WORLD METEOROLOGICAL ORGANIZATION

_____

JOINT MEETING:
CBS EXPERT TEAM ON AIRCRAFT BASED OBSERVATIONS
(Third Session)
AND
AMDAR PANEL
(Fourteenth Session)

(QUEBEC CITY, CANADA, 2-4 NOVEMBER 2011)

ET-AIR-3 and AMDAR Panel-14/Doc.3.4.1(4)

(20.X.2011)

_____

ITEM: 3.4.1

Original: ENGLISH ONLY

AMDAR PROGRAMME STATUS

Status Reports on National and Regional AMDAR Programmes

Established AMDAR Programmes

Status report of the European AMDAR Programme

(Submitted by E-AMDAR)

Summary and purpose of document

This document provides an update on the activities and plans, since the 13th Meeting of the AMDAR Panel, for the European AMDAR Programme.

ACTION PROPOSED

1. The Panel is invited to note the information contained in the document.

_____

PROGRESS/ACTIVITY REPORT

Current Status:

1. The E-AMDAR programme has performed well, fulfilled or exceeded, all its targets and produced meteorological data of high quality.

   An example is given in the table below with the results from the second quarter of 2011.

EUCOS Objectives for E-AMDAR	Target	April ACTUAL (Gross)	May ACTUAL (Gross)	June ACTUAL (Gross)
Number of airports in EUCOS area observed daily	140	151	145	140
Number of 3 hourly observed airports	40	53	53	51
Total daily number of profiles within EUCOS area	780	1098	1106	1085
Data over Sensitive EUCOS Areas	27%	35.80%*	36.70%*	35.60%*
WWW contribution	12%	12.60%	12.60%	12.40%
Annual number of E-AMDAR funded observations	12M	1,57M	1.65M	1.55M
Total number of E-AMDAR aircraft equipped with development WVSS-II units	3	3	3	3
Timeliness T + 50	90%	92.75%	95.76%	96.38%
Timeliness T + 100	95%	97.87%	98.72%	98.24%
Average number of daily aircraft	-	602	608	604

* Figures include the data provision for NMHSs in the area (gross).

During the late autumn 2010 easyJet with more than 150 Airbus A320 was included in the Programme. This is the first example of a second generation airline cooperating with an AMDAR Programme! The total fleet now exceeds 800 aircraft in 13 airlines.

In addition to delivering observations according to the EUCOS objectives above the Programme continues to deliver nationally funded extra data to DWD, Météo France and Met Office, as well as targeted observations for Singapore NMS, South African Weather Service and, since 1 November 2010, also to the India Meteorological Department.

The ash cloud from the eruption of the volcano Grimsvötn in Iceland caused only minor disruption for aviation and E-AMDAR observations. The main influence was in northern UK on the 23rd-24th May as shown in Figure 2 and some airports in northern part of Germany were closed for a 24 hour period. Also air traffic in southern Norway and parts of Sweden were influenced to some extent.

Figure 1 – Oh no, not again please……

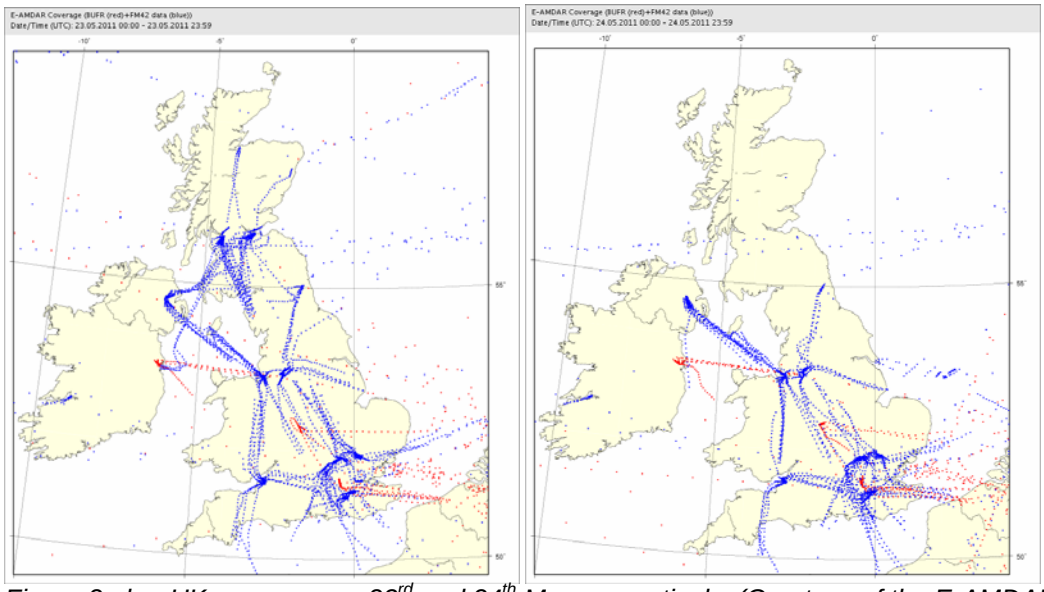

Figure 2a,b – UK coverage on 23rd and 24th May respectively. (Courtesy of the E-AMDAR Portal at DWD).

The number of observations from participating airlines are shown in the Figure 3 from August 2011.

