

News and updates from a selection of NMSs

In a normal edition of The European Forecaster, on these pages you would find a copy of the minutes from the annual meeting. However, these are not normal times and as we were unable to meet in Estonia in 2020, there are no minutes to reproduce. In their place we have here a selection of highlights from the past year that some of the representatives were kind enough to send in to give a flavour of what has been going on in our NMS community - Editor

CHMI (Marjan Sandev)

Warning system updates:

Held regular online meetings with the Fire Rescue Service (FRS).

Warning distribution on the FRS's side is still not technically prepared for selective distribution, however, CHMI have prepared questionnaires for users, SWOT analysis.

Collaboration with the Department of Biometeological Forecasts for a new frost warning to be developed, to mitigate against any hazardous conditions during the winter.

Development of a new application FireRisk, to warn of the dangers of natural fires using model index to determine occurrence and spread of fires over an area. Additional resources from EFFIS and all warnings issued in CAP formats.

New customers

Directorate of Roads and Motorways will receive regional road and motorway forecasts, a product tailored to the customer's requirements in a machine-processed xml format. This includes: Forecasts for maintenance (roads and motorways) for 13 regions, Forecasts for drivers. ALADIN model outputs and Meteograms and probabilistic outputs.

Railway Administration: production of regional forecasts for railway transport routes, again tailored to the customer's requirements, in a machine-processed xml format. These are specialist forecasts for the maintenance of railways in 13 regions and Medium-range specialist predictions of hazardous conditions to mitigate against transport disruption.

From the 1st of May 2020 CHMI is now cooperating with a new TV broadcast channel in the Czech

Republic CNN Prima News, providing meteorological data, forecasts and warnings. CHMI meteorologists prepare daily broadcasts and ad-hoc interventions in case of hazardous or noteworthy weather events.

International cooperation

Cross-border cooperation with Poland and Germany - international exchange of hourly data from automatic stations in BUFR format (according to the WMO standard and EUMETNET recommendations). This collaboration has already been implemented with Poland, and is due to be completed in November 2021 with Germany.

New building of Central forecasting office

Finally, after 8 years of planning a new building for the Central Forecasting Office, which includes facilities such as a conference room has been officially inaugurated by the Minister of the Environment and the State Secretary for the Environment on the 9th of June.



DHMZ (Lovro Kalin)

At the Croatian Meteorological and Hydrological Service (DHMZ), the past year has been very challenging due to the COVID-19 situation, but more so the Zagreb earthquakes. They struck Croatia's capital on March 20th and irreversibly

damaged the Headquarters of our Service, fortunately with no casualties. Remote work, luckily organized beforehand because of the COVID preparations, was immediately introduced and soon a provisional forecasting operations room was established. In summer 2020, DHMZ moved its offices into a building under lease while the computer and other infrastructure has been gradually relocated. Working conditions in the new premises are now better than in the original building but the project for a new building is unfortunately still on hold.

As for scientific topics; it is worth mentioning that a new supercomputer has been purchased and will be installed soon, so a further improvement in NWP is expected. In the Forecasting department preparations for a more comprehensive warning system – that will introduce local administrative counties – is underway. Difficulties regarding ‘brain drain’ are present more than ever, moreover there is a lack of new staff available and interest for meteorological study is decreasing.

DWD (Robert Hausen)

Mrs. Renate Hagedorn has been appointed as the new leader of the forecast department, following the retirement of Hans-Joachim Koppert.

There has been a successful meteorological advisory service of the year-long MOSAIC expedition in the Arctic.

Very challenging times during the pandemic - but also chances for digital progress and home office working with about 50% of the shifts done from home.

Restructuring with two new departments for: 1. Warning and advisory services including manual/human made forecast productions and 2. The development of products and services incl. customer services.

Enhanced focus on activities for recognizing and (event based) information of crisis managers about severe weather events in short and medium range.

IMGW-PIB (Piotr Manczak)

Due to the COVID-19 pandemic situation in March 2020, a home office working system was implemented for most of IMGW-PIB staff, including the

forecasters. In summer 2020 (the thunderstorm season), forecasters were allowed to work in offices, as they are now in the current season (2021).

Exam sessions for applicants and forecasters improving their qualifications have been held online since June 2020.

A new position was established: the media forecaster. This forecaster is responsible for contacts with the press, TV or radio stations, and for social media updates. They cooperate with forecasters on duty and the Press Office. The media forecaster chairs daily synoptic briefings for IMGW-PIB employees not working within the main weather offices.

Since 2020 IMGW-PIB has been a full member of ESSL.

The old web page, www.pogodynka.pl, was replaced by the new one, www.meteo.imgw.pl. The original web page was upgraded with new functionalities added, for example dynamic maps with NWP data calculated in IMGW-PIB. A new Hybrid 1.0 IMGW-PIB model was created for meteograms, which combines multiple different forecasting systems: nowcasting models SCENE and INCA-PL2, and two mesoscale models AROME and ALARO. Their consolidation enables a user to watch the nowcast refreshed every 10 minutes with 3-day forecast on one graph.

