*

LAINÉ Mikko FMI/Finland

LANG Will UK Met Office

LEITAO Paula IPMA/Portugal

LETESTU Andre-Charles MeteoSwiss

*MANCZAK Piotr Hydrometeorological
Service of Poland*

MIDTBO Knut Helge Met Norway

OLMEDA Dolores AEMET/Spain

*PALJAK Taimi Estonian Meteorological
and Hydrometeorological Service*

PATERSON Laura UK Met Office

*RALIENE Vida Hydrometeorological Service
of Lithuania*

RAZY Alissa Meteorological Service of Israel

ROULET Bernard Meteo-France

SKELBAEK Michael DMI/Denmark

VANHAMEL Thomas RMI/Belgium

Participants via videoconference:

Mr. Attilio DI DIODATO (Italy),

Mr. Panos GIANNOPOULOS (Greece),

Mrs. Chryssoula PETROU (Greece)

Mrs. Adamantia VLASSI (Greece)

Thursday afternoon, 29th of September

Session I 'Introduction':

Dr Florence Rabier (Director General ECMWF) gave a welcome address. ECMWF was very happy and pleased to host the group. Florence emphasised that these meetings are very important for ECMWF. They are very pleased that a contact person from ECMWF (Tim Hewson) participates in the group. She addressed the important point that WGCEF is a splendid platform for ECMWF for gaining experiences from the operational field of weather forecasting.

-The agenda was agreed and actions were reviewed from the last meeting.

Will and Evelyn gave an opening speech. Will highlighted that the climate of cooperation between European countries has come under pressure due to different crises. But as we all know, scientific progress has always flourished through collaboration. This working group is a symbol and a proof that collaboration is possible and leads to progress in our working field.

Christian and Jos then gave their opening address. Christian mentioned the two most important changes of the last period. WGCEF has become a part of EUMETNET and also ECMWF has joined the group and it's represented by Tim. Christian stressed the importance of collaboration. Jos and Christian are eager to continue the fruitful work of Will and Evelyn in the last years that they were chair and vice-chair. Christian and Jos will take over the role of chair and vice-chair for the next 4 years. Our great thanks go to Will and Evelyn who receive some presents from Austria and The Netherlands.

- Welcome of the new WGCEF members (Christian)

A warm welcome was given to the new members: Robert Hausen (DWD), Paula Leitao (IPMA), Laura Paterson (UK Met office) and Alissa Razy (Met Service of Israel).

Session II 'Updates since the last meeting':

** Round table: participants introduce themselves and giving update on new developments within their NMSs.*

Norwegian Meteorological institute, Karen H Doublet

- Since the beginning of 2016, the MET staff reduced by 10-12%, mostly in the Forecasting division. MET has also been reorganized in one Forecasting division (observations and climate are no longer a part of this division), and one division for development of the forecasting models and services.

- Cooperation on the high resolution model (2,5 km), MetCoOp (Arome) between MET and SMHI, will soon expand to include FMI (Nordic Cooperation). Cooperation on model development and HPC.

- MEPS, MetCoOp (Arome) (operational from 1st November), is running preoperational at the moment. Ten members, 48 hours forecast. Arome-arctic, operational model, 2,5km situated over Svalbard and northpole. Biggest challenge is sea-ice and SST.

- 150 year office anniversary.

MeteoSwiss, Andre Charles Letestu

- Weissfluhjoch radar was the last to be built for the project RAD4ALPS. Pictures are now available. Switzerland has now 5 radars.

- The COSMO 1 (1.1 km) and COSMO E (ensemble, 2.2 km) are now fully operational. COSMO 2 is decommissioned. COSMO 7 (6.6 km) will remain temporally.

- An AUTOMETAR will replace the observer at Geneva-Airport from early October (between 0h and 6h). TRENDS will be issued by the forecaster from the forecasting room. The forecaster will also issue lightning and snow warnings for the airport during the night.

- Auto "flash orange" has been implemented. Ninjo gives a warning proposition in case of heavy thunderstorms. If no action is taken, the warning is sent automatically.

- Some assistants have resumed their diplomas in order to become AMF entry level ad-personam, the others maintain their status as AMO. The AMF ad personam will elaborate TAFs amongst other aeronautical tasks. The tasks of AMO will be observation and elaborate forecasts for the general public.

