

Commission for Aeronautical Meteorology Management Group 2016 (CAeM-MG-2016)

8 - 10 November 2016, Hall (Innsbruck), Austria

Report of the President of CAeM,
Mr Chi-Ming Shun



WMO OMM

World Meteorological Organization
Organisation météorologique mondiale

Recalls MG-2015...



Progress since MG-2015

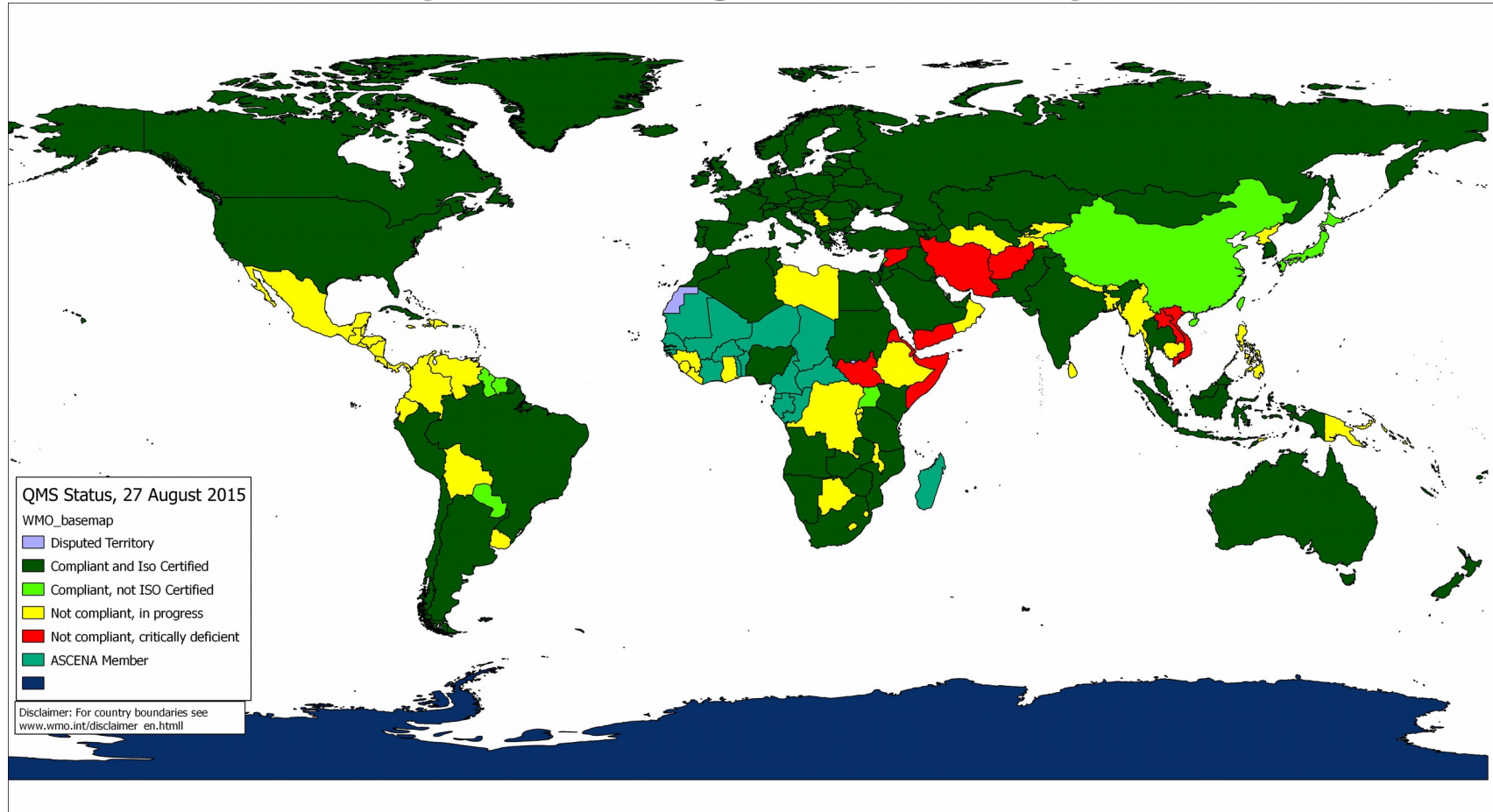
- **Cg-17 reconfirmed aeronautical MET as one of the WMO strategic priorities**
- **CAeM Action plan agreed by Cg-2015 (*INF. 2*)**
 - Quality Management System
 - Competency & Qualification
 - Raising awareness and impact assessment
 - Improve guidance material
 - Develop regulatory provisions together with ICAO
 - Long-term planning (*DOC 6.1*)
 - Update of the Working Arrangements between WMO and ICAO (*WMO Secretariat*)



ET Meetings

- **Conjoint ET-ETC + ET-GOV:** joint activities with ICAO METP/MCRGG, Wellington (Dec 2015)
 - Draft skeleton for new WMO-732
 - Global survey on governance and business model
- **ET-CCP:** St Petersburg (May 2016)
 - Focal points for distribution of Global Survey
 - First CAeM Newsletter published

