

Appendix 2



Data quality information

Source maps

The reliability of the original maps used for the construction of the database can be assessed by reference to the bibliography in Chapter 5 of this manual. Each source map is listed according to the IMW tile classification (see Chapter 2, Fig. 2.2), and the method used to prepare the published maps is described. Any amendments made to the published maps by project staff during the preparation of the database, after reference to other source material (aerial photographs, satellite images, etc), are noted at the end of each source map description.

No relative reliability codes have been assigned to the source maps. An alphabetical code in the **source** attribute table indicates either the national map series used or the person providing data to the project. This information, coupled with the map sheet data, allows the source of each feature to be identified in the database.

Feature reliability

Many of the features included in the ADD versions 1.0, 2.0 and 3.0 have been depicted on published maps in different ways according to the known reliability of their position during the original topographic field survey. Thus features are described as either definite or approximate in the map legends and these variations have been translated into different codes in the **ADD code** attribute (see Chapter 2, Table 2.2).

Digitizing standards

For ADD Version 1.0 maps were manually digitized in the UK from stable film compilation sheets, film separates of published maps and paper copies of published maps. Hard copy output, on stable film, was then verified through independent quality control inspection. Digitized lines or points that deviated by more than 0.3 mm from the position on the source map were discarded, and amendments made were subjected to a second quality control.

Similar procedures were followed during the preparation of ADD Version 2.0, although some new data were derived from scanned material which was registered and then used as a backdrop for manual, on-screen digitizing. No automatic line-following software has been used during the preparation of the ADD.

The DEM incorporated into ADD Version 3.0 was generated with a cell size of 200 m. It has an effective horizontal resolution of 200 m over mountainous areas, 400 m in coastal regions, and approximately 5 km in the interior. The vertical accuracy of the DEM is estimated to be about 100–130 m over the rugged mountainous area, better than 2 m for the ice shelves, better than 15 m for the interior ice sheet, and about 35 m for the steeper ice sheet perimeter (Liu *et al.*, 1999).

Editing criteria

Data captured from small-scale map sources became redundant during the harmonization process if, for a given area, more detailed information from larger-scale maps was available to the project. Similarly, new sources of information have been given priority over older material: for example, remotely sensed data used for the interpretation and location of coastal features, and for the generation of improved contours over the ice sheet north of 80°S.

References

Liu, J., Jezek, K.C. and Li, B. 1999. Development of an Antarctic Digital Elevation Model by integrating cartographic and remotely sensed data: a GIS-based approach. *Journal of Geophysical Research*, **104** (B10), 23,199–23,213