- One forecaster shift will be designated for research at Geneva.

- MeteoSwiss will not issue road forecasts any more.

ZAMG, Christian Csekits

- Stable number of forecasters (Meteorologists)

- Meteorologists take over weather production for newspapers from meteorological assistants (1 person less: moving to IT)

- Since summer 2016: common night shift of observers and data validation (operational in 2017; further reduction (4 persons) in technical staff: retirement and new jobs within ZAMG)

- Visual Weather running on two independent servers. System stability and safeguarding against failure

- New operational forecasting room (6 instead of 4 working places) and crisis management room are

expected: Now in the approval phase, projected start of construction works March 2017

- Extension of meteorological support for poorer countries (e.g. Moldova, Ghana, Seychelles, Sri Lanka, Myanmar, etc.) in cooperation with UN and World Bank
- Expansion of meteorological assistance for organisers of big open-air events
- Since autumn 2015 science park in the garden
- 130 years anniversary SONNBLICK observatory (3106m)

DMI, Michael Skelbaek

It has been quite a rollercoaster ride DMI has been out since the last update! Last year DMI lost three of their largest customers in the maritime area and together with others circumstances in January a major round of savings, including a staff reduction, was made, and for the first time forecasters were fired. Unfortunately the situation has gone from bad to worse, with the commercial side of DMI not achieving its targets. So DMI is waiting with anxiety for another round of savings in November.

- The supercomputer is now on Island and in spite of the distance it has so far worked perfectly! The cooperation with SMHI and met.no on a common supercomputer 2022 is also progressing as planned.
- Our cooperation in aviation with SMHI is very successful. We are using the same production program for low level forecasting which gives a great benefit for the pilots. The cooperation includes that DMI makes TAF's for Southern Sweden and that both institutions can overtake each other's production in case of emergency
- The NAMCON- portal (Northern-Europe Aviation Meteorology Consortium) NorthAvimet has also been released with great success. The collaboration between Denmark, Estonia, Finland, Iceland, Latvia, Norway and Sweden SMHI has some exciting prospects
- In 2017 it is planned that the current radar will be replaced by a Doppler radar.

Hydrometeorological Service of Lithuania, Vida Raleine

Marine Forecasting Division was reorganized last year and its staff reduced up to 60 %. Weather forecasts and warnings for Klaipeda's seaport in night-time are made by meteorologists of the Weather Forecasting Division in Vilnius (~300 km distance from the sea).

- In the Aviation Meteorology Centre, the Messir Vision workstation has been upgraded, while the Weather

Forecasting Division's specialists have got skills in usage of IBL Visual Weather and MetMorf tools.

- Staff turnover and change of generations. Several weather forecasters in the Weather Forecasting Division as well as in the Aviation Meteorology Centre still are students. So, it's necessary to tune their shifts to lectures' schedule. Four female forecasters are on maternity leave.
- Assistance from EUMETSAT. Two weather forecasters have been granted the EUMETSAT Training Placement. Results of their efforts were presented at the EUMETSAT Conference in Darmstadt this September.
- Though the Lithuanian Hydrometeorological Service's website www.meteo.lt was redesigned last year, it is still less popular than the old version. So, the old version old.meteo.lt is still available to customers. There is a problem regarding weather forecasts – they are different in both website versions because of different ways and different times of data input: in the old version, forecasts are updated manually once a day, in the new one – four times per day, after each run of the model.
- The adjustment of the website to mobile phones is under development.
- LHMS has joined MeteoAlarm in 2015, warnings on the MeteoAlarm website have become available since this March.

AEMET, Spain Dolores Olmeda

- The non-hydrostatic model HARMONIE is still fully operational running on the new super computer (BULL). There are also plans to run a 2.5 km resolution multimodel high resolution Ensemble Prediction System (GLAMEPS) based on HARMONIE instead of HIRLAM.
- The South West Functional Airspace Block (SW FAB) Portugal/Spain has been created and now is in a pre-operational phases consisting of coordination of SIGMET message between both countries.
- Since last week a new software (IBL) for message switching system (Moving Weather) and a briefing software (Aero Weather) for aeronautical affairs is available in AEMET.
- Last summer the first phase of the METAR AUTO project started in selected aerodromes outside normal operating hours. Later on, METAR AUTO will be implemented in other airports when needed. All these procedures are being put into operation according to the air navigation service provider (ENAI) and the airports authority (AENA).
- AEMET provided meteorological support to the "Tall Ships Races 2016", which began on July 7 in Antwerp and ended in A Coruña on August 14.