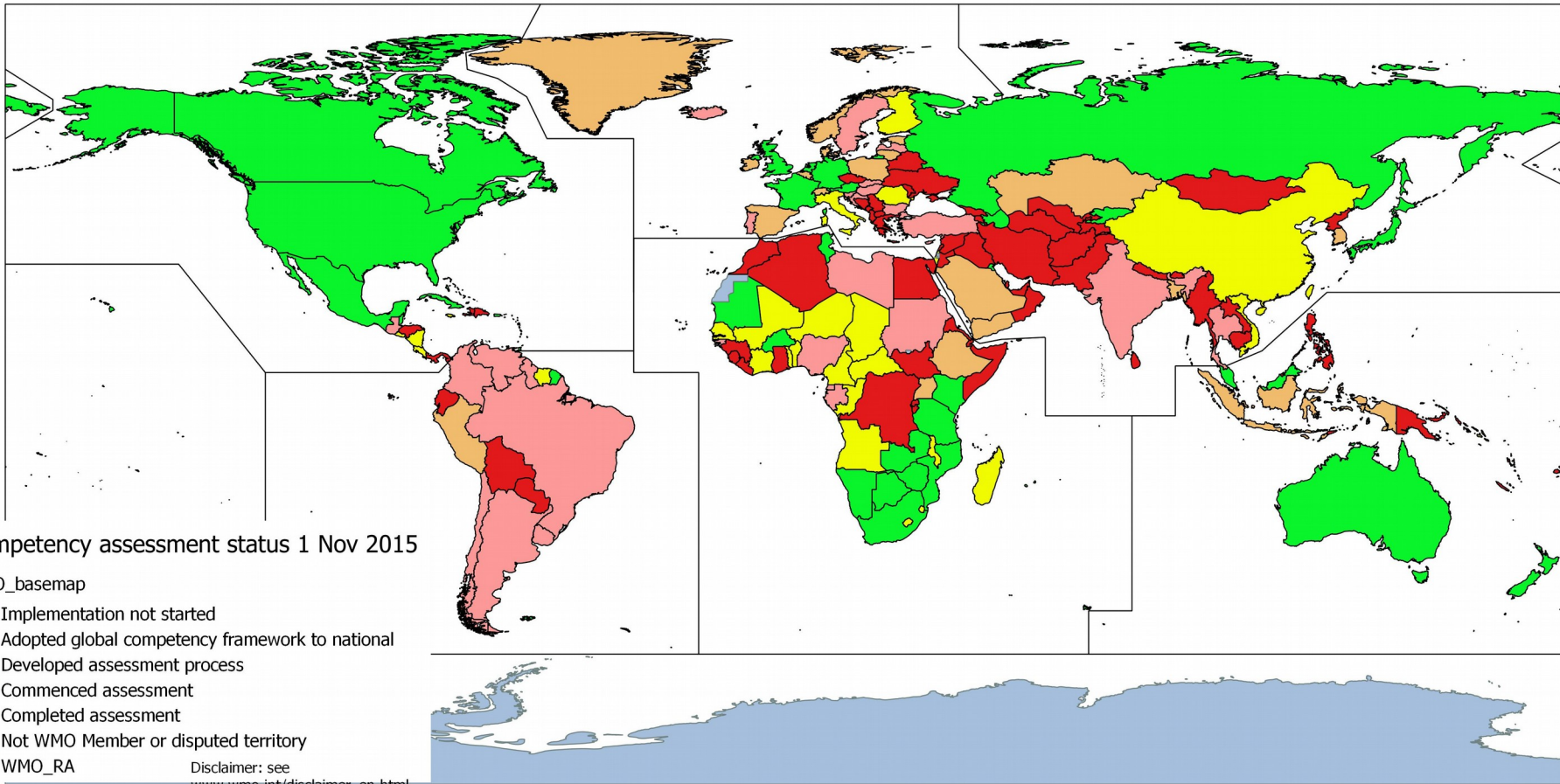
Quality Management System



- Level of conformity at April 2016 is 115 Members; the level of critical non-conformity is about 10 Members
- WMO QMS Guide to reflect ISO 9001:2015 standard (Target: Q1 2017)

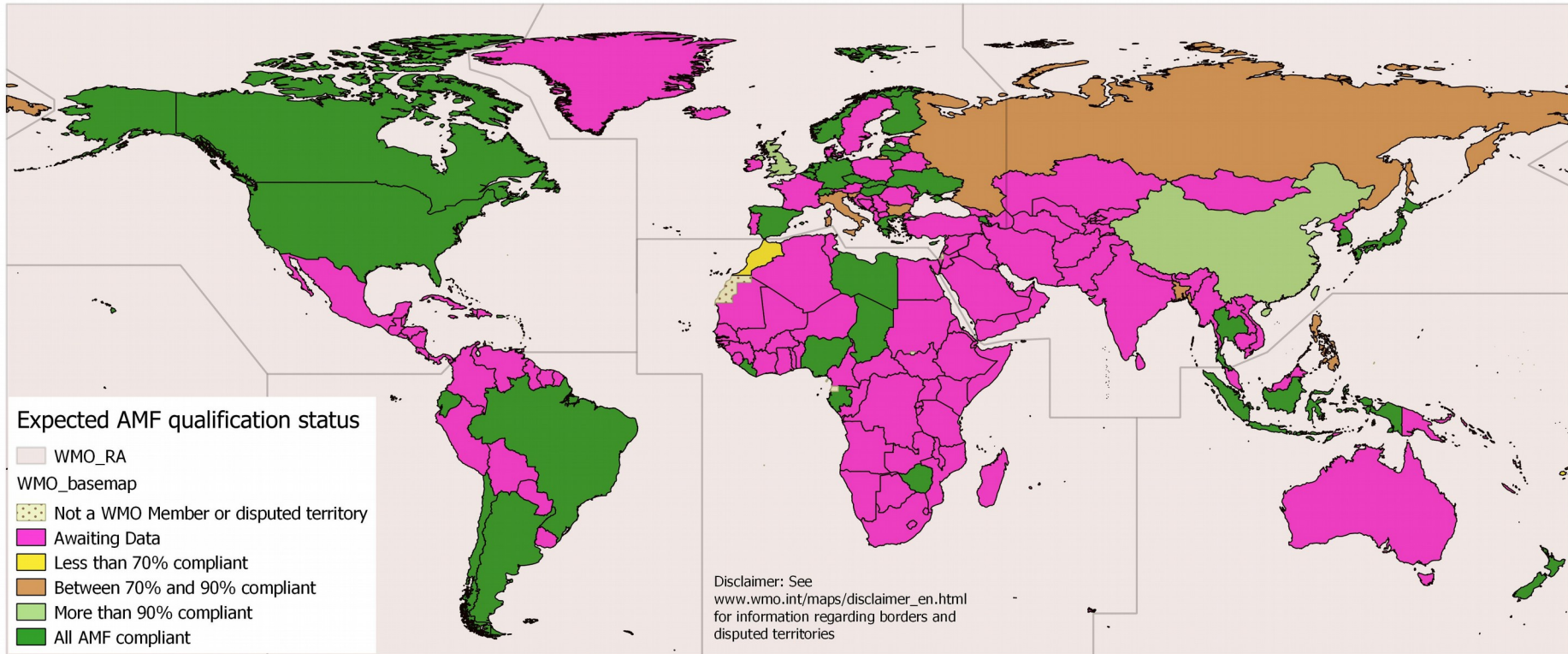


Competency of AMP



Qualification of AMF

(Deadline: 1 December 2016)



Qualification of AMF

(Deadline: 1 December 2016)

Our ref.: WDS/AN/AMF-Qualification

GENEVA, 28 January 2016

Annexes: 3 (Annexes II and III available in English only)

Subject: Aeronautical Meteorological Forecaster qualification compliance information

Dear Sir/Madam,

I wish to refer to several aeronautical meteorological matters as indicated below. In some of the WMO Members, the National Meteorological Services are not the primary Aviation Meteorological Service Provider (AMSP) for international civil aviation. If this is the case in your country, I would very much appreciate it if you, in your role as Permanent Representative of your country with WMO, could forward a copy of this letter to the head of the Aeronautical Meteorological Service Provider for their information and response.

