



EASA Workshop on Weather Information to Pilots

EUMETNET – Potential Challenges

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Overview of SESAR WP11.2

High Level Objectives of WP11.2

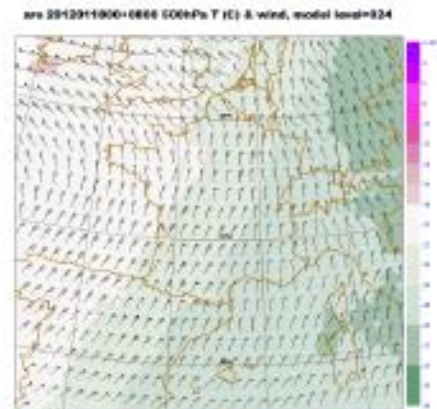
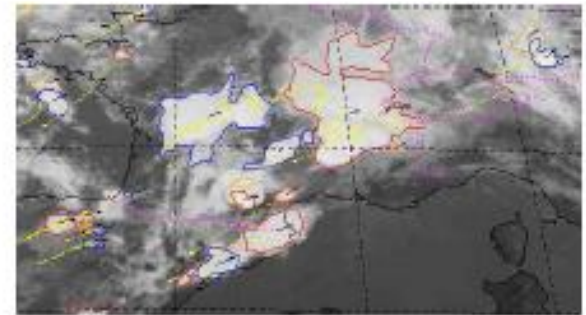
- 1) Consolidate and ensure consistency of the operational and system requirements for MET (across all the SESAR WP's), whilst engaging with them to raise awareness of current and future MET capabilities relevant to their planned activities.
- 2) Develop MET prototypes which provide the required MET information Services to ATM stakeholders
- 3) Integrate MET into the SWIM ATM Network via a virtual 4DWxCube and MET-GATE
- 4) Contribute to the validation of MET infrastructure and MET Information services which is undertaken within the corresponding WP environment.

SESAR Process Challenges

- χ 11.02 developments have to originate and link to specified operational requirements. Airline, in flight or pilot briefing requirements have to be described in the appropriate operational WP i.e. F/WOC (11.01) and these could be improved.
- χ To demonstrate and/or validate, a cooperation between MET, system, airline and ATM is required. MET is treated as an enabler.
- χ Visualisation or integration of MET is the responsibility of the operational/system project. 11.02 scope is limited to providing MET information to meet requirements, in a digital format usable by any stakeholder

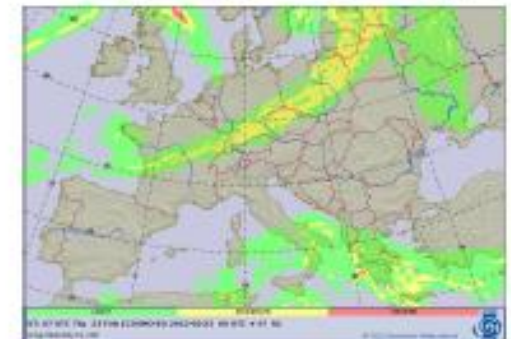
New MET products:

- Convection, thunderstorms (MF)
 - 3D convection over Europe
 - 2D + echotop over Atlantic / Africa
 - 15 mn update
- HR gridded MET data (UK, MF)
 - Wind, Temperature forecast
 - 30 km grid Worldwide (current: 140 km)
 - 2,5 km grid over South Western Europe
- Icing (DWD)
 - Diagnosis & forecast (12h) of in-flight icing
 - Europe + part of Atlantic



Planned trials (from Oct 2013):

- Domestic commercial EU flights
 - Improved ATC flow management in convective situations
 - Improved RTA ,...
- Long-haul commercial EU-Africa (or BRU-JFK) flights
 - Flexible routes optimization
 - Hazards avoidance over Intertropical Convergence Zone



Consider MET Information of the Future

MET information in Europe will be

- ✓ SWIM compliant
- ✓ Consistent and harmonised between NMS providers
- ✓ One point of easy access – MET-GATE performing relevant data management actions such as the retrieval from multiple distributed MET information sources, sub-setting, sub-gridding, thresholding, reformatting and aggregating of MET information, necessary to fulfil the needs of all ATM stakeholders.
- ✓ Accuracy improved by integration of aircraft observations

Challenges to Consider

- Defining requirements is not easy!
 - Different AU may have different needs ...
 - Who defines requirements?
- Pilot considerations
 - Role of ground personnel in cockpit briefing decisions
 - Balancing cockpit priorities i.e. volume of briefing material or alerting
 - Pilot knowledge of MET and interpretation of info
- System Limitations
 - Tech and cost limits of uplinking data, mainly images
 - How to display, alert, or integrate live info updates
- Source of MET Info
 - Consistent info between stakeholders ensures network predictability and maintains safety
 - Provenance of info must be maintained for safety and integrity
 - Consistent format, SWIM compliant