Meteorological Service of Israel, Alissa Razy

International Collaboration

- IMS joined Working Group for the Cooperation between European Forecasters.
- IMS joined two EUMETNET programs – EUMETCAL & EMMA (METEOALARM). The integration into METEOALARM will probably be apparent in the METEOALARM web site sometime in the beginning of 2017.
- After two years of participation in the scientific research of the European Consortium for Small-scale Modeling (COSMO), IMS is in the process of joining the consortium as a full member. The COSMO General Meeting in September 2017 is planned to take place in Jerusalem.

New Technologies & Forecasting Tools

- The IMS IT-department developed a forecaster interface to visualize lightning detection measurements of the Israeli detection network (consisting 11 detection sites across the country). The system has a built-in alarm to notice the forecaster of a region of frequent lightning, suspected as severe TS.
- The Israeli local COSMO model was updated – a 2.8 km run based on the ECMWF 9 km deterministic runs. 4 times a day runs, including data assimilation of radar, AMDAR, surface observations and radiosondes. The quantitative precipitation estimate was significantly improved.
- The process of renovating the meteorological infrastructure at the Israeli airports is in its final stage – all airports are now equipped with full Automated Weather Observing Systems (AWOS) including ceilometers and visibility meters (forward scattering) which report in real time every few minutes to the forecasting center. The LLBG airport has full CAT II systems (including 8 RVR sensors). A new international airport is built in the desert, the vicinity of Eilat, with complete AWOS.
- IMS is in the process of installing an AWOS on a Voluntary Observing Ship (VOS). Out of the ~10 VOS reporting to the IMS, one will be installed with an AWOS and will report every 1 hour through satellite communication in the Mediterranean and the Atlantic.

Education & Training

- IMS with the Bar Ilan University is producing a series of academic courses in Meteorology intended to enable non-science graduates to gain the necessary scientific background in Meteorology needed to comply with WMO Meteorologist requirements – Atmospheric Radiation, Remote Sensing, Thermodynamics, Cloud Physics & Dynamical Meteorology

- IMS will be celebrating its 80th Anniversary in 2017 !!

IMGW Poland, Piotr Mańczak

- There haven't been any big changes in organization of work in weather forecast offices, no significant developments have been implemented either.
- IMGW has participated in the organization of the World Youth Days in July. We prepared special forecasts and warnings, which were available for pilgrims via special website and on apps. During this event IMGW cooperated with military meteorologists (e.g. everyday on-line meetings), because the army is responsible for VIP's protection (the Pope, in this case). We took this opportunity to extend meteorological data exchange with the army.
- IMGW has been exchanging meteorological data with General Directorate of The State Forests since last year too.
- In March, we organized Baltic+ course in Warsaw, which was a part of the training programme of National Meteorological Services from Estonia, Latvia, Lithuania and Poland, under the sponsorship of EUMETSAT. This course has consisted, for the first time, of 2 parts: 3 weeks on-line and 3 days stationary.

FMI (Finland), Mikko Laine

- Petteri Taalas was elected as a Secretary-General of WMO for a four year term 2016-2020. Juhani Damski new Director General of FMI. Anssi Vähämäki is the new head of Weather and Safety Centre.
- Aviation weather service in Tampere has been closed and moved to Helsinki. Now in Helsinki there is one 24/7-office for civil-aviation service, and other office doing two shifts for military weather service. All aeronautical meteorologists from Helsinki and Tampere have been trained to work on both desks.
- Sounding station in Tikkakoski, middle of Finland, will be closed end of year 2016. Next year we only have two operational sounding stations, one in southern Finland, other one in northern Finland.
- MOS (Model Output Statistics) operated temperature in operational use from summer 2016.
- Joint Nordic operational numerical weather prediction. (Finland, Norway, Sweden, Denmark) Plans for a joint Harmonie model in 2016 and a joint super-computer 2018.

RMI Belgium, Thomas Vanhamel

- For D+3 to D+5: forecasters can give early-warnings for excessive rain and thunder.

