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A Development of ArcGeology, GIS-based Geological D/B and Analysis of Geological Structure, Eoil Area Korea

An arrangement and organization of geological data which are observed and collected in fieldwork play an important role in various geological research. Recently, the Geographic Information System(GIS), spatial data storage tool, is applied to geological analysis and geophysical exploration. But, there is a few study for application of geological data to GIS. This research is to definite exact geological dataset in GIS data structure and is to develope a program the ArcGeology, which stores, edits and manages them. Various geological terms, for example fault, formation and rock type etc. were classified attributes (point, line and polygon) in GIS and defined an importance and factor for geological analysis.

On this framework, ArcGeology was programmed in Windows NT using Arc Macro Language (AML). ArcGeology is composed of 1) geological boundary, 2) structure, 3) outcrop, 4) topology layer and others. It is possible to edit, search and visualization the geological map. Also, the comparative research between seismic or remote sensing data and digital geological data constructed by ArcGeology is available and compared with the ALACARTE of USGS. Also, it is possible to exchange data from a remote field via Internet, that improves the Internet Geological Data System(IGDS; Yun,1997).

In result of the geological structural research of Eoil area, Korea using ArcGeology, it obtains many effects of simple user-interface and exact analysis compared with existing tools, we can find and visualize the dome-structure in this area.

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