

Enhance access to meteorological data in Cape Verde by using the Internet

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Weather and climatological information has a major role in numerous socio-economic aspects. Although the needs are manifold, from information about current or expected weather, to standard normal values and design values estimating probability of average or extreme weather events, the density of existing meteorological observing networks in Cape Verde is not enough to represent all possible locations for which such information is needed. Therefore “SICLIMAD-CV” project, supported by Portuguese Environmental Institute, aims at installing many new Automatic Weather Stations (AWS) in several islands of Cape Verde. One of the main goals of the project is the development and management of a database.

The database is designed to assist a wide range of entities dealing with meteorological fields: observers and technicians, telecommunication specialists, researchers, climatologists dealing with data quality and data management and professional workers, like heating and air conditioning specialists.

System based on Oracle, this database works on multiple platforms and offers several backup possibilities. Possible data formats this system can decode and ingest into the database are diverse: AWS, airport weather systems, alphanumerical WMO codes or BUFR, manual key entry, old database systems e.g. CLICOM, spreadsheets.

Data processing includes quality control with range, consistency, temporal and spatial checks completed with more complex checks in PL/SQL language and station communication/performance statistics. Output products are a variety of predefined reports (textual or graphical).

Moreover, recent developments within information technology indicate the growing possibility for spatial analysis using Geographical Information Systems (GIS). Such systems offer the possibility of analysing, deriving and presenting spatially distributed information about weather and climate. GIS is used both in data production and in presentation of climatological products, which include applications for making climate information available throughout the internet.

Finally, through a Web Graphic User Interface the database allows the management of data and metadata (data control, data generation, data inventory), the straightforward access to database information, to import any kind of meteorological data coming from different systems and to offer a wide variety of products, such as frequency distribution analysis, correlation analysis, among others.