This letter deals with the following matters:

- The entry into force of the WMO standard on required qualifications for Aeronautical Meteorological Forecasters on 1 December 2016 (see Section 5.1 of Volume I of WMO-No. 49);
- Request for updated information regarding the anticipated status of compliance with the Aeronautical Meteorological Forecasters qualification standard in your country by 1 December 2016.

Qualification of AMF

Our ref.: ETR/RTC-G

GENEVA, 30 May 2016

Subject: Education and training opportunities for aeronautical meteorological personnel

Dear Sir/Madam,

On behalf of Dr David Grimes, President of WMO and Chairperson of the EC Panel of Experts on Education and Training, and Mr C.M. Shun, president of CAeM, I wish to remind you of the approaching implementation date of the WMO qualification requirement for Aeronautical Meteorological Forecaster (AMF), which becomes a standard practice as of 1 December 2016.

To facilitate Members' compliance with this provision, the WMO Regional Training Centre(s) in your Region are in a position to assist you with education and training options for those staff who do not fully meet the AMF qualification requirements, as well as with the continuous professional development activities to support the ongoing competency assessment requirements that came into effect on 1 December 2013.

During the last session of the EC Panel of Experts on Education and Training, the Panel discussed the wide range of training opportunities that are available for Aeronautical Meteorological Personnel from the WMO Regional Training Centres (RTCs) and Members generally. Noting the range of courses and the comments from the RTC Directors present at the Panel session it seems that some Members may not be fully aware of the capacity of the RTCs and other training institutions to provide information and assistance in addressing any education and training gaps in your service. Some issues identified include:

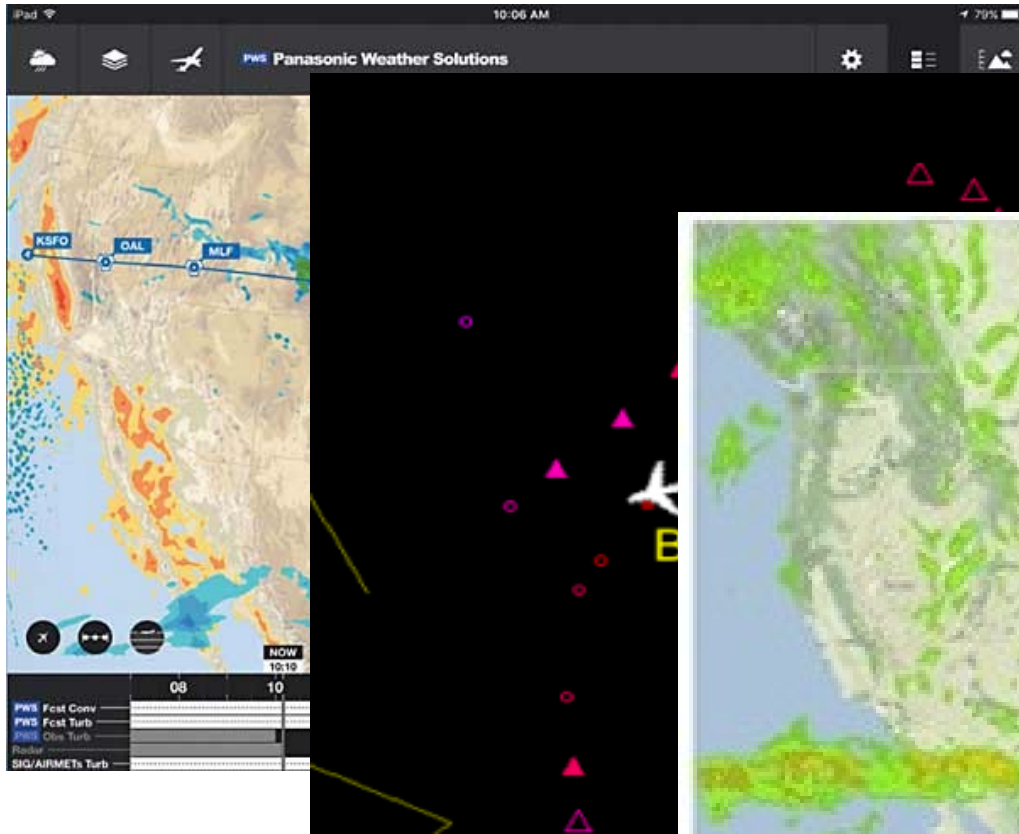


Raising Awareness and Impact Assessment

- WMO RA VI European Conference on MET for Aviation (ECMA, Oct 2015) – key messages
- Special session on aviation MET issues in RA V Regional Forum for Directors of NMHSs (Oct 2015)
- EC-68 aviation side-event (Jun 2016)
- WWRP WSN-16 (Aug 2016)
- China-ASEAN MET Forum (Sep 2016)
- ACMA-2017 being planned (alternative host)
- RA II/RECO-7 (10-11 Feb 2017) (TBD)



