DESIGN CONCEPT AND CAPABILITY OF THE DATA MANAGEMENT SYSTEM

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ABSTRACT

The software at the CWB Data Management Center was originally designed at the Data Management Center of the Incorporated Research Institutions in Seismology (IRIS), in Seattle, USA. There the DMC serves the entire IRIS community in the United States as well as users elsewhere in the world. It provides internet or modem access to (1) the earthquake parameterand archive database using sql-based search, (2) direct access to time series data for near real-time large earthquakes, (3) direct access to time series data for large earthquakes in the recent past, and for (4) request datasets from mass archive.

The CWB Data Management Center has already implemented the most basic function of the management system, and it can be expanded at any time to incorporate the features available at the IRIS/DMC.

The CWB Data Management Center has the following main hardware and software:

(1) Data archive.The hardware in use is based on a robotical helical scan tape system that has a total capacity of 750 gigabytes. It can be accessed as an Unix file system, but only the database computer has control of it.

(2) Database controller. A SUN workstation to control archiving, retrieving and querrying.

(3) SEED-formatted data archive tapes. All data are written in SEED format to conform to the Federation of Digital Network standards. This format allows the archiving tapes to contain all the relevant associated data and the parameter database is built from these archive tapes.

(4) SQL query. The database has as its engine the db_Vista SQL database software. With the SQL language, an user can query the earthquake parameter database concerning the location, the magnitude, etc.,and the availability of data for events that satisfy a certain criterium.

(5) User-interface.

A user anywhere on an internet node should be able to log into the DMC machine to perform parameter query and data retrieval tasks. The SQL language or the macros allow the users to make a wide variety of queries. Examples will be given.

Currently, only the CWB telemetered network data is routinely archived.The strong motion data, because of the newness of the network and the lack at present of complete instrument response data are in the process of being prepared for archiving.