- Updated procedure in collaboration with the (Flemish) government for heat warnings. Wallonia: in cooperation with the public service of Wallonia.
- Development of thresholds for issuing heat-warnings for Wallonia using the wet bulb globe temperature.
- Two forecasters successfully assisted a racecar and airplane using solar energy in a race...
- Expertise weather forecast flux. Yield hourly DMO for 11 Belgian regions which can interactively be adapted by the forecasters on duty and interpolated in time/space.
- New forecasting “paradigm”: automated hourly forecasts where people can customize their warnings and forecasts (i.e. risk of frost at a certain location etc).
- Implementation of a drought index using precipitation data (SPI) and modelled soil moisture (from the hydrological model at the RMI).

DWD, Robert Hausen

- Further progress in including more efficient automatic-generated warning suggestions in actual state of warnings (especially for parameters wind and thunderstorms).
- Customer-dependent delivery of warnings (several products with only basic or more detailed information).
- Successful development of our DWD Warnwetter App, actually more than 2 million users.
- Advancement/upgrading to a natural multi-hazard App (including storm floods, avalanche warnings, flood forecasting, etc. from other authorities) is planned.

Estonian Weather Service, Taimi Paljak

- Development of HARMONIE model.
- Implementation and development FMI Road Weather Forecasting Model
- ISO certificate for the whole forecasting department

Meteo France, Bernard Roulet

Warning procedures

- Changes in vigilance procedure: tooltip on website displays parameters and timing for yellow vigilance.
- Experience feedback after the catastrophic event of October 3rd 2015 in Cannes (20 casualties)
- New threshold for urban areas for red vigilance
- Warnings are broadcast on mobile phone
- Radar images are available on internet
- Outlook: Meteo France and other partners (Civil Security, etc...) are working to take into account vulnerability and to adapt vigilance procedure to smaller areas

Models

- High resolution coastal wave model is operational (200m resolution)
- High resolution model AROME (2.5 km) is available for overseas French territories
- AROME-PI nowcasting high resolution model (1.3 km) is operational
- AROME-PE high resolution ensemble model (2.5 km) pre operational
- global model ARPEGE: test for new schemes of convection parameterization and surface conditions

Organization

- Continuous reduction of staff
- Launch of a project of a new fully automated production database. Major change for forecasters that now fill database: in the next 3 years, they will be reassigned to services for customers.

UK Met Office, Will Lang

- In 2015 the Met Office published an independent review of its value to the British economy, estimated at £30 billion (~36 billion euros) over the next 10 years. We have also promised the Government that we will cut costs substantially while improving quality of services over the next 4 years. So to deliver both this value and savings, a new change initiative, the 'Transformation and Efficiency' programme is now underway. A key component of the problem will be a radical redesign of our forecasting processes which enables high-value forecaster advice to be fully integrated with the data streams used in our products and services.
- In addition, the latest upgrade to our NWP suite will see the domain of both the 1.5km UKV model and 2km MOGREPS-UK ensemble increased substantially, and the temporal range of these high resolution models increased from 36hrs to 120hrs.

KNMI, Jos Diepeveen

- From the beginning of 2016 we started to make forecasts for Dutch Caribbean parts: Saba, St Eustatius (Statia) Bonaire. (Before it was outsourced to Meteo Curacao).
- With the coming of a new super computer next two years we will be able to calculate ensembles for Harmonie.
- Installation of 2 new radars, dual pol. Operational coming year.
- Weather room will develop into warning and advice centre, with different kind of hazard types being monitored.

- Impact based warning are further developed, in cooperation with UKMO.
- Struggling with the perspective of citizens, are we fully aware of their needs, discussion about setting up a citizen panel.
- We are investigating a new meteorological workstation; colleagues have visited FMI, next year operational. Aim is to integrate all the data and combine it with a production tool.
- Changes of the role of a forecaster, all are working in projects, research or doing customer relationships.
- Number of staff is fairly stable and no big reduction is to be expected.

MET EIREANN, Evelyn Cusack

- New Director appointed, Dr Eoin Moran.
- As the long economic recession begins to recede 10 new meteorologists have been appointed, some to fill vacancies but some newly created posts for PhDs in meteorology.
- A new Flood Forecasting Centre has been agreed on by the Government to be located in the forecast office. 11 new staff are to be employed, some being a new cross-breed between a hydrologist and a meteorologist ie a hydrometeorologist.
- Climate stations continue to be automated.