Competition from Private Sector



TAMDAR ol

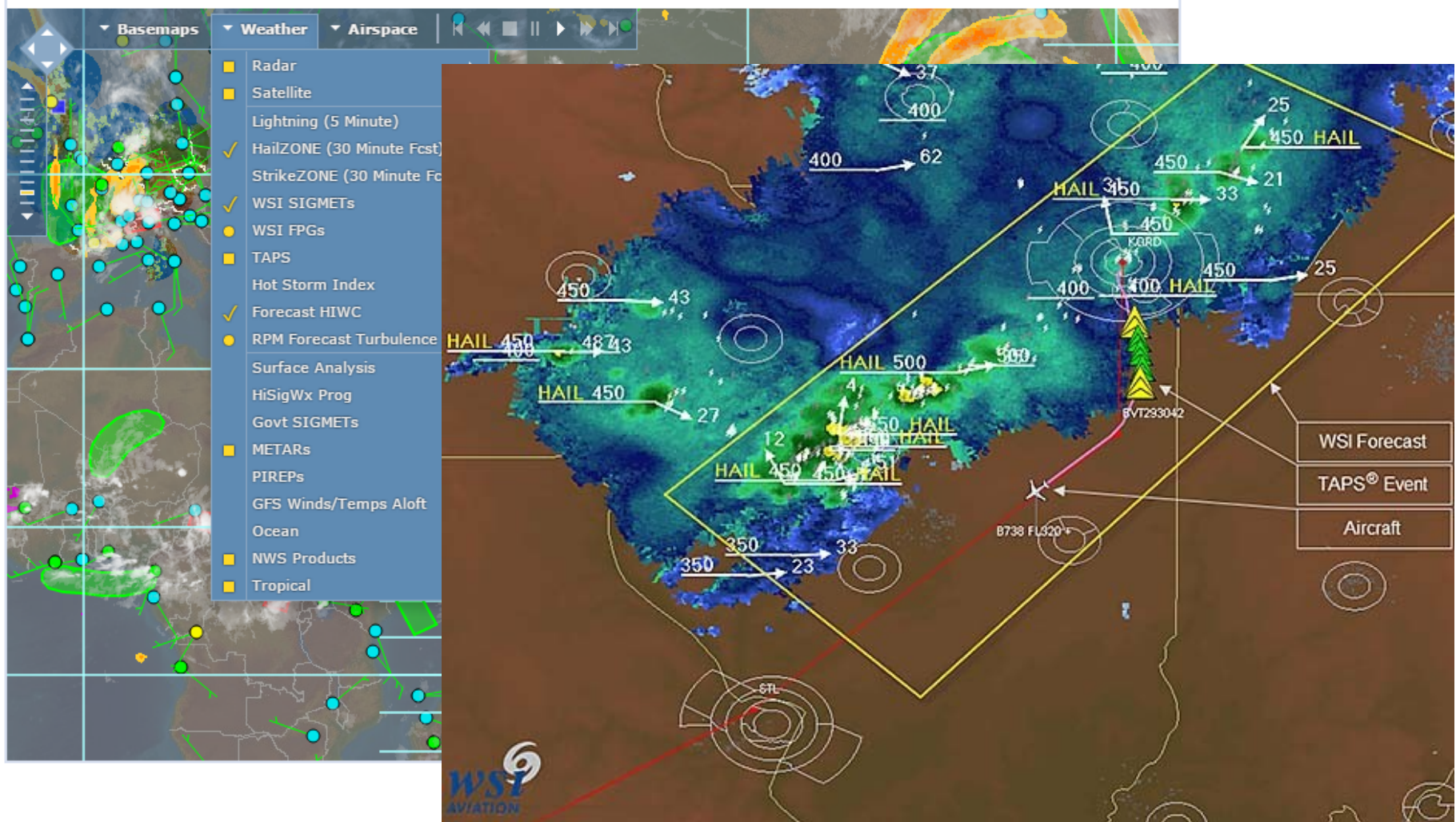


EDR-based turbulence forecast
(Schneider Electric)

- Trajectory based
- High-impact weather
- Obs + NWP (value add on top of global models)









Competition from Private Sector



TAPS turbulence observation (WSI)

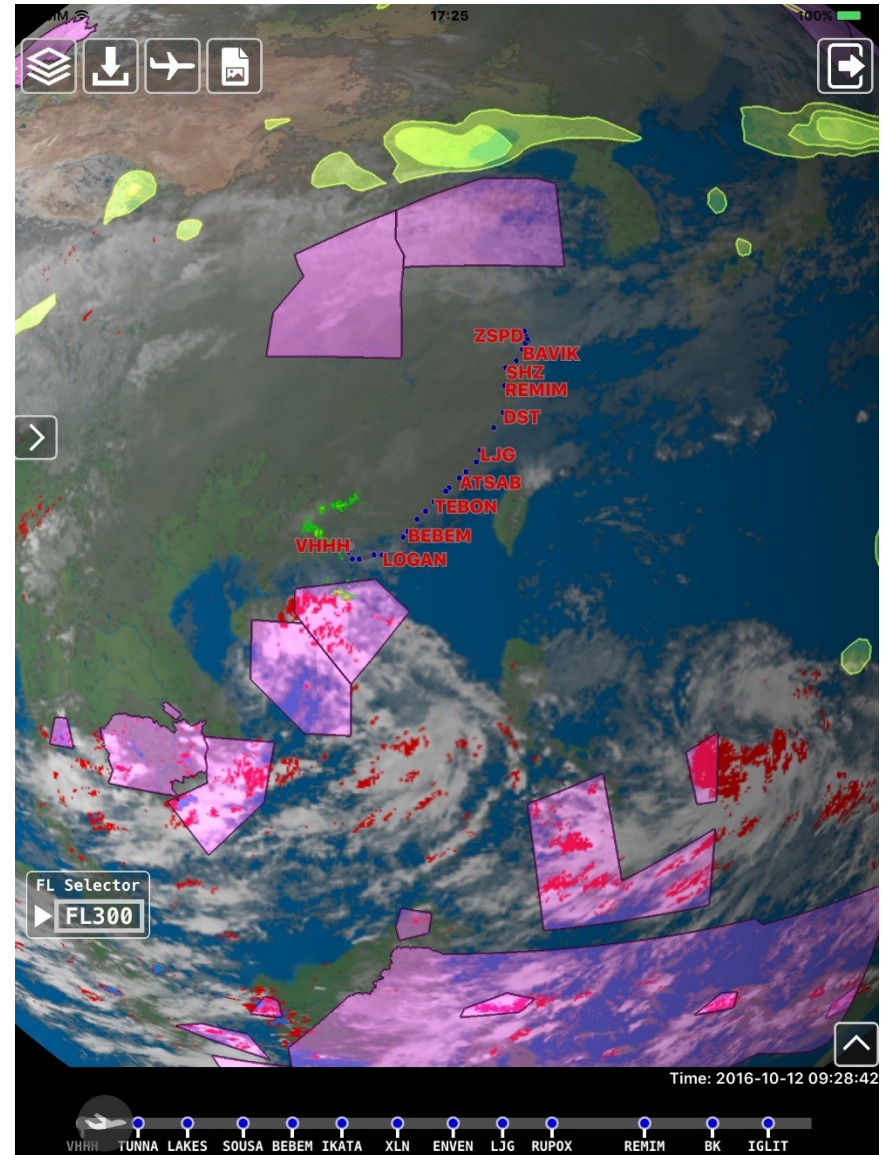
AvRDP

AvRDP Airport		Climatological regime	Weather elements to be studied in AvRDP
Charles de Gaulle Airport (CDG)		Mid-latitude in Northern Hemisphere Location: Inland	Winter weather - snowfall, icing, low temperature Fog
Hong Kong International Airport (HKG)		Subtropical in Northern Hemisphere Location: Surrounded by water Next to high mountain	Convection and Thunderstorm Low visibility and ceiling
O.R. Tambo International Airport (Johannesburg Airport) (JNB)		Subtropical in Southern Hemisphere Location: Inland	Convection Fog
Shanghai Hongqiao Airport (SHA)		Subtropical/mid-latitude in Northern Hemisphere Location: Inland not far away from River Estuary and East China Sea	Convective weather
Toronto Pearson International Airport (YYZ) and Iqaluit Airport (YFB)	 	Mid-latitude in Northern Hemisphere Location: Inland but not far away from Lake High-latitude in Northern Hemisphere Location: On Frobisher Bay	Winter weather – snowfall, icing, precipitation type and amount, visibility, wind speed, direction shear, and gust, turbulence, and low ceilings Convective Weather Arctic weather – Winds, blowing snow, fog, visibility, ceiling

