WORLD METEOROLOGICAL ORGANIZATION

ET-AIR-3 and AMDAR Panel-14/Doc.3.4.1(13)

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

ITEM: 3.4.1

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

Original: ENGLISH ONLY

AMDAR PROGRAMME STATUS

Status Reports on National and Regional AMDAR Programmes

Established AMDAR Programmes

Status Report Finland

(Submitted by Finnish Meteorological Institute, FMI)

Summary and purpose of document

This document provides information on the activities and plans for the Finnish AMDAR Programme.

ACTION PROPOSED

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

PROGRESS / ACTIVITY REPORT

Current Status:

1. The Fleet's Status

FMI is a quite new member of AMDAR concerning our aircraft made observations in Finland. Before autumn 2009 the only AMDAR observations were received in Helsinki area by "foreign aviation companies".

In autumn 2009 BLUE1 signed an agreement to produce AMDAR observations. After that in spring 2010 FINNAIR signed a similar agreement. BLUE1 fleet consists of 5 and FINNAIR fleet of 30 aircrafts (A320) producing AMDAR data.

After these agreements the situation in AMDAR profiles improved remarkable. Also observations from Central, Eastern and Northern part of Finland were possible to take into use at FMI. Data from these parts of Finland are received several times per day. This is a remarkable improvement compared to ordinary radiosonde observations.

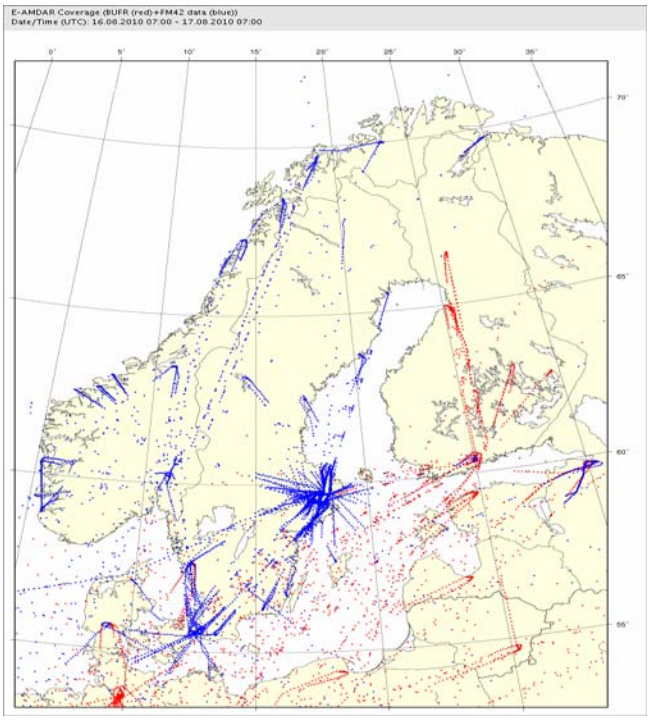

Fig. 1. Internal production of AMDAR observations in Finland.

2. Use of AMDAR Data

Via international data delivery network FMI receives AMDAR data and routes the data into the numerical weather prediction model (HIRLAM) and into workstations for forecasters and other users at FMI. These workstations include quite sophisticated user interfaces. It is possible to produce automatically plots of sounding profiles from different sources on the screen of workstations. So, on the same figure it is possible to plot ordinary soundings plus AMDAR profiles at the same time. See example below.