SHMI, Mats Johansson

- Started to upgrade our radar stations. We finished the third one earlier this month. Nine left and all of them will be finished late in 2018.
- Work started to upgrade our observation stations so that we should be able to get observations more often than once in an hour.
- For a couple of years we have been running the high resolution model Harmonie (Arome) together with Norway. We are now also running a high resolution ensemble.
- Started a study about impact-based warnings.
- Done a lot of upgrades of products on www.smhi.se. Unfortunately we have very few products in other languages than Swedish. Introduced an ensemble forecast with up to three different solutions of the forecast.
- Investigating the possibility to work together with FMI with the Ice-chart for the Baltic Sea.

IPMA/Portugal Paula Leitao

- Problems with funding due to the financial crisis. Therefore collaboration with other geophysical fields.
- Providing the weather via an App.
- New 3d radar, whole country is covered now.
- Weather stations maintenance is now done by IPMA itself.

- Pre-operational AROME 4 runs a day.

DHMZ (Croatia), Lovro Kalin

- Forecasting Department - cca 10 people (+ 2 apprentices on minimum wage)
- Maritime Branches in Split and Rijeka (7+3 forecasters)
- 2 duty forecasters + 1 on HRT (Croatian Radio-Television)
- general forecasts (public, Government, media etc.)
- special forecasts (road maintenance, forest fires, energy company etc.)
- warnings (general warnings for Civil protection service, MeteoAlarm, heat waves...)
- Difficulties with employment of new people (Government restriction) several people on apprentice program (minimum wage), one employed, other waiting in Rijeka local authorities financially • supported necessary employment
- participation on international weekly video-conference on forest fire coordination
- flash floods warnings (within MeteoAlarm) - cooperation with Hydrology Division
- synoptic climatology - Determination of weather types
- 24-hour shift introduced in the Maritime Branch (Split)
- New workstation (Visual Weather) It's in the configuration process (a lot of work to be done) First phase (2017) - visualisation of prognostic products Second phase - production and dissemination of end-forecasts
- In 2017 the following is to be expected: Introduction of Workstation to operational practice. Introduction of new forecasts (e.g. cold spells - this winter?) Implementation of CAP protocol.
- A new big project (METMONIC) is proposed for the EU funding (cca 30 mil Eur), in order to modernize and build a comprehensive observation network (new radars, vertical profilers, automatic stations, buoys etc.)

ECMWF, Tim Hewson

- ECMWF continues to expand, Copernicus staff now at Reading University, due to lack of space, not ideal.
- Tender out for new supercomputer site, tentative bids from Iceland, Finland, Luxembourg, Italy, + Exeter and Slough in UK. Decision expected Feb 2017.
- Possible relocation of staff to be considered after that, still very uncertain
- Uncertainty regarding the impact of BREXIT on EC. Watch this space. Core is not EU funded, but special

project work is, and in particular Copernicus. “Business as usual” on these fronts for now at least.

- My team at ECMWF has recently expanded; should permit more work on model products (staff are EU funded, as part of the IMPREX and ANYWHERE projects)
- More work now at ECMWF on post-processing and statistical downscaling (e.g. to predict point rainfall). Outcomes are still to be decided, though a flash flood layer in GLOFAS is a definite target.

WGCEF Newsletter

- * Discussion of the 21th WGCEF Newsletter (Bernard)
- * WGCEF website and social media report (Andre-Charles)

EUMETNET update (Dick Blaauboer)

On the future of EUMETNET: the current phase of the programmes will end 31/12/2018, which means an extension of one year. The EIG agreement between all Members (31 NMHSs) signed in 2009 will expire in October 2019. A new EIG agreement, ready by end of 2018, will be synchronized with the new Programme Phase, starting January 2019.

A European NMHS Strategy Paper 2015 – 2025 has been adopted by the Assembly in spring 2016. A EUMETNET Strategy Implementation Group (ESIG), a group of directors led by Peter Binder from MeteoSwiss, elaborated the strategy in new ideas for cooperation. The report was also adopted in spring this year. During summer 2016 Task Teams were established to explore these new areas for cooperation. They will report to STAC and PFAC early October 2016.