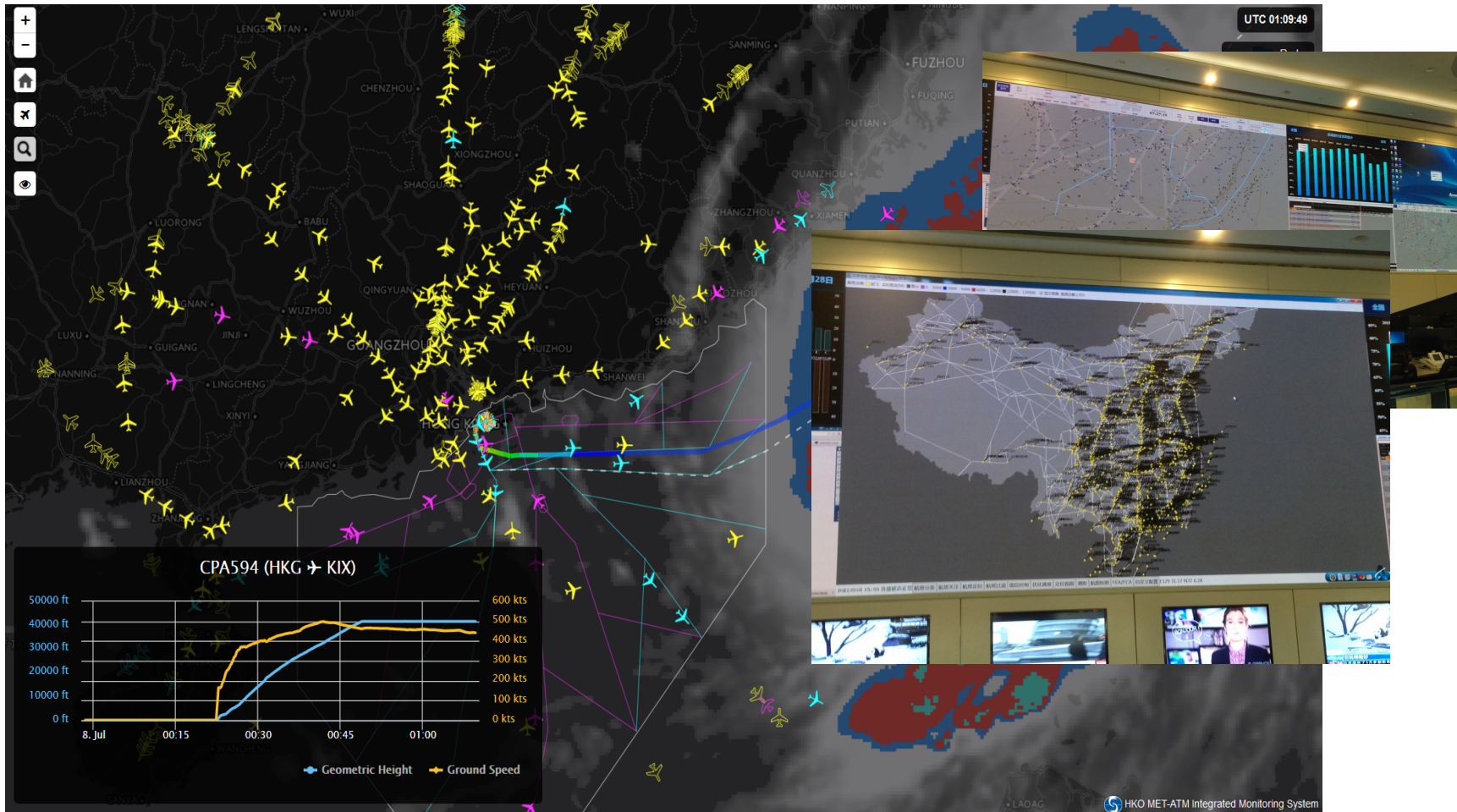


EFB App Development

- **GANP 2016 IM Roadmap** - *“Aircraft operators with flight/airline operational control centre facilities will share information while the individual user will be able to do the same via applications running*