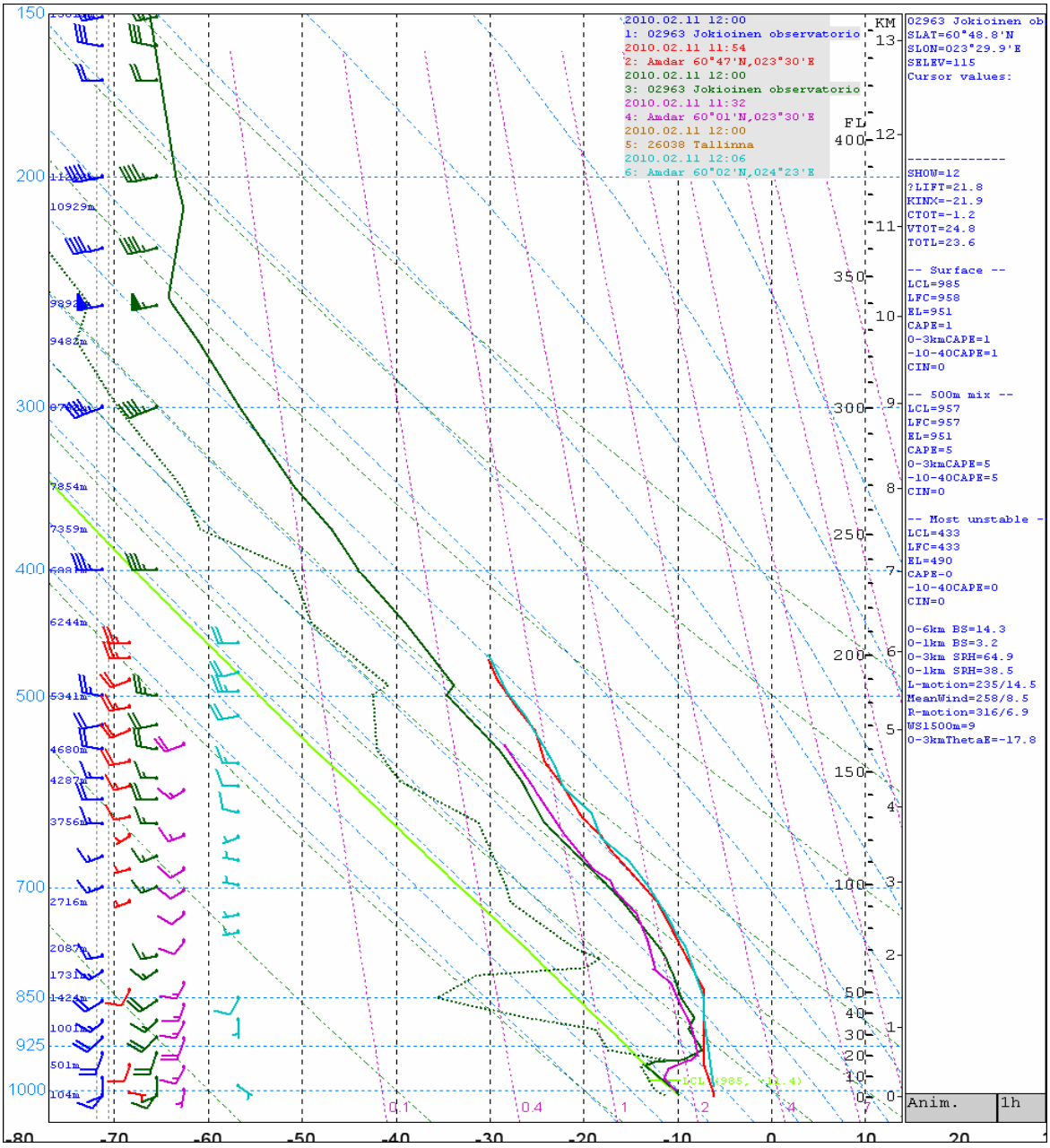

Fig. 2. Sounding from Jokioinen observatory and 3 AMDAR profiles on the 11.02.2010 at 12 UTC.

Forecasters are trained to utilize these profiles at their work.

3. Development and other Activities:

From the figure 2 it is easy to find out that AMDAR profiles are sometimes biased and inaccurate. More or less two AMDAR profiles are inaccurate. Clear inversion situation is not visible from these observations and also wind data differ from sounding data.
The end-users should be provided with information of:

a) Biased data.
b) Clearly suspicious data (QC / flagging?).
c) Missing data (levels) can cause wrong information close to ground. How to inform users?
d) Feedback to aircraft companies.
e) Humidity observations should be included as much as possible.

4. Future Plans:

FMI co-operates within E-AMDAR / AMDAR.

Financial responsibility of data coming from some national airports is unclear at this moment. Profiles from 5 airports are supported by E-AMDAR and status of 6 other airports is unclear. Some financial support and optimization will be needed.

Finnair has also 15 x wide body A330/340 and 16 x EMB170/190 aircrafts. These aircrafts are not yet producing AMDAR data.