A new profile ‘Burza Alert IMGW’ (Thunderstorm Alert IMGW) was created on our Facebook page (<https://www.facebook.com/burzaalertimgw/>). This contains a detailed synoptic forecast of thunderstorms for the present and following day, alongside a general forecast for the third day. This space is also used for nowcasting and publishing interesting facts concerning thunderstorms.

Our early warning system was extended from three to four consecutive days and the present warning system has been upgraded. There is a possibility of issuing a nowcasting warning. This is referred to as an overlay warning, as it temporarily enhances the level of an already issued warning. For example, a yellow level warning could be covered by an orange one for some area and/or duration, if the intensity of some observed or predicted phenomenon is higher than in the original (yellow) warning. The original warning remains valid for the rest of the area and after the cessation of the overlay warning.

In 2019 we began publishing long-term forecasts (up to 3 months) on our web page. Such forecasts had previously been issued for internal use only.

IPMA (Paula Leitão)

The COVID pandemic ruled the changes during 2020 at IPMA. From March onwards all staff were working from home, except for the aviation forecasters and half of the general purposes weather forecasting team. Even so, there were no changes to the routine procedures.

There was a severe delay in the implementation of the new Weather Display System (SYNERGIE – MFI), which is not operational yet.

The Madeira and Azores radars started operation. The access to the imagery has allowed forecasters to develop expertise with new data.

Wildfire Weather forecasting is still an important topic and new updates were developed.

Meteo-France (Bruno Gillet-Chaulet)

COVID-19:

In France, the health crisis led to 2 periods of nationwide lockdowns (March 16th / May 10th and October 31st / December 15th) followed by a curfew (a 'stay-at-home' policy between 8 pm and 6 am).

A plan to protect the health of employees and the continuity of services was put in place. Remote working (from home) was imposed when possible. Only certain activities related to the protection of people and property (such as "vigilance" weather warnings, aeronautical and maritime safety), IT support functions, observations or management were maintained on sites (for practical or IT security reasons). Certificates were required to get to and from the offices with police undertaking checks. At the start of 2021, around 50% of Météo-France employees were working remotely. At the National Forecasting Center (the national operational room) measures were taken to space workstations, with systematic disinfection of desks and computers and mask wearing was compulsory.

Regarding observations, decrease in aircraft data (AMDAR) was partly offset by an increase in the number of radiosondes.

Weather events:

The hottest year since 1900 with many records during the winter. Two episodes of heat wave in the summer (one with a red "vigilance" level). Driest July on record. Exceptional heat wave in September. In October, catastrophic storm Alex in the South-East (with a significant Sting-Jet phenomenon over Brittany). Resulted in nine fatalities and several people reported missing, immeasurable damage and national impact with an intervention from the President of the Republic highlighting the good advice and lead-time regarding the red "vigilance" level which had been issued.

Changes:

Renewal of ISO 9001: 2015 certification for a period of 3 years from the start of 2021. Audits carried out mainly remotely.

New website for meteorological "vigilance" weather warnings. Integrated chart without pictograms, each parameter being the subject of a separate chart. New product with early warnings with up to seven days lead-time giving the probability of a severe event occurring.

New "General Public" website, made to be more user friendly. Mobile app awarded by WMO for the "citizen observations" section.

Climate projections at a regional scale on the national territory made available to the public by the "DRIAS" portal (<http://www.drias-climat.fr/>) for adaptation to climate change.

Installation of 2 new supercomputers (operational at the start of 2021): Belenos and Taranis resulting in a gain of 5.5 in computing power.

Reorganizations: ongoing projects in particular for mountain related support.

MeteoSwiss (André-Charles Letestu)

Automatic forecasts

Since 2010, the forecasters at MeteoSwiss were filling in a forecasting "matrix" which was used to feed into the website, app platform and various products such as the symbols for the TV charts. A first guess was provided by various models according to the forecast range; COSMO 1 for the Day 0 and 1, COSMO E for day 2 to day 5, finally IFS for days 6 and 7. The forecaster was able to

modify the parameters. In May 2021, the matrix no longer exists; the forecast is now fully automatic. This is also the end of the verification of the forecast issued by the weather forecasters. This big step corresponds also to a significant change of the role of the forecaster.

The heat wave warning

Previously, the criteria for a heat wave warning was calculated using the daily maximum temperature and the humidity. The result was an index not easy to interpret, moreover, the minimum temperature was not included; a high temperature at dawn can affect the recovery of fragile people after a very hot day. From summer 2021, the daily mean temperature will be used to set the threshold for heat waves. An extra yellow warning level has been added, previously only amber and red warning were available. The criteria for the warnings are:

Warning level 2 (yellow): 1 day with a mean temperature above or equal to 25°C.

Warning level 3 (amber): 2 days with a mean temperature above or equal to 25°C.

Warning level 4 (red): 2 days with a mean temperature above or equal to 27°C.

