



annual report 2008



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Foreword by Steering Committee Chairman

It is gratifying to report that MET Alliance continued to make real progress in 2008 in meeting the objectives it set itself at its inauguration in January 2005.

New developments in aeronautics and the accelerating implementation of Single European Sky initiatives continue to challenge the aviation MET communities in Europe. One of the main objectives of MET Alliance is to meet these challenges in an efficient and cooperative way, building capacity and maximizing the cost-effective provision of service to aviation.

To meet this objective, MET Alliance is simultaneously strengthening its relationships with other aviation MET services and actively participating in new developments supporting the construction of Functional Airspace Blocks in Europe. In this regard MET Alliance staff are actively progressing MET issues in the FABEC and other FAB structures. Meetings dealing with MET issues in Brussels and De Bilt made a significant constructive contribution to developing a better understanding of MET requirements and MET capacity by the main actors in the FABEC.

The year 2008 also saw a greater engagement between Météo France and MET Alliance in recognition of the need to provide common solutions to MET issues in the FABEC. Both organizations are working together so that FABEC has a common MET focal point and a structure on which to build an environment favourable to common developments, optimizing the MET contribution to the safe, efficient and cost-effective provision of service to users and customers in the FABs.

MET Alliance maintained the pace and quality of implementation of its other projects in 2008. The work started last year, to develop common Key Performance Indicators, continues apace. This work has two crucially important objectives:

- To provide real, credible and internationally endorsed performance indices which will allow member organizations to determine their own performance levels which can be used in quality management system audits
- To provide the airlines and other organizations with performance measures that are meaningful and in which they can have faith

The development and implementation of such KPIs is also aligned with the second package of the Single European Sky, which has set up quantitative objectives, and with the decision to make quality managements systems in aviation MET services a standard by ICAO.

The project “TAF verification” can now be counted as a major success of MET Alliance. The verification of every TAF issued by the members is carried out operationally by Austro Control on behalf of members. A standing Expert Team on TAF Verification has been set up with a responsibility to discuss the results from the verification, make

proposals for improvements and assess proposals from the Board for changes. This project perfectly illustrates our goal of cost reduction, the realization of economies of scale and increased harmonization, key objectives of MET Alliance.

The success of MET Alliance shows clearly that collaboration and cooperation are the bases on which aviation MET service provision in Europe must develop. Such an approach will provide the best outputs in terms of safety and quality and will also provide the most cost-effective solutions to the major challenges facing us. The way forward is now clear. Let us move bravely and confidently into this new world.



A handwritten signature in black ink, consisting of a long, sweeping vertical stroke followed by a small, stylized flourish.

Remco den Besten
Steering Committee Chairman

Activity report by Board Chairman

The decision made in 2007 to appoint a full time officer to provide research and development expertise for the MET Alliance already paid off in the first year. The work of Tamara Comment contributed in an efficient and valuable way to the further development of the MET Alliance.

The absolute highlight of 2008 was the presentation of the MET Alliance's core project "Verification of Terminal Aerodrome Forecasts" at the EANPG/METG in Paris. Since November 2008 the TAF verification is operational. This is a major milestone for the MET Alliance.

Another highlight is the significant progress we made in the work of "Common Key Performance Indicators". For 2008 the MET Alliance members established a first set of common indicators. This work will form the essential basis for future projects relating to comparative performance.

Functional Airspace Block is the key phrase for an efficient air traffic management in the near future. We are especially happy that Meteo France joined us as a Partner so that the MET Alliance acts now as a single point of contact for the FAB Europe Central (FAB EC). Through cooperation and sharing knowledge and experience the challenges of the future will be faced.

Progress without hard work is impossible. It's not an easy task to make significant progress with limited resources. Several workshops brought together the specialists of the MET Alliance members and achieved what each single organization alone couldn't: come up with solutions. Taking care not to set lofty and aspirational goals, MET Alliance is progressing step-by-step with achievable but substantive and substantial achievements which will be of significant benefit to the aviation community.



