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Digital Chart of the World (DCW)

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What is Digital Chart of the World?

The Digital Chart of the World is a comprehensive 1:1,000,000 scale vector basemap of the world. It consists of cartographic, attribute and textual data. The Environmental Systems Research Institute, Inc. (ESRI) originally produced this DCW for the U.S. Defense Mapping Agency (DMA). The purpose was to meet the needs of pilots/crew in medium-and low-altitude en route navigation and to support military operational planning and intelligence briefings.

Data Organization

The worldwide coverage of the DCW is organized into four regional groups. Data are stored in four different discs. The regional grouping and data storage is as follows (i) North America (Disc 1), (ii) Europe and Northern Asia (Disc 2), (iii) South America, Africa and Antarctica (Disc 3), and (iv) Southern Asia and Australia (Disc 4). Various thematic layers in the data base are: (i) Political/Ocean (country boundaries), (ii) Populated Places (urbanized areas and points), (iii) Roads; (iv) Railroads, (v) Aeronautical Structures, (vi) Utilities (electrical, telephone, pipelines), (vii) Drainage System, (viii) Hypsographic Data, (ix) Land Cover Ocean Features, (x) Physiography, (xi) Cultural Landmarks, (xii) Transportation Structure, and (xiii) Vegetation. Brief descriptions of each layer such as name of coverage, type of feature and items, codes and values are provided in http://www.maproom.psu.edu/dcw/dcw_about.shtml.

Sources and Availability of Data:

Originally, the data for DCW were developed by the Defense Mapping Agency. These data are now available through the National Imagery and Mapping Agency. The primary source for this database is the US Defense Mapping Agency's (DMA) Operational Navigation Chart (ONC) series (scale 1:1,000,000) and the Jet Navigation Charts (JNCs) (scale 1:2,000,000). The database is divided into 2,094 tiles that represent 5-degree by 5-degree areas of the globe. Data availability varies from place to place and time ranges from the mid 1960s to the early 1990s. The data is available in Arc/INFO format, which is also readable by ArcView. The Arc/INFO version of DCW (which only exists in edition #02) is not public domain. The latest edition (#03) was produced in 1998. However, data is available only in Vector Product Format, and can be viewed with VPVIEWER or ArcGIS. ESRI has the copyright for the data.

Downloading Data from Penn State's Website

DCW can be found at http://www.maproom.psu.edu/dcw/. This web site allows us to download the boundaries and layers for different countries. Although data are available by countries, one should navigate to find the country of interest through regions. Countries are grouped into seven different regions: Africa, Antarctica, Asia, Australia, Europe, North America, and Central/South America and the Caribbean. The procedure to download the data is as follows: (1) Go to http://www.maproom.psu.edu/dcw/ (2). Find the region (where your country of interest is)

provided on the left side of the map (you can also highlight the region on the map itself), for example, “ASIA” and CLICK. (3) Find your country of interest, for example NEPAL and press CONTINUE. (4) This screen asks you to choose what you want to do next, i.e. (i) Download data, (ii) Produce image, or (iii) Download point.

Downloading data: This allows you to download GIS data in Arc/INFO and ARCVIEW formats. If you press “Download data” button, it directs you to the screen where various themes are provided. Select layer(s) or theme(s) of interest and press CONTINUE. The following screen displays your selected layer(s) or theme(s), the data compression type (i.e., UNIX or PC/NT), and optional ArcView Projects (e.g., None, UNIX-ArcView 2, UNIX ArcView 3, Windows 3.x/NT or PC/NT ArcView2). Select desired choices and click on COMPUTE DATA. The next screen lists the exported coverage of the country, file name and file size. Finally, select “download coverages” to download the data.

Produce image: Allows you to view layers as GIF files. You can copy these images. If you click “ Produce Images” button, it directs you to the screen where various themes are provided. Select layer(s) or theme(s) of interest and CONTINUE. The screen confirms your choice of layer(s) or theme(s). Confirm your selection and click on CONTINUE. The next screen shows you (a) map of the country and selected layers, (b) layers mapped for the country, and (c) layers selected for the country. If this is what you wanted, then press CONTINUE. To download the images select “Download coverages”

Download point: Allows you to download a file containing a list of latitude/longitude points for the country. If you click “Download Point” button, it directs you to the screen that shows “DCW Polygon Point Generation”. You can see “Opening filename”(e.g., Opening nepal2pts.txt). Then click “Download” to download the data. You will see the data in text format with name of the country at the top and END at the bottom. If correct follow the steps to download the data. Now you can save the data.

References:

Danko, David M., 1992. The Digital Chart of the World Project, *Photogrammetric Engineering and Remote Sensing*. Volume 58, No. 8, August 1002, Pp. 1125-1128.

Danko, David M., 1992. Global Data – The Digital Chart of the World: *Geo Info Systems*, January 1992, Pp. 29-36.

Defense Mapping Agency, 1992. *Development of the Digital Chart of the World*: Washington, D. C., U. S. Government Printing Office.

Defense Mapping Agency, 1989. *Digital Chart of the World Database (MIL-D 89009)*, Washington, D. C., U.S. Government Printing Office.

Defense Mapping Agency, 1990. *Vector product Format, MIL-STD-600006*, Washington, D. C., U. S. Government Printing Office.

Defense Mapping Agency, 1992. *VPFVIEW 1.0 Users Manual for the Digital Chart of the World*, Washington, D. C., U. S. Government Printing Office.

Other online resources related to DCW are available at http://www.nlh.no/ikf/gis/dcw/

Other Websites related to DCW:

http://www.nlh.no/ikf/gis/dcw/dcw.html
http://www.lib.ncsu.edu/stacks/gis/dcw.html
http://www.gisdatadepot.com/
http://www.princeton.edu/~geolib/gis/dcw.html