ATM/MET Integration Trial



IM Roadmap: Flight Objects to be shared under SWIM

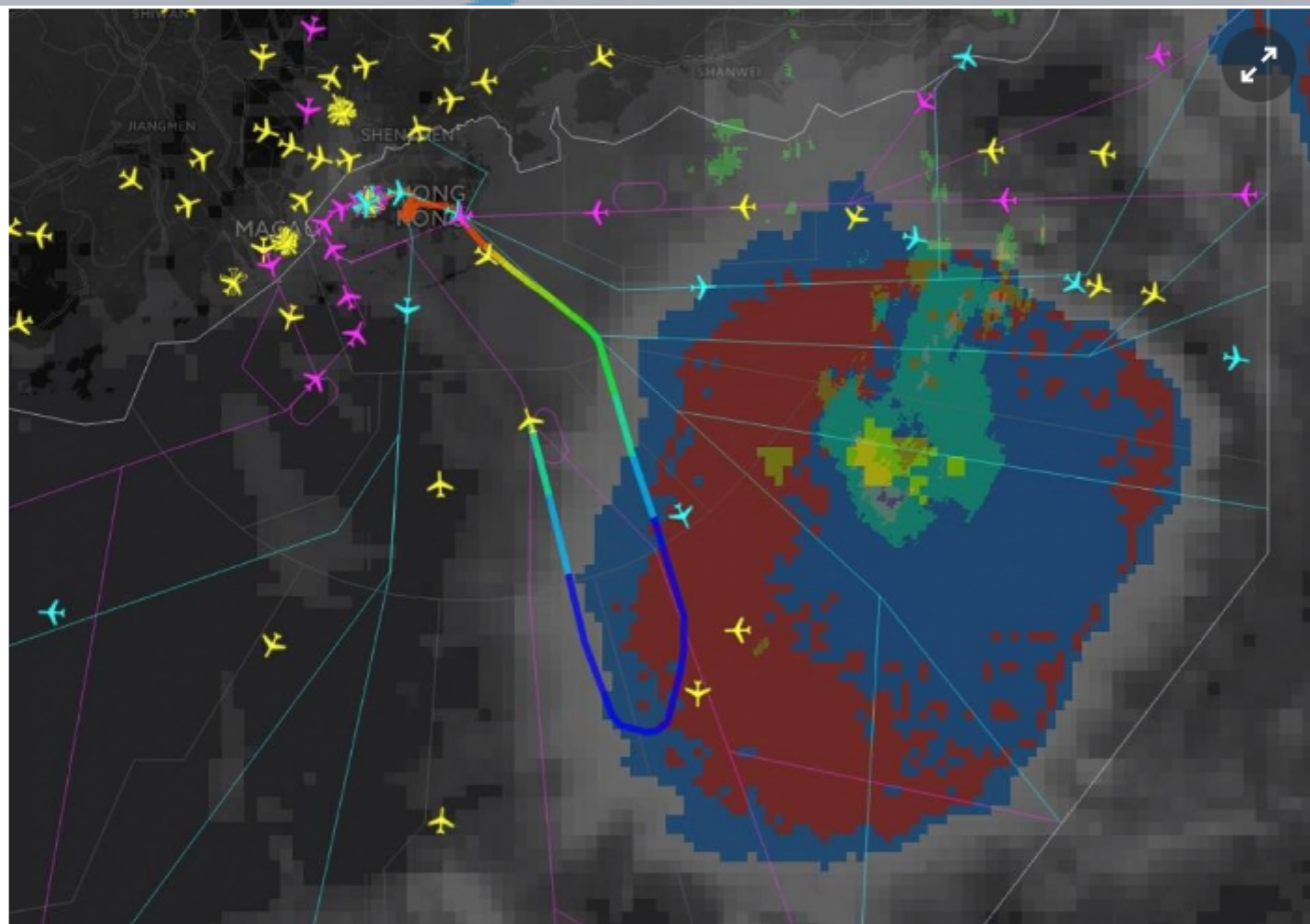
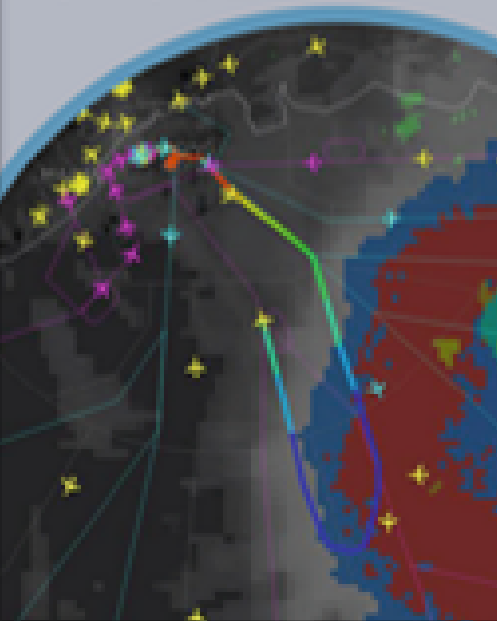


空中女王747飛越艾利

告別一個時代



Last flight of B747 of CPA



「空中女王」最
下觀賞【有片】



WMO OMM

天文台台長岑智明上載「空中女王」的航線，原來飛到熱帶氣旋艾利的外圍。(岑智明fb圖片)

Climate Change Impact

- ET-ASC (Herbert) provided useful inputs to ICAO-CAEP & recently published WMO Bulletin article



Climate change impacts on aviation: An interview with Herbert Puempel

Climate change, Aviation

Bulletin n° Vol 65 (2) - 2016

Efforts to reduce fuel burn and thus carbon dioxide (CO₂) emissions in aviation over the past four decades have been impressive. Operational measures in line with new air traffic management systems, as well as new technological concepts, all have the potential to continue reducing these CO₂ emissions. The Commission for Aeronautical Meteorology (CAeM) supports aviation stakeholders in their efforts to operate under changing climate conditions.

WMO Stakeholder Survey (May 2016)

- Identified **Threats** related to AeMP
 - There is a proliferation of **private sector** weather providers, some with low quality products, threatening the authority and visibility of NMHSs.
 - Competition from other **global or regional** organizations with overlapping mandates could pose a possible threat.
 - **Pressure on NMHSs role in aviation** could arise because of external developments.

Priorities of Regional Associations for 2016-2019

- Aviation mentioned in 5 Regions (except RA III)
 - **RA I: Aeronautical Meteorological Services for the Aviation Industry**
 - **RA II:** Enhancement of hydrological, **aviation** and public weather services
 - **RA IV: Aviation** and marine meteorology: continuous and sustained attention will be required to **meet the needs of these important sectors**, particularly in terms of ongoing implementation and maintenance of **quality management systems** and **human resource competencies** and in light of the trend towards



Priorities of Regional Associations for 2016-2019 (Cont'd)

- Aviation mentioned in 5 Regions (except RA III)
 - **RA V:** Achievement by all Members of the standards required for **quality management and staff competencies**, with a focus on **aviation** and marine meteorology.
 - **RA VI:** Enhancement of services: PWS, DRR/EWS, **aviation** and related services

Global Landscape

- "Global landscape" from ET/GOV **Global Survey** results expected to be available in early 2017, providing better baseline supporting strategic planning and guidance
- ET/GOV report on **regional service provision models** expected in Dec 2016
- ET/GOV IP on **global cost recovery models** for aeronautical meteorological service provision expected in early 2017



Improve Guidance Material

- Revised skeleton for WMO-No. 732 to replace WMO-No. 731 & 732 developed by ET-GOV (Target: EC-69)
- Guidance for IWXXM
 - V.2.0 “pre-operational” status (TT-AvXML)
 - <https://wiswiki.wmo.int/tiki-index.php?page=IWXXM-2>
 - Two SWIM/IWXXM workshops for APAC & EUR (May-Jun 2016)
 - APAC training workshop being planned by HK, China under WMO VCP (2017)
- Updates of WMO-No. 904 in slow progress but first set of cost recovery issues identified in Wellington meeting (Target: Nov 2017)