Marcel Haefliger
Board Chairman

Summary list of activities in 2008:

Board Meeting	Zurich	15/16 January 2008
Board Meeting	Vienna	16/17 June 2008
Steering Committee Meeting	Brussels	7/8 May 2008
Steering Committee Meeting	de Bilt	29/30 October 2008
Meeting: SC with the FABEC	Brussels	8 May 2008
Operational WG's chairman		
Meeting: SC with the FABEC	de Bilt	30 October 2008
6 States WG's chairman		
TAF verification workshop	Hamburg	3/4 March 2008
"TAF verification project" is operational		November 2008

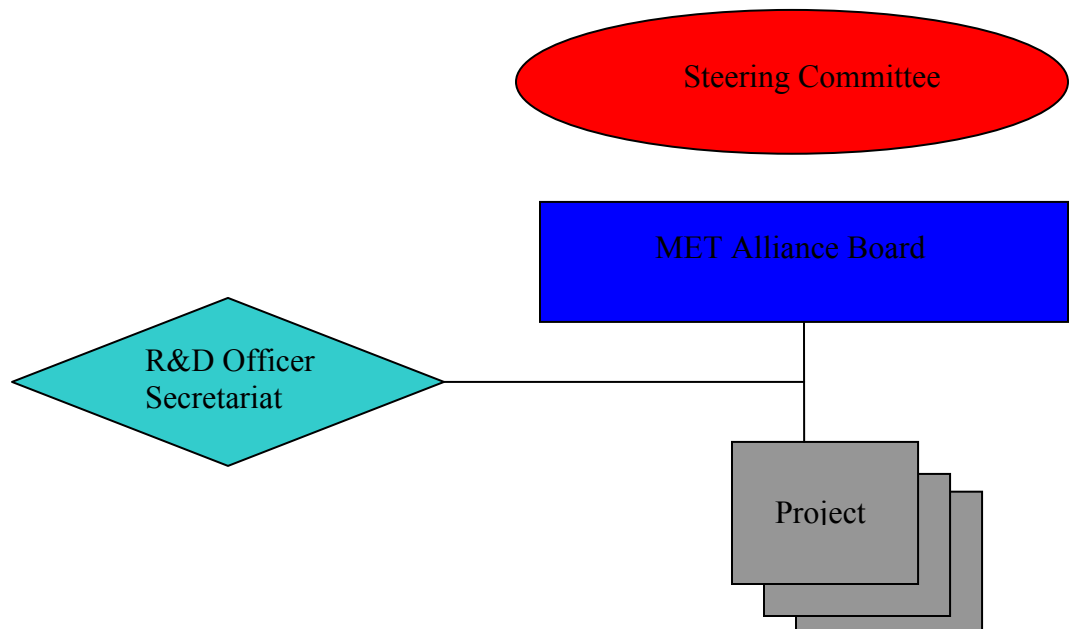
Organisational Support and Communication

Establishment of the Secretariat

The Secretariat acts as the focal point and clearing house for external and internal communications. All communication with the MET Alliance is now dealt with by the Secretariat.

The Secretariat contact details are:

MET Alliance
Tervuursesteenweg 303
B-1820 Steenokkerzeel
Belgium
phone: +41 22 716 28 52
fax: +41 22 716 28 29
e-mail: tamara.comment@meteoswiss.ch



Website

The website is a useful source of information for external users and an efficient platform for internal communications.

The website address is:

www.met-alliance.com

Ongoing Activities in 2008

In 2008, implementation of the Single European Sky led to the development or continued consideration of a range of Functional Airspace Blocks (FAB); FAB UK/Ireland is now operational, FABEC has recently been kicked off and FAB CE is at an advanced stage.

