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First Session

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REVIEW OF RELEVANT GUIDANCE MATERIAL FOR NECESSARY UPDATES

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Summary and purpose of document

This document provides information on changes in a design of radiosondes and ground stations and future trends.

Action proposed

The meeting is invited to take into account information presented in this document when discussing review of related guidance material and “universal” Upper-air systems.

Review of Relevant Guidance Material for Necessary Updates.

1. Radiosondes.

The analogic sondes are probably becoming a technology of the past. SIPPICAN, MODEM, VAISALA proposed numerical GPS-3D sondes which are now used by many National Meteorological Services. This new technology offers a more reliability in systems and a better availability of parameters, mainly in wind data. Moreover, the numerical sondes don't take an important place in the frequency Bandwidth; this evolution will be very useful in the context where place for frequencies is becoming rare.

However, at present time, the new sondes are generally expansive and need specific ground material and data processing software.

The tendency for the next years will be probably a continuous cost decrease of the GPS sondes due to the high development of the GPS electronic card in the world.

This cost evolution will be very important for rather poor National Meteorological Services and for the W.W.W.

Another important consequence of the numerical GPS-3D sondes is probably the progressive disappearing of the LORAN C word determination. In fact, this technology is becoming difficult to use due to a low level of maintenance in the South of Europe. Moreover their cost seems to increase relatively to GPS sonde since few Years.

2. Ground stations.

The evolution of numerical material implies that ground stations and sondes are manufactured in closed technologies.

Consequently it's very difficult to buy a system able to work with different sondes.

At present time some National Met Services are searching for the universal ground station. The definition of such a system would necessitate to get from manufacturers specific (or may be confidential) information on their sonde data processing.

The cost of ground stations remains high; to avoid the cost effective ground station possession, the location can be a good approach for the first years in order to minimize an important investment.

The Autosonde is a very interesting system to make staff economies in operational network, unfortunately the manufacturer doesn't offer the possibility to use different type of sondes. This fact represents an important difficulty for the development of Autosonde in some countries.

3. Software.

Distinction between data acquisition software and meteorological software use for the determination of the TEMP message and others met applications has to be done.

In fact the control and modifications of the meteorological software by the Met Service are very important for different technical evolutions without any request to the manufacturer. On an other side, the control of the data processing software is less useful for the Met Service and can be taken in account completely by the manufacturer.