The projects: all projects in the forecasting domain, EMMA, EMMA-H, Eumetcal, C-SRNWP, SRNWP EPS II, ASIST are well underway, details can be found on the website:

http://www.euroforecaster.org/presentations_2016/eumetnet.pdf

Main themes of the yearly Heads of Forecasting meeting in Warsaw in May 2016 included “Impact based warnings and forecasting” and “Changing role of the forecaster”.

Related non-EUMETNET projects:

- Aristotle, kick-off in Rome, February 2016: <http://aristotle.ingv.it/>. Seven individual NMHSs and EUMETNET are joining, a project financed by and in support of the ERCC in Brussels.

- High Impact Weather project, part of WMO WWRP, kick-off in Exeter, April 2016, multi-disciplinary approach of HIWeather, important research supporting impact based forecasting/warning.

Update on EUMETNET Storm-Naming Task Team and presenting the new head of the Task Team (Christian)

First Christian gave a short overview of the ambition and mission of this task team. Then he presented – as key aspect of his talk- the next steps for the future to get ready with this project for the next phase of EMMA, which should start in 2019. First we seek for two NMSs that want to do the storm naming for intense lows affecting the Mediterranean region. Moreover rules for coordinating the different regional storm naming systems have to be developed to ensure that a low causing severe weather has only one and the same name in whole Europe. Furthermore cooperation with the WMO in analogy with tropical storm naming has to be organized. Collaboration with University of Berlin is also necessary to avoid that different names for the same storm are used. And finally the project proposals for EMMA have to be prepared.

- Integrate the storm naming issue into the new phase of EMMA.

- Depressions/Storms should have the same name over whole Europe.

- Evelyn is unanimously chosen as the new storm task leader.

- A compromise have been found with the University of Berlin.

Session III ‘Presentations

*Bernard Roulet: ‘AROME PI - new Meteo France Nowcasting Model’

AROME-PI is a the new nowcasting operational model of Meteo France. It has a lot of similarities with AROME (same resolution, same coupling model, etc...) but also differences: the data assimilation is very short [-15mn, +15mn] so a great weight is given to observations (especially surface and radar observations). AROME-PI is a non cycle model with 24 runs times a day. First guess is given by an AROME forecast. Each run of AROME-PI has a 6 hour forecast with 15mn frequency outputs. Results can be displayed on forecaster workstation but also with tables that help identify useful parameters (for example deep convection parameters, winter diagnoses, etc...). Objective scores show that AROME-PI has better results than AROME especially in the first 2 hours.

* Lovro Kalin: ‘Case study and warning verification’

Experiences with new ECMWF precipitation type products are presented, based on a single (and so

far the only) case in January 2015. Freezing rain was announced even in the medium range (D+120 hours), and was consistent as the date approached, so red warning was issued in timely manner. As forecasted, event lasted whole afternoon and evening, covering significant part of continental Croatia. However, no major damage or casualties were reported, probably due to low precipitation amount. A simple verification of warnings issued by the Forecasting Department are presented, mostly in a form of 4x4 contingency table (green, yellow, orange, red). For heavy precipitation, a significant number of misses is noticed, partly due to the very rainy season (2014), with several unpredicted strong convection developments. For the strong wind events, signal is significantly better due to a large number of strong bora episodes, that are very frequent on the Adriatic coast. For heat waves, results are better for extremely hot 2015 season, compared to less hot 2016 season. In 2016 a significant number of misses is noticed due to low predictability of (high) morning temperatures on the Adriatic coast, and partly due to high sensitivity of the algorithm (narrow thresholds).

*** Alissa Razy:
'Operational forecasting in Israel'**

The Israel Meteorological Service (IMS) is the newest member of the WGCEF. Although some may be surprised by the inclusion of Israel in a European-based group, the state is already affiliated with Europe in many fields, including meteorology e.g. WMO Region VI-Europe; ICAO Region L-Southern Europe, Israel and Turkey. Originally founded in 1937 under the British Mandate Government with Rudolf Feige as director, it became the IMS in 1948 with the creation of the state of Israel, under the Ministry of Transport. Over the years the IMS has joined various international organizations, including the ECMWF, INCA, and COSMO. The research department of the IMS is involved in various projects associated with these organizations, and the climatology department issues reports, reviews, and the climatological atlas. The operational meteorology department is responsible for issuing forecasts for the public, aviation, sea forecasts, fire weather, and pollution forecasting. Some challenges faced by forecasters in Israel: sharp changes in climate and topography over small areas, leading to highly disparate weather over small distances and compromising representation in global models; also, lack of upstream observational data due to Israel's location west of both a large body of water (the Mediterranean Sea) and data-sparse north