The main purpose of MET Alliance is to develop and implement winning strategies which will lead to the provision of more efficient and cost-effective meteorological services to the specification and satisfaction of users. MET Alliance is working on developing closer working relationships with the FAB management systems, focusing especially on FABEC. This initiative allows MET Alliance to underline the benefits of having a single point-of-contact for MET issues from a professional organisation dedicated to meeting the needs of aviation in the MET domain. These benefits include:

- Better and more efficient identification of the challenges in the MET domain posed by the Single European Sky policy
- A clearer identification of the systems and services that are or can be provided by MET to enhance the safety and efficiency of ATM
- The provision of a harmonized view under a single voice in the field of aeronautical service provision (a *one-stop-shop* solution for MET)

MET Alliance is already well placed to provide these benefits to the FABEC community.

In accordance with its mission, MET Alliance is continuing with projects which increase the quality and the cost effectiveness of meteorological services for the aviation sector. A significant achievement in 2008 is the project TAF verification, which is operational since November 2008. Under this project the verification of TAFs, crucial to ensuring the value and continual development of TAF accuracy, is carried out centrally by MET Alliance for its constituent organisations. This project will feed into the development of common key performance indicators amongst MET Alliance members for TAF accuracy. Other projects are still in progress and will, in time, provide similar important benefits.

Common Key Performance Indicators (cKPIs)

A first iteration of common Key Performance Indicators (cKPI) has been agreed. Ten indicators have been defined in this first iteration. The list will be expanded later, as needs develop and taking account of user requirements and the requirements of the individual National Supervisory Authorities and quality management systems. By definition, the aim of a KPI is to measure quantitatively the progress done to reach a strategic goal; the KPI can be financial or non-financial.

The cKPIs defined by MET Alliance are related to the following goals: accuracy, timeliness, cost efficiency, satisfaction of users' needs, ensuring and improving safety. Economic KPIs are under active consideration. A first measurement of the latter will be conducted by MET Alliance during the course of the year 2009. When completed these projects will provide MET Alliance members with real and substantive information on their economic and operational performance measures and will identify the route forward to more efficient and cost-effective provision of service to its customers.

The current list of KPIs will be presented during the 2009 METG meeting in Paris.

A maturing organization

MET Alliance, as a whole, is more than the sum of its parts. The members of MET Alliance share information about hot topics: Airport Capacity Forecasts, Automated Aviation Weather Observation, training, Safety Management System, AUTOTAF etc. The experience that each one brings is of inestimable value.

MET Alliance is not only growing in age and in experience but in size as well. A strong relationship has started with Météo France, in order to meet the challenges of FABEC in the most effective way possible. A Memorandum of Understanding between MET Alliance and Météo France is currently under consideration.

Having already obtained the recognition of its own peers, MET Alliance is also looking to play a role in the world of aeronautics. In 2008, for the third time, MET Alliance was presented at the ATC Global exhibition in Amsterdam, with a poster hosted by the DWD.



Special topic: the common TAF verification scheme

Implementation of quality system for MET is a key recommendation of ICAO. In such a context, the assessment of the quality of TAFs is essential. The results are of crucial value for management, the aviation forecasters and the users of MET services and are equally essential to design continual improvement systems under quality management systems.

In January 2007, the MET Alliance Board agreed a Project proposal for a common TAF Verification Scheme within the MET Alliance. The project management was under the responsibility of the DWD. In March 2008 a workshop was arranged in Hamburg, in order to design proposals on the future development of the scheme. The concept originally developed by Austro Control was accepted to be the common verification scheme, with customizations implemented by MET Alliance. The system is tailor-made with respect to TAF elements and properties.

Since November 2008, the MET Alliance TAF verification has been operational. The actual statistics are compiled by Austro Control and the system is maintained by this organisation on behalf of MET Alliance.

A first report concerning the verification results of all the organizations of MET Alliance will be published in October 2009.

The method

Point verification (i.e. one observation is used to verify more than one forecast state) has been proved to be difficult for TAFs. To ease this difficulty, time and meteorological state constraints are relaxed. This is done by verifying two conditions for each hour of the TAF: the highest (or most favourable) observed value is used to score the highest forecast value; the lowest (or most adverse) observed value is used to score the lowest forecast value. METARs and SPECIs are used as available observations within the respective hour.

The following elements are verified by the system: visibility, cloud ceiling cloud height, present weather, wind speed and wind gusts. The wind direction is verified for winds ≥ 7 kt.

