## **Digital Mapping (DM) format & Extended DM format**

DM format was determined in 1988 by the Geographical Survey Institute (GSI), Ministry of Construction (present Ministry of Land, Infrastructure and Transport) as for standard exchange format for digital topographic data. Since the format was adopted as a standard format in common specification of public survey work by the Ministry, it has broadly been used in Japan. Extended DM format was determined in 2004 by GSI as an extension of DM format so that it can cover applied survey results of alignment, river survey and lot survey. Some of the characteristics of Extended DM format are as follows.

1. Class information can easily be exchanged.

When map data is used, necessary map classes and their definition are usually different depending on users. Therefore, it is necessary to understand content of the map data which other organizations provided and to prepare conversion table of the classes. Since extended DM format holds user specified classification code as well as the conversion table to standard classification code, a user can understand content of the map data with refer to the standard code.

2. Format is open and has no major change since 1988

Revision of file format often causes difficulty in file exchange. DM format has no major change since its initial release in 1988. Therefore, any software applicable for DM can treat any DM data regardless when it was produced. The only change is for character code set from JIS to Shift-JIS. Moreover, one can read DM data file easily because it is expressed in text form.

3. Each geographic element holds independent attributes of accuracy, dates, etc.

Each geographic element as terrain or geographic object is recorded in 'element record' which holds not only classification code but also accuracy, produced/revised/deleted dates, etc. as attributes. Therefore, one can manage both old and new data even in one file. Map sheet record, which act as a file header record, holds information of general accuracy level

of the map data, equipments used, aerial photographs used, etc.

 Each geographic element holds unique ID number.
DM data are well compatible for GIS and database because each geographic element holds unique ID number so that one can identify each individual element. 5. Topological consistency is fulfilled by point adjustment rule.

Connective point coordinates of line elements shall be the same and a hidden line shall not be cut so that area creation can be done automatically. This also makes the data suitable for GIS applications.

6. Three dimensional terrain information can be recorded.

DM data contains terrain (ups and downs of ground surface) as well as geographic objects (artificial structure and natural objects). Terrain information can be expressed as three dimensional views because it is represented by contour lines or height points which can hold altitude as attribute.

\* refer to URL : http://psgsv.gsi.go.jp/koukyou/download/dmkaitei/index.htm