Africa (few sounding stations coupled with a lack of recorded or transmitted surface data by unstable countries). Examples of significant weather events include flash floods in cities and in the desert, dense fog, frost, snow, supercells and microbursts, and dust/haze events. Of note is the heavy dust event of September 2015, where a significant dust cloud was kicked up in Syria and advected south-southwestward into Israel, leading to 4-5 days of low visibility and poor air quality. This event was exceptional in many respects: the time of year, the expansiveness (state-wide), the amount of time it persisted, and the source of the dust were all rare if not unprecedented aspects of dust events in Israel.

*** André-Charles Letestu:
'New visualisation of the severe
thunderstorm checklist'**

For many years, forecasters at MeteoSwiss have computed a severe thunderstorm checklist in order to help his or her decision to issue warnings. The checklist has been developed to overcome the models weakness to represent convection. During the summer season, a checklist index is calculated daily, for both dynamic and airmass thunderstorms, which gives to the forecasters a unified method to approach severe convection. The main ingredients of the check list are instability (CAPE, LI,T500-T850), moisture(Td, thetaE, Pw), Wind shear(0-6km, 0-3km) and also subjective ingredients depending on the synoptic situation. The checklist index is calculated using an excel table in which the forecasters enter for each parameter one of three classes. Since May 2016, NinJo's latest version allows to represent directly the severe thunderstorm index on the map.

*** Tim Hewson: 'Model formulation
and forecast products at ECMWF –
recent advances and future plans'**

Model resolution upgraded on Mar 8th this year to 9/18/36km, new cubic grid

Step in resolution was at day 10, now at day 15, so now only affects the monthly forecast. Some new physics introduced at same time, gives e.g. better temps near coasts. Scores continue to improve with each new cycle. ECMWF still in the lead!

Next upgrade planned for late Nov, sea ice model for first time + much higher ocean resolution.

Some nice new features added to ecCharts during year (e.g. simulated imagery, thickness, probabilistic products combining HRES and ENS, with user-define weights) – feedback welcome!

Forecast issues page / severe event catalogue continue to be updated, hopefully being used!

* **Paula Leitao: 'Weather Forecasting – how we do it in Portugal'**

The weather watch and forecasting area of Portugal includes mainland Portugal, the islands of the Azores and Madeira and the Atlantic as far as 40W. There are three forecasting teams (one for aviation, the others for general purposes and maritime forecasting) working in two IPMA centres, at Lisbon and at Ponta Delgada, Azores.

ECMWF model, ALADIN model and IPMA post-processing system are important forecasting tools.

The forecasts communication to the general public is based on the web page, the mobile phone App and the collaboration with national broadcasting system, television and newspapers.

The Meteorological Warning System (according to EMMA program) is based on fixed thresholds depending on local climatology for 18 regions in mainland, 4 regions in Madeira and Porto Santo islands and 3 groups of islands in Azores. Warnings are issued from 24 to 72 hours in advance at the web page and App and warning bulletins are sent for specific costumers. Dedicated channels with Civil Protection National Authority with a daily Weather Briefing allows a close and constant monitoring of the weather and the vulnerability of the territory and the prevention of risk situations.

The forecasters training programme is based on on-line and face-to-face courses, on face-to-face training in operational environment, on the preparation of case studies, and on the participation in studies in multidisciplinary teams.

* **Piotr Manczak: 'Weather Warning System in Poland'**

Meteorological warning system in Poland consists of forecasts of dangerous meteorological phenomena for the next 3 days, weather warnings and post-warning information. Additionally, 3-day impact based threat forecast is prepared daily for the Government Center for Security.

There are legal regulations of Ministry of Environment regarding thresholds for the first level of warnings. Criteria for the second and third warning level have been developed by the Institute of Meteorology and Water Management and modified with users (especially with the Crisis Management Center). Some of the warning criteria require changes. The works on changing heat wave warning criteria have begun. The new

criteria will take into account most recent climatological data and impact that heat has on human body. They will be based on maximum temperature differentiation, minimum temperature and duration of heat wave. Changes to other warnings criteria will be made in the future including impacts caused by dangerous phenomena and their spatial diversity.