Contingency tables are used, one for “maximum” conditions and one for “minimum” conditions. Such a method allows for the different requirements for a verification system; customer-oriented verification, flight planning (frequently based on the lowest (most adverse) forecast conditions being below a threshold); management information. Common verification measures for categorical events are calculated from the contingency tables.

Different scores are calculated. However the score calculated to meet the requirements of ICAO Annex 3, Attachment B, are strongly dependant on the climatology of airports. Therefore these scores are not suitable for measuring continuous improvements. Therefore the verification expert group recommends using a common key performance indicator which is correlated to hit rates and false alarms for significant weather events.

The benefits of the project

A first and obvious benefit of this project is a significant reduction in the cost of TAF verification: the cost of the R&D, along with ongoing maintenance and development of the system, is shared by all the MET Alliance organisations leading to significant economies of scale and consequent cost efficiencies to users. The second benefit is the provision of a harmonized method of forecast verification for use by the member organisations. This also has the significant advantage that TAF verification is more coherent and therefore easier to use and understand by customers. A further advantage is that verification experts from each country meet annually to analyze and discuss the results together, and make proposals for the further development of the system.

The MET Alliance TAF Verification Group will examine the potential for the verification results to lead to the definition of best practices in the field of forecasting and TAF production.



Strategic Developments and Single European Sky

MET Alliance members were and are active and influential participants in important groups dealing with MET service provision in Europe - Avimet, SESAR, ICAO and, especially, FABEC. Two common meetings have been hold in the year 2008: in spring and in autumn. MET Alliance, with its rich and lengthy experience in MET, is working hard to ensure the effective and ordered progress of SES initiatives related to MET, focusing particularly on the definition and implementation of substantive quick wins.

The FABEC comprises Netherlands, France, Belgium, Switzerland, Germany and Luxembourg. Additionally, Ireland and the UK signed a FAB agreement during the summer and Austria is part of the developing FAB CE. Despite these differing initiatives and organisational approaches to FAB development, all members are interested in developments relating to MET in FAB environments as the ultimate goal of SES strongly implies that common standards and methods of service delivery will be required in the unfolding single sky. MET Alliance is making a real and effective contribution to the search for the best solutions to the MET challenges presented by the new FABs.

MET Alliance is a new type of organisation, working as an efficient network of MET providers. In 2008, MET Alliance continued to meet the challenges posed by the requirement to find the most effective balance between sovereignty and standardisation of products and services. This continues to be a fundamental part of the work of MET Alliance.



The Year Ahead

The year ahead poses many challenges which will be met with confidence by MET Alliance. The current general economic downturn will impact on all MET service providers as we respond to the cost pressures on airlines. The continuing efforts to respond to the demands of the Single European Sky will also require imaginative and cooperative responses.

One crucial element of the workplan for 2009 is to get real and meaningful quantitative measures of performance, both in quality of outputs and services and in cost efficiency. This is not a trivial task. The complexity and nature of MET services, the differing organisational structures providing MET services and the intrinsic nature of weather forecasting all make the development of coherent and credible comparative measures of MET performance a challenging task. However a successful outcome to this work is essential, not least to prove the value of MET services to users and to form the building blocks of continual improvement in MET services under quality management systems. Of course, the availability of real and credible comparative measures of performance will present challenges to the individual members of MET Alliance. MET Alliance welcomes this development and is tasked with dealing with these issues in a cooperative and transparent way.

As the new MET Alliance TAF verification scheme is now embedded the next stage of forecasting assessment is to develop and implement a verification system for TREND forecasts. In addition to the continued development of the TAF Verification Scheme, the verification of TRENDS will be considered by the TAF Verification Group during 2009.

Continuing to implement the strategic imperatives of MET Alliance, three workshops will be organized in the course of 2009: one concerning AUTOTAF and Model Output Statistics (MOS), a second in June concerning TAF and TREND verification and the third one on remote sensing.