Develop Regulatory Provisions with ICAO

- **P/CAeM, VP/CAeM, C/AeM & ET members actively participated in METP and its WGs:**
 - WG-MOG/1 (WAFS/SADIS) (Sep 2015)
 - WG-MRI/1, WG-MISD/1, WG-MIE/1 (Nov 2015)
 - MCRGG/1 (Dec 2015) back-to-back with ET/GOV
 - WG-MOG/2 (VA) (Apr 2016)
 - WG-MIE/2 (May 2016)
 - WG-MOG/3 (WAFS/SADIS) (Jun 2016)
 - WG-MRI/2, WG-MISD/2 (Jul 2016)
 - MCRGG/2 (Jul 2016)
 - METP/2 (Oct 2016)

CAeM Contributions to METP

- ET-ISA supported publication of ICAO **MET Information Integration for TBO Concept**, now renamed as **Concept for the integration of Meteorological information for ATM**
- IUGG/WMO **VASAG** & WMO **VAAC BP** support ICAO METP MISD-VA & MOG-VA
- CBS/CAeM **ICTSW** supports METP MISD-SW (**IPT-SWISS** to be established at CBS-16 with **co-chairs from CBS and CAeM**)
- CBS **AvXML** → IWXXM (ICAO) / METCE (WMO)
- Further work on ConOps-es needed



Issues

- Heavy workload and limited resources (for both WMO & ICAO)
- METP only comprises experts, not representing Members' nor regional interests (how to ensure “**no country left behind**”?)
- **Moving goalposts** (METP recommendations deviate from Conjoint Meeting):
 - METP/2 recommendation for



Issues

- **Moving goalposts (cont'd):**
 - **METP/2** revises job card for **RHWAC Workstream** to “development of provisions for a phenomena-based, **globally**-consistent, en-route weather information system(s)”, with the provision of new hazardous weather services (**replacing SIGMET by MWOs**) to be considered for Amendment 79 to Annex 3 (**2020**), **without mentioning establishment of regional centres**, while the **Conjoint** called for **establishment of RHWACs in 2017**, **centralization of SIGMET provision in 2019** and the **feasibility of consolidating the regional centres into global centres to be studied in 2020-2024**

[Additional task for AeMP: regional SIGMET coordination efforts]

Issues

- **Reality:**

- Aviation users demand MET service enhancements with global support while private providers are speedy in offering
- Aviation users “free” to choose AMSPs (private providers and/or NMHSs) for added-value services

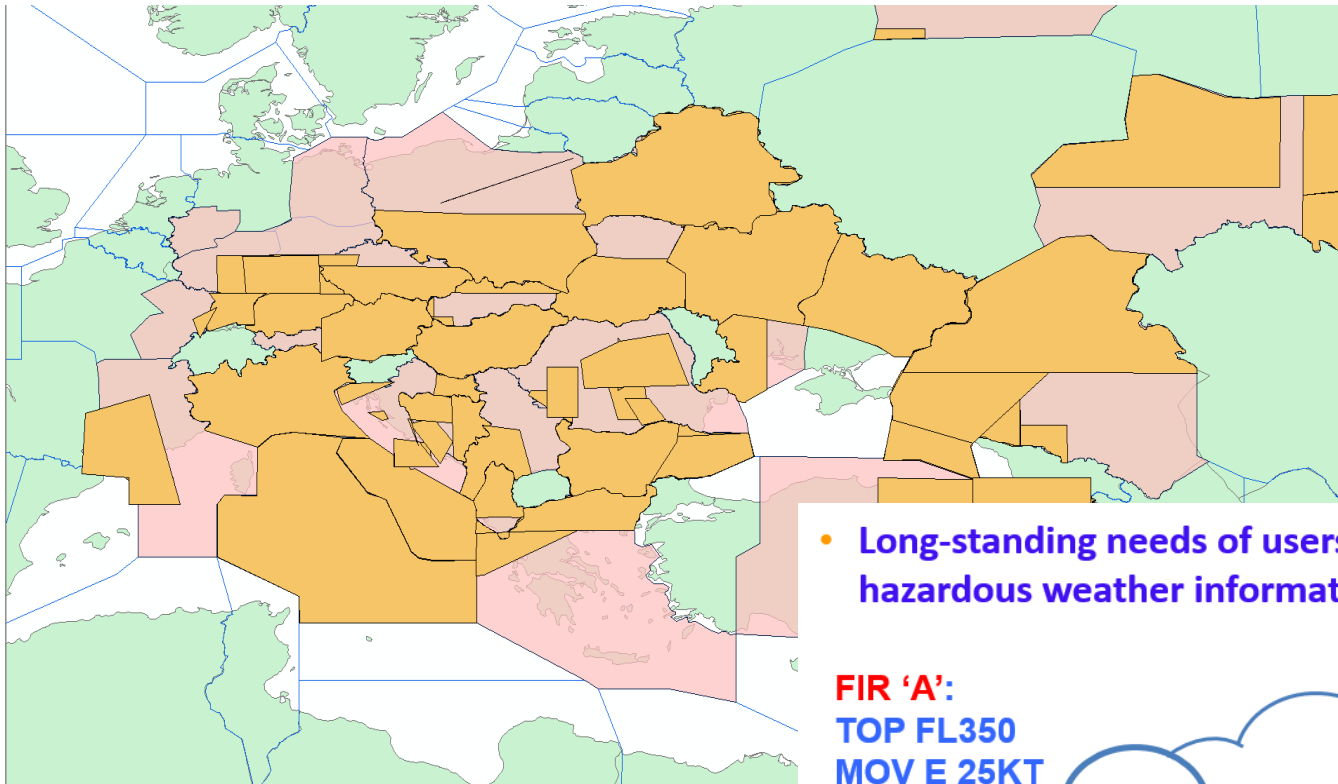
- **Future role of WMO/CAeM?**

- WMO serves Member Countries
- WMO to provide MET standards+guidance and expertise (MET, or beyond?), in cooperation with ICAO
- CD for NMHSs to remain as AMSPs (regional & local)



- How about those NHMSs not remaining as AMSPs

SIGMET Issues



- Long-standing needs of users for harmonized en-route hazardous weather information