Contact Details

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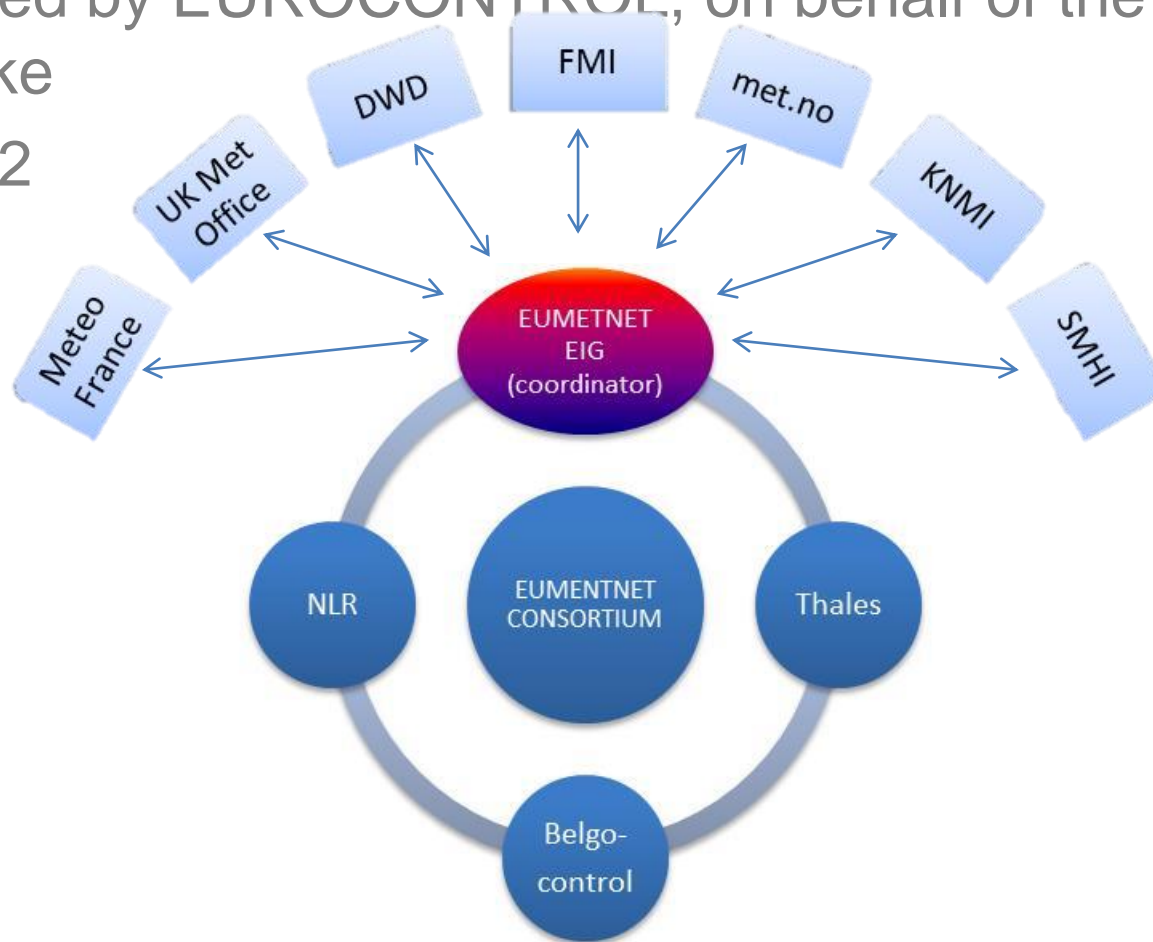
Is a grouping of 31 national European MET Services which provides a framework that allows weather services to:

-  work together, share ideas and best practice
-  share the costs of major infrastructure investments
-  provides a collective 'voice' for its Members
-  organise co-operative programmes in areas such as observing systems, data processing, basic forecasting products, research and development and training

<http://www.eumetnet.eu/> for more information.

EUMETNET Consortium – WP11.2

EUMETNET EIG is the coordinator of a consortium which includes the following participants. The consortium is contracted by EUROCONTROL, on behalf of the SJU, to undertake WP11.02



SESAR 11.2 MET Developments

MET Capability Development

3D Wx Radar Composite

Super-Ensemble mesoscale forecast of convection

NowCasting of convection

Diagnostic & forecasting of icing

Forecasting of turbulence (CAT)

Forecast of winter condition at airports

Network capacity reduction due to weather across Europe

Support to 4D trajectories

Assessment of new instrumentation - E-AMDAR & Mode-S

4DWxCube/MET-GATE & integration with SWIM

SESAR MET Demonstrations & Validations

MET Capability Development

TOPMET – demo involving Brussels Airlines and DSNA

TOPLINK – demo involving Brussels Airlines and DSNA

VP700 – validation pan-European coverage of Advanced Short Term ATFCM

VP811 – use of AIS and MET information in the cockpit

VP513 – validation winter weather, de-icing management

VP791 – Use of global ensemble wind forecasts in flight planning

SWIM Masterclass – SWIM enabled MET info provision

VP461 – Digitally Enhanced Briefing Services