Workshop AUTOTAF and MOS:

The AUTOTAF system provides guidance for forecasters in producing TAF and, additionally, has the capability to produce a full AUTOTAF. An essential element of the system is the production of Model Output Statistics (MOS). The problem with this is that every update of the underlying model requires a re-doing of the associated MOS. This can be an expensive task both in time and money. MET Alliance is currently investigating if there are more cost-effective solutions to this problem, including self adjusting MOS-systems.

Workshop TAF and TREND verification:

In March 2009, a full year of data will be available for TAF verification. This will provide an opportunity in June for the TAF Verification Group (MATVG) to examine

these results and develop a common method for analysis and interpretation. The same TAF verification scheme will be used to check the quality of produced AUTOTAFs.

The MATVG will use this opportunity to examine and discuss the issue of TREND verification.

During 2009 MET Alliance will continue the drive to explain to users that MET services can be provided in a cost-effective, professional and safe way through cooperative action and a pooling of resources, building on the long history of such cooperation in the MET domain.

Profile of Member Organisations



Austro Control

The Austrian MET Service Provision for Civil Air Navigation is one of the core processes of the national Air Navigation Service Provider Austro Control. The MET Service Units are located at six international airports (Vienna, Linz, Salzburg, Innsbruck, Graz and Klagenfurt), the Vienna office is Meteorological Watch Office. In addition, Austro Control is partly responsible for the service provision for the Austrian Air Force. The Vienna office is also one of the three European OPMET Databanks providing the world with OPMET information.



MeteoSwiss

MeteoSwiss is the national weather service in Switzerland. It fulfils its meteorological tasks for the use of the public, businesses, and public institutions. The MET service units are located at the international airports Zurich and Geneva. MeteoSwiss issues forecasts for these international airports and all the regional airports.

Furthermore it provides en-route documentations and briefings and is also responsible for warnings at the aerodromes as well as for the FIR Switzerland.



Met Éireann

Servicing aviation needs under ICAO regulations for Ireland is one of the most important tasks of Met Éireann. It

comprises the Central Aviation Office at Shannon Airport together with the meteorological offices at Dublin, Cork, Knock and Casement airports. It issues forecasts (TAFs and Local Area Forecasts) for the various airports and smaller airfields in the country, as well as local warnings, SIGMETs for the Shannon Flight Information Region (FIR), en-route documentation and briefings. Meteorological services for the Defence Forces and meteorological training are provided at Casement Aerodrome.



Belgocontrol

Belgocontrol is an autonomous public company in charge of the safety of air navigation in the civil airspace for which the Belgian State is responsible. It controls aircraft movements in and around Brussels Airport and the four regional public airports: Antwerp, Charleroi, Liège and Ostend. The company has its own in-house meteorological service. The Belgocontrol's Met Office produces weather forecasts and warnings, while ensuring the meteorological watch for the Flight Information Region of Belgium and Luxembourg. Furthermore, the Brussels office is also one of the three European aeronautical meteorological databases serving aeronautical users.



KNMI

KNMI is responsible for the service provision in Dutch Airspace and at all the international and regional airports of the Netherlands. The central forecasting unit of KNMI, located in De Bilt, is the central production facility for all the forecasts and warning, and is supported by small units at the regional airports and the weather dependant deployment of forecasters at the Schiphol Airport site. Furthermore, the central office is performing the tasks of Meteorological Watch Office for the Dutch FIR and for the Dutch Continental Shelf (North Sea).

DWD

The Deutscher Wetterdienst (DWD) is as National Meteorological Service of the Federal Republic of Germany responsible for providing meteorological services for the protection of life and property. This core task includes the meteorological safeguarding of aviation. The Department for Aviation Meteorology of DWD operates seven regional advisory centres for Flight weather forecasting, warning and aeronautical meteorological advisory service. In addition, three of them are performing the tasks of Meteorological Watch Offices. The broad spectrum of aeronautical services includes the development and operation of self-briefing systems for all kind of IFR and VFR traffic as well as special services for ATC and airport operations. Furthermore the DWD is authority of meteorological supervision at all international and regional airports.

