

Mini-series: AAI's challenge for database management (1)

Part 1: Databases at AAI

The use of computers (PC) has become widespread with surprising speed in recent years. Thanks to the advancement of computer technology today we can purchase PCs, which have more capabilities than earlier gigantic computers used to contain, and at reasonable prices. There is a whole range of application software for PCs and these can be used in a variety of ways, but one of the ways of making the full use of computer functions is database management.

The advent and popularization of the Internet have had a great impact on the world of database management. Although such tendencies had been observed even without the use of Internet, since Internet technology came into existence we have entered the era of 'information flooding', and now we have to think of how to access necessary information, and how to get rid of unwanted information, in the quickest and most efficient way. It goes without saying that the amount of data and information alone does not count for much. What is important is to be able to access the most needed, appropriate and valuable information.

In this sense, 'specialized databases', for example, containing data belonging to particular organizations or related to particular fields are very useful. A company's internal databases may include, for instance, an address database for recording and managing all the addresses (an electronic address book) necessary for the company, a personnel / technician database for their employees' employment histories and performance records, special skills and qualifications, or a database for employees' schedule management. A dry land database (containing data of dry land plants, references, etc.) may be an example of a database used for a specialized field. These specialized databases are naturally meant for certain users, and a high quality standard is expected of such databases.

Databases can be used in various fields for various purposes, but in this mini-series on databases we would like to deal mainly with those fields that are related to AAI, such as agriculture, forestry, regional development and environmental resources management. For a long time AAI has been handling data of various kinds and forms, and we manage databases of agriculture and forestry statistics, climatic data, soil and water quality analyses, plant resources, satellite images (remote sensing), GIS (Geographical Information System) etc. These databases can be roughly divided into three types: 1) statistical databases for climatic data and soil and water quality data; 2) card-form databases which deal with texts, figures and images (photos), such as a plant resources database; and 3) GIS-related databases including remote sensing and grid maps.

Type	Example of data	Example of software
Statistical database (table form)	Agricultural production statistics Climatic data Soil and water quality data	Excel, Lotus 1-2-3 Excel, Lotus 1-2-3 Excel, Lotus 1-2-3
Card-form database	Addresses Reference list Plant resources data Image data list	FileMaker, Access FileMaker, Access FileMaker, Access Fetch
Geographic Information System (GIS)	Grid maps Remote sensing Link between maps and statistical data	MF works IDRISI, Win ASEAN ArcView

What is important here is the 'handiness' of the databases. One of the necessary conditions of a good database is that it can be used easily and comfortably by anybody, without having to consult specialized operators or hard-to-understand manuals.