Weather 4 UN

Major humanitarian crises are often associated with hydro-meteorological hazards such as hurricanes or floods. Early warning systems enable authorities and humanitarian organisations to take targeted protection measures for the affected population. At all stages of a disaster (before, during and after), emergency forces and humanitarian organisations preparing and carrying out humanitarian operations in affected regions require access to information about the weather and hydrological situations. Although high quality information is usually available for many regions of the world, the UN and its specialized humanitarian agencies have difficulties, in some cases, to optimally access this information. In order to improve the flow of information to humanitarian organisations and, if necessary, to official bodies in developing and emerging countries, the WMO initiated a WMO Coordination Mechanism (WCM) during the 18th Congress. The new Standing Committee on Disaster Risk Reduction and Public Services (SC-DRR) within the Service Commission (SERCOM) has been tasked to develop a WCM implementation plan based on the initial concept and voluntary contributions of Members.

In April 2020, the Federal Council of Switzerland decided to contribute towards the establishment of the WCM through the "Weather4UN" pilot project.

Weather4UN is a limited-in-time (2020-2023) pilot project led by APW, which will be carried out in the context of the establishment of the WCM by the WMO and its members. More specifically, the project aims at (a) refining the definition of the requirements from various stakeholders (institutional level) and (b) assessing the feasibility of developing and exploiting facilities for supporting the exploitation of the WCM (technological level). The team will be mostly located in Geneva, as to ensure a close proximity with members of the WMO staff. The team will include at least two scientific collaborators and coordinate the work of additional persons who will belong to other teams or divisions within MeteoSwiss.

OMSZ (Zsolt Pátkai)

The Hungarian Meteorological Service was founded 150 years ago (in 1870) by Franz Joseph. On the occasion of such rare anniversary large outdoor event was planned, which was unfortunately cancelled due to COVID-19. A commemorative postal stamp and coin were issued also.

Fully automated radiosonde equipment was put into operation both in Szeged and Budapest.

Similar to other countries HMS took part in the EUROCONTROL Cross Border Weather Advisory project.

Our colleagues won the Media Forecast Award by the European Meteorological Society with the daily weather forecast video distributed via HMS's Youtube channel.

Just weeks before the COVID-19 crisis a new workflow management scheme was introduced which required a new position for a supervisor / chief forecaster to be created.

During the first period of COVID-19, 24 hour long shifts were temporarily enabled, each shift consisted of pre-designated people to reduce the risk of epidemic. Home office working was not allowed at all.

UKMO (Nicholas Roe)

Weather

2020 was been a year of extremes with the wettest February on record, the sunniest spring, a heatwave in the summer and a day in October breaking rainfall records.

Corporate developments

Our new CEO, Prof Penny Endersby announced our new purpose: "Helping you make better decisions to stay safe and thrive". The Met Office will play an integral part in the UK's hosting of the COP 26 climate change conference, delayed from November 2020.

Covid

In the spring Coronavirus arrived with a decrease in aircraft observations noticeably affecting NWP however the biggest operational impact was on staff as HQ was closed to all but a handful of essential personnel. All staff had to learn to work from home, with trainee meteorologists also distance learning. Some silver linings included a Citizen Scientist Observation Data Rescue project where volunteers in lockdown were asked to help enter data from historic paper observation books from 1914-1957. The College's Met Office for Schools project intensified to help with home schooling. By the summer, working from home shifts had been streamlined in Defence with great success however some locations reopened in COVID safe way and 60-80 people were allowed back into the HQ. Weather data for public health services helped to ease the load on the National Health Service as they continued to fight the pandemic. By the winter an office-wide mental health awareness campaign was started as the season increased the stress on home working Meteorologists. By the end of the year there were operational staff who were hired, then trained, and are now working, having never left their home.

Future of Operational Meteorology

The FoOM project has started to deliver: New Hi Res NWP data has been made available to all Meteorologist in the IBL Visual Weather platform, and we also had some production moving away from MS Office on to the platform. Operational efficiencies have been delivered on the civil forecasting side e.g. AIRMETs have been replaced by GAMETs with areas and issue times aligned with other aviation products. Defence Meteorologists saw improvements too e.g. the delivery of a

new intuitive web-based station warnings system. Other projects in the pipeline include convective nowcasting capabilities to improve accuracy of 0-2 hr thunderstorm forecasting using cell tracking 3D radar and high resolution modelling. IT infrastructure changed as servers were replaced by Amazon web hosting. All files were moved to the cloud accessed by SharePoint and communication platforms were streamlined onto MS Teams by the end of the year.

Technology developments

Government announced an investment of £1.2 billion for a new supercomputer, provided by Microsoft Azure. It will be 6 times more powerful than the present one and is planned to be powered by 100% renewable energy. The first phase will complete in autumn 2022 with a new hi-res model for boundary layer humidity already confirmed which will assimilate data from sensors on commercial aircraft, GNSS receivers monitoring signal delay and radar reflectivity assimilation. A new operational Lightning Detection Network (to be known as LEELA) began with trial monitoring stations installed in Estonia, Ireland and France. The project will complete in 2023.