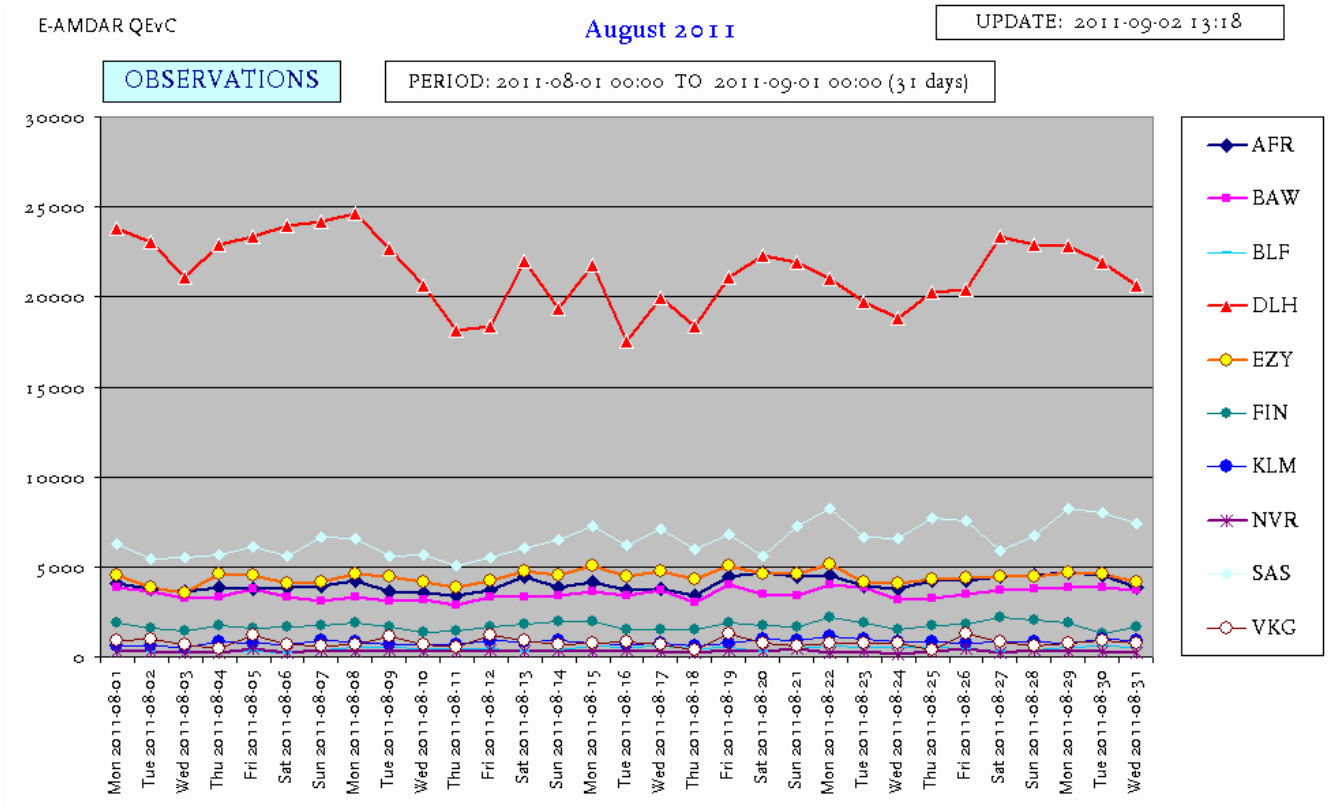

Figure 3 – Number of observations per airline in August 2011 (Courtesy of the QEvC at KNMI).

In the European fleets the main part of costs is coupled to the amount of data transmitted via the worldwide communication networks. All airline fleets are therefore managed through optimisation systems. The system E-ADOS (E-AMDAR Optimisation System) ensures an adjustable and equally distributed data coverage in time and space without redundancies in order to save data transmission costs. The airlines of Lufthansa, Finnair as well as the B737 fleet of KLM belong to the E-ADOS pool of commonly coordinated activation. The AMDAR activity of aircraft within this pool is structured by configurable priorities of aircraft, airports and regions. For example a small number of special aircraft like those with humidity sensors can get a high priority level. Currently the three units with humidity sensors in the Lufthansa fleet are set to the standard level until the new generation of instruments is installed later. On demand the atmospheric data sampling is targeted to airports beyond the standard range of EUCOS. This is done for example for the NMHS:s in Singapore, South Africa and India.

Most of the optimisation systems for the other airlines are based on the same concept but the degree of complexity varies between the systems.

Development and other Activities:

1. The Programme continues to run the Extended Humidity Trial (EHT). Based on a MoU, DWD is responsible for the various parts of the Trial. Results from the climate chamber tests of the humidity sensors WVSS-II v3 have been reported earlier.

2. Currently two of the sensors WVSS-II v3 are being tested on the UK FAAM research aircraft. Preliminary results from the first test periods are very good. A final report will be available in November 2011.

3. Much work has been spent, in cooperation with WMO and the E-AMDAR TAG, on the new WMO AMDAR BUFR Template as well as the upgrade of the ARINC 620 standard. A proposal for the revised version of the standard has been sent to ARINC.

Future Plans:

1. Negotiations are under way with Lufthansa concerning replacement of the three WVSS-II v2 sensors, in use since 2007, with the WVSS-II v3 as well as equipping six more of their Airbus A320 aircraft with the latest sensor. Replacement and equipping is scheduled to start during the third quarter of 2012.

2. If funds will be available another 6 humidity sensors will be purchased aiming at a fleet of 15 equipped aircraft. Discussions with more airlines will be conducted concerning equipping their aircraft with humidity sensors.

3. A further upgrade of optimisations systems to eliminate the remaining redundant observations is planned.

4. Software development is considered for making the SAS CRJ900 fleet AMDAR capable.

_____