FIR 'A':
TOP FL350
MOV E 25KT

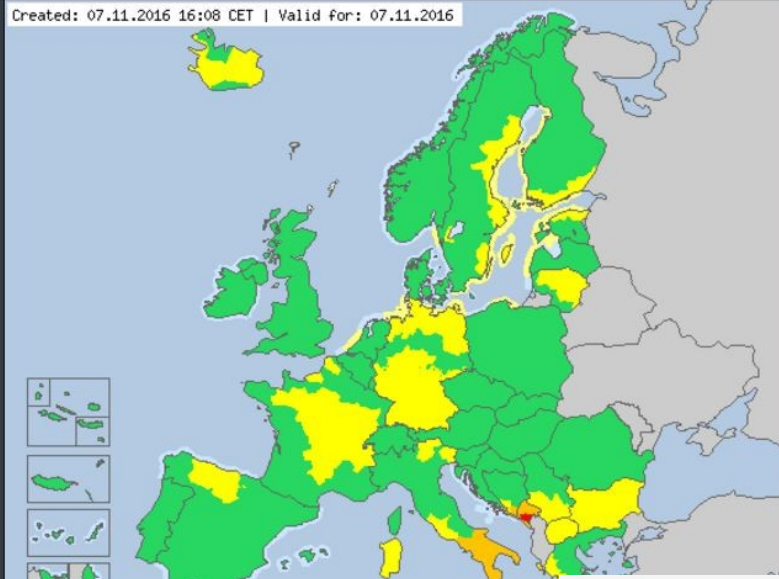
FIR 'B': TOP
FL450 STNR



??

Meteoalarm / SWIC 2.0

Created: 07.11.2016 16:08 CET | Valid for: 07.11.2016



Wetter-Warnungen: Europa

Gefahrenstufenberichte - Sie finden detaillierte Informationen über Warnungen in den Berichten der Länder. Wählen Sie das gewünschte Land aus.

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Map

Map Satellite Hybrid

Green Tropical Cyclone Alert f...

Zoom Out Events Reports Where am I?

Events Map Send Report MyReports About

Disaster Alert

Search Location

Flood - Western Indonesia/ FLOOD WARNING

Reported: 3 Days 13 Hours Ago

Updated: 10 Hours 38 Mins Ago

Google

Advanced search

Public Alerts

Show: all alerts, in any language, in all locations, sorted by relevance

- Blizzard Warning in Southeastern Wyoming**
Ground blizzard conditions due to strong winds and blowing snow will continue for...
Active for next 8 hours
National Weather Service
- Winter Storm Warning in Idaho**
Snow with pockets of freezing rain into Friday. A strong storm system will spread...
Active for next 14 hours
National Weather Service
- Winter Storm Warning for Northeast Mountains, Washington**
Snow with pockets of freezing rain into Friday. A strong storm system will spread...
Active for next 14 hours
National Weather Service
- Winter Storm Warning in Northeast Oregon**
A vigorous winter storm will continue to impact the area with accumulating snow...
Active for next 1 hour, 56 minutes
National Weather Service

Map Satellite

Winter Storm Warning in Northwest Washington

Active for next 4 hours, 55 minutes

Issued 3:51 PM PST (10 hours ago)

How likely:

How soon:

How severe:

Winter Storm Warning remains in effect until 7 AM PST Friday. - Timing, expect...
National Weather Service

Severe Weather Information Centre

Official Observations. Official Warnings.

WWIS 3.0



WMO Programmes
World Weather Information Service
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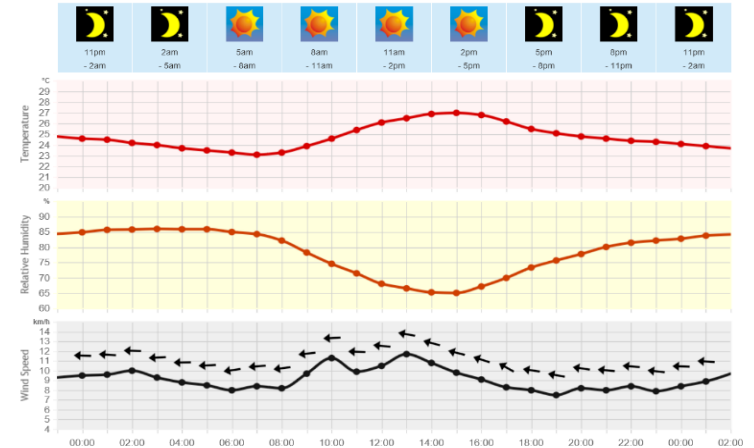
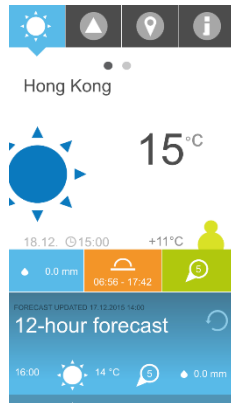
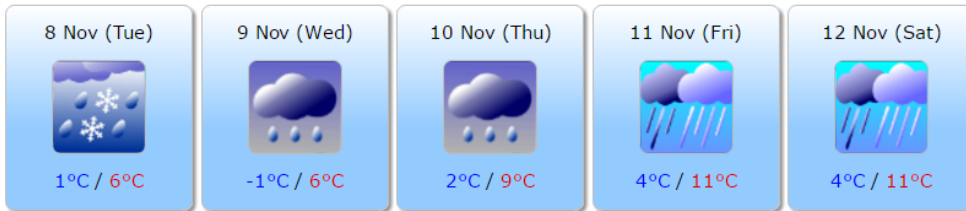
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Switzerland

Current Local Time: Mon, 7 Nov 2016 4:43 PM

WEATHER FORECAST

CLIMATOLOGICAL INFORMATION



Forward Looking

- Report back to PTC-2017 (*DOC 7.1*) and EC-69
- Long-term Plan for AeMP (*DOC 6.1*)
- CAeM Operating Plan 2016-2019 (*Agenda 6.2*)
- WMO comments on METP MCRGG White Paper on Future Aeronautical Meteorology Information Delivery (Greg's email dd 5.11.2016)
- Planning for Scientific Event 2017 (*DOC 7.3*)

Forward Looking

- Working Arrangement with ICAO – work in progress (Question: are we going to continue maintaining both ICAO Annex 3 and WMO Tech Reg Vol II?)
- Future WMO structure (PTC video conferences leading up to PTC-2017 & ECSG-SPB) & input for WMO Strategic Plan 2020-2023. CAeM position?
- PPP and Big Data hot topics at PTC-2016 & EC-68 – P/CAeM provided inputs. CAeM expected to contribute further. Ideas?
- CAeM-16 (2018) (*DOC 6.3*) – a milestone event



Thank you Merci



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