DESCRIPTION AND ORGANIZATION OF
THE WMO COMBINED INTERCOMPARISON OF THERMOMETER SCREENS/SHEIELDS IN CONJUNCTION WITH HUMIDITY MEASURING INSTRUMENTS

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Description and Climate of the Site
The WMO combined Intercomparison of thermometer screens/shields in conjunction with humidity measurements was held from the 1st of November, 2008 to the 31st of October, 2009, at the meteorological station of Ghardaïa, Algeria, situated at 640 Km south of the capital Algiers. The meteorological station (32°24 N, 03°48 E, 468 meters above the sea level) is bordered to the north west by the city of Ghardaïa (20 Km), to the east is the Noumerate Airport (1500m), to the north is an open field and in the south the national road N°1.

The climate of the city of Ghardaïa is characterized by low annual precipitation, which is extremely variable. The annual distribution of temperature is fairly uniform. The temperatures of summer vary from 40°C to 45°C and the absolute maximum recorded in Ghardaïa is 47°C in July 2005. The maximum winds are about 15 m/s, occurring during the spring season, and their direction are predominately from north-northeast.

Sunshine duration
The mean monthly totals of sunshine duration show a maximum of 350 hours in May 2009 and a minimum of 195 hours in January 2009. April, May and October 2009 had significantly greater values of monthly sunshine duration than the normal. The yearly maximum event occurred in May and not in August as usual.

Temperature and relative humidity
The monthly mean temperature of Ghardaïa is 10.4°C in January and 36.6°C in July.

Wind
Stronger winds in the region of Ghardaïa are mostly prevailing during the period from March to June. On average of 3.3 days of dust storms and 49 blowing sand events occur per year.

Precipitations
Rainfall events in Ghardaïa may be compared to Mediterranean type or arid tropics rainfall events: there is highly variable from 1 to 100 mm/h when violent thunderstorms occur.

Presentation of the Ancillary Measurements
To evaluate the effects of wind and radiation on temperature and humidity sensors, the field was equipped by an additional meteorological measurement.

Routing of the Data
All the data which are analog or Digital are stored on an acquisition Computer. This computer contains the two software of visualisation and storage of the data; one is for the analogue software and the other for digital data. The data are then transferred to a server PC, to facilitate the routing of the data to Trappes and Algiers for processing and analysis.

Software for the Analog sensor
Software for the digital sensor

Synopsis of the data collect

References
• Final report of the 4th (reduced) session of the Expert Team on Surface Based Instrument Intercomparisons and Calibration Methods and of the 4th (reduced) session of the International Organizing Committee on Surface Based Instrument Intercomparisons, Ghardaïa, 19-23 March 2007.

Presentation of the screens and humidity sensors
29 Screens participate to the Intercomparison most of them are installed by pairs (15 naturally ventilated & 14 non-ventilated) and 17 humidity sensors both of them are also installed by pairs, having thus 08 different types of sensors.