* **Laura Paterson: '#nameourstorms – Improving the Communication of Severe Weather'**

In September 2015, the Met Office and Met Éireann began a 2 year pilot scheme to name wind storms that were forecast to impact the UK and the Republic of Ireland. The aims were to provide a single authoritative naming system for the storms that affect the UK and Ireland and to raise the awareness of severe weather before it hits. The naming scheme used was linked to Met Office and Met Éireann severe weather warnings, for large scale wind events that were expected to cause substantial impacts. The storms were named by operational meteorologists and the names were then communicated to the public through a wide variety of traditional and social media channels. Analysis shows that there was a huge amount of media and public engagement with the names, and that the 55% of people surveyed changed their behaviour in some way upon hearing about a named storm. There was both positive and negative feedback on the pilot and some changes are being introduced this year in order to improve the scheme. Overall the pilot so far has been deemed a success, in that it has achieved both of its aims. The scheme is however not without its challenges, and these will continue to be worked through during the 2016-2017 winter season.

* **Michael Skelbaek: Update on severe weather warnings in Denmark**

This presentation showed the general picture of how warning of severe weather in Denmark is performed. DMI is issuing warnings for a wide spectrum of weather phenomena and events where weather plays a role.

The warnings can be performed as a three-stage approach: warning outlook - risk forecasting - warning. The latest warning is a collaboration between the Emergency Management of Copenhagen, the supply- and utility company of Copenhagen and DMI, where a forecaster is dedicated to serve those community in case of severe rain in Copenhagen.

Session V 'WGCEF concept and request session'

Question en Concept

In this session, the group was divided into 6 subgroups. The aim of these subgroups was to get a quick and broad response about the functioning and role of WGCEF, ideas about the future role of the working group, how things could be improved. The rough outcome is stated in the bullets below. In course of 2016/2017, Cristian and Jos will work further on the suggestions and will try to incorporate the majority of the suggestions in the next meeting

Group 1: Christian

- 1. to be time efficient during meeting ☺ much faster putting round table into PPT.
- 2. Special topic for every meeting.
- 3. Active working group: initiate more task teams on interesting topics.

Group 2: Jos

- 1. Nice meeting. Active between, closed FB group
- 2. Website: Newsletter, vision
- 3. Fixed topic every year and miscellaneous topic half/half

Group 3: Evelyn

- 1. Longer meeting: propose to go on till Saturday morning
- 2. Practical forecasting help, tools
- 3. More communication between the year
- 4. Topic for meeting: Explanation about climate change

Group 4: Tim

- 1. Membership, Some countries are involved but dormant. Getting others more involved. Working with personal contact to involve the dormant countries.
- 2. getting more attention for other forecasters, critical mass for more public is needed
- 3. Starting maybe earlier Thursday morning
- 4. Schedule reorganised, cluster topics. (eg storm-naming)

Group 5: Laura

- 1. better collaborative working between the members. Every 6 months a video briefing
- 2. Working with social media
- 3. Promote this group more. With other people in the office
- 4. topic idea role of the forecaster in the future

Group 6: Karen-Helen

- 1. Two days meeting is very positive
- 2. Updates round table should be shorter
- 3. Increase exchange between forecasters, forum

Additional ideas:

- 1) Facebook group for communication between the WGCEF members
- 2) Overview of all activities in the field of forecasting (Eumetnet, Eumetcal, WMO, working groups, etc.) on our website

Eumetnet Task Team 'Naming storms in Europe':

We are looking for additional members working in this group (Natasa, Klaus and Christian have left this group). If you are interested to join this group, please contact the new chair Evelyn Cusack!

Closure and meeting location for next year

On behalf of Mr Przemysław Łagodzki, Director General of IMGW-PIB, and Mrs Teresa Zawiślak, Head of Weather Forecast Services, Piotr Manczak offers his Institute in Warsaw as a place of WGCEF meeting in 2017, the meeting will be held on the 12th and 13th of October 2017.

Christian closes the meeting and gave thanks to the hosts of ECMWF, Tim Hewson and Karen Clarke.