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**CIMO EXPERT TEAM ON
UPPER-AIR SYSTEMS INTERCOMPARISONS**
First Session

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AND

**INTERNATIONAL ORGANIZING COMMITTEE (IOC) ON
UPPER-AIR SYSTEMS INTERCOMPARISONS**
First Session

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PRESENTATION ON RECENT NATIONAL TESTS/COMPARISONS

**Status of Current Radiosonde Operations and Recent Tests
by the Royal Netherlands Meteorological Institute**

(Submitted by Henk KLEIN BALINK, Netherlands)

Summary and purpose of document

This document provides information on the Royal Netherlands Meteorological Institute recent tests and comparisons of new radiosondes.

Action proposed

The meeting is invited to note and comment on the information contained in this report and take actions on the issues raised, as appropriate.

Status of Current Radiosonde Operations and Recent Tests by the Royal Netherlands Meteorological Institute

1. Status Operational Radiosondes.

Since 3rd of January 2001 the KNMI launches the RS90-AL radiosonde. In preparation of the introduction of the RS90 radiosonde some test flights were conducted in summer and winter of 2000. However no written report on these tests is available. No additional tests were performed to assess the data-quality after introduction other than operational monitoring (needs to be verified). A short interruption of the daily launches was imposed by the KNMI management from 1st of July 2002 till mid November 2002. After that the operational launches were resumed but now twice daily (at 00 and 12 UTC) instead of four times daily. Furthermore new operators for the balloon launches had to be trained. Once a week an Ozon sonde is launched along with an RS80 radiosonde. This operation started in the autumn 1992.

2. Test of Snowwhite sensor.

In October 2002 a series of 5 flights with a combined ascent of a Snowwhite/RS80 and a RS90 sonde were executed in Paramaribo, Suriname (5.81N, 55.21W). Another series of 5 Snowwhite flights is presently executed from the same location. Analysis of the ascents of 2002 has been performed only qualitative so far. For the present test the RS80/90 are checked also at 100% humidity before launch (method developed by Leiterer, DWD). A report on the results of these 10 flights is expected later this year. For 2004 and 2005 one Snowwhite flight per month is scheduled to be synchronized with the overpass of SCIAMACHY on board of ESA's ENVISAT satellite. It is also planned to have some additional launches in the framework of the EU project STAR. Ozon sondes are routinely launched once per week from the location in Paramaribo since September 1999.

3. BBC2 campaign May 2003.

During the BBC2 campaign in May 2003 (<http://www.knmi.nl/samenw/bbc2>), a series of 74 RS90-AL radiosondes were launched in 20 days from the research site Cabauw (51° 58' N 4° 55'E). As an additional pre-launch preparation each sonde was also tested at 100% humidity. Unfortunately the field operators didn't note all the 100% test readings carefully. The values of 27 readings correctly registered spread from 99% up to 103%, with a mean of 100.5%. Comparison of Integrated Water Vapour from the RS90 radiosonde, GPS and a 22-channel microwave radiometer (MICCY) showed in general good agreement but some bias is found (see Figure 1). A comparison of the RS90 radiosonde humidity readings with data from the ARAS Raman lidar (GKSS) operated during BBC2 is planned as soon as the data of the ARAS system have been processed.

The Integrated Profiling Technique (IPT) recently developed by Dr. Ulrich Löhnert (Univ. of Bonn) has been applied to the BBC2 data. The IPT technique calculates profiles of temp, humidity and cloud liquid water from microwave radiometer, cloud radar and radiosonde data, in a physical consistent way. The results of the IPT method will be assessed in the near future. The IPT technique holds future promises for providing thermodynamic profiles at a high temporal and vertical resolution.

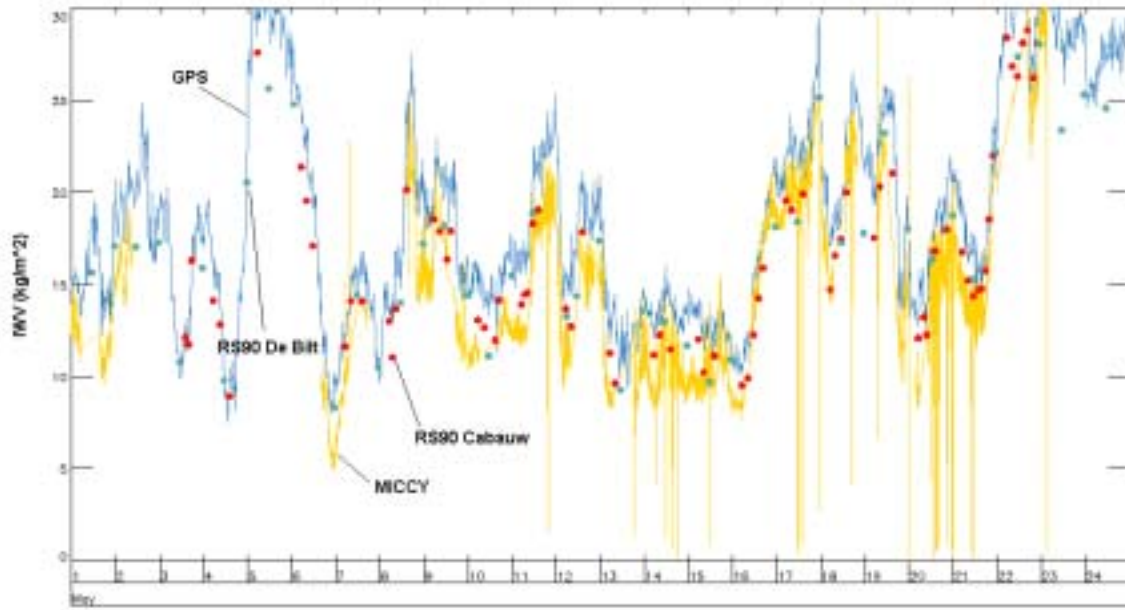


Figure 1.