THE GEOGRAPHIC NAMES PROCESSING SYSTEM
AT THE DEFENSE MAPPING AGENCY

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The Defense Mapping Agency (DMA) supports the United States Board on Geographic Names (U.S. BGN) through standardization and application of foreign geographic place names to DMA Mapping, Charting and Geodesy (MC&G) products. To automate and modernize this support, DMA has developed the Geographic Names Processing System (GNPS). The GNPS utilizes a database management system to file, sort, and correlate feature names data. The system uses a client/server architecture made up of commercial-off-the-shelf hardware and software. GNPS is capable of supporting map/chart production, gazetteer production, database maintenance, the U.S. BGN and external inquiries for geographic names data. GNPS is fully operational at two DMA production centers. Future enhancements to the system include placement of the Geographic Names Database onto MILNET and developing an GNPS interface to DMA's Digital Production System.
The Defense Mapping Agency (DMA) supports the United States Board on Geographic Names (U.S. BGN) through the standardization of foreign geographic place names and their application to DMA Mapping, Charting and Geodesy (MC&G) products. The Geographic Names Processing System (GNPS) was developed and delivered to the DMA in November 1993 in order to improve this process. The GNPS enables DMA/U.S. BGN to automate the Foreign Place Names File (FPNF) through the Geographic Names Database (GNDB). The GNPS is fully operational at the DMA Hydrographic/Topographic Center (DMAHTC) in Bethesda, Maryland and the DMA Aerospace Center (DMAAC) in St. Louis, Missouri.

GNPS operational capabilities include: map/chart production, gazetteer production, GNDB maintenance, U.S. BGN support and external inquiry support. The GNPS operates in the following manner: DMA personnel capture geographic names data from scanning selected hardcopy MC&G source material and comparing this material, in softcopy format with names data already stored in the GNDB. A database management system is utilized to file, sort, and correlate feature names data. The system uses automated tools to acquire geographic coordinates from hardcopy and softcopy sources. Softcopy and physical keyboard templates are provided to aid the geographer for inputting names containing diacritics and special characters into the GNDB. Sixty-four different language keyboards are available on the system. The system does not currently allow for the input, storage, retrieval, and output capability of non-Roman scripts, but future modifications to the GNPS will allow for this. The GNPS produces geographic names/production overlays for map/chart production, digital names information, and printed names information.

GNPS uses a client/server network architecture made up of commercial-off-the-shelf (COTS) hardware and software so that the system is flexible and easily expandable. Two SUN SPARCserver 690 System Servers at DMAHTC are configured with a Local Area Network (LAN) which connects thirty SUN SPARCSstations,
a Lasermaster high speed laser printer and two Tangent graphic
drum scanners. The two servers manage the primary and back-up
GNDB, provide a gateway for system access to peripherals and
supply the processing, memory and mass storage for the system.
The workstations enable the operators to interface with the GNDB,
display and exploit large softcopy source images, and enter
geographic names text and geographic coordinate information. The
GNPS also consists of the following peripherals: one Howtek
graphic table-top scanner, one Xerox text table-top scanner, two
Altek digitizers, two Versatec plotters, and two DEC general
purpose printers. The table-top scanners are used to scan atlases
and foreign produced gazetteer sources. The digitizers are used
to digitize boundaries and select coordinate information off of
hardcopy sources.

The GNDB is located at DMAHTC and is accessed by DMAAC names
analysts via a communication link interface. The GNPS at DMAAC
consists of one SUN SPARCserver 690, 5 SUN SPARCstations, one
Tangent graphic drum scanner, one Howtek graphic table-top
scanner, two Versatec plotters, and one QMS high speed laser
printer. All are configured within two LANS.

The GNDB was populated with existing Names Information Tapes
(NITs). The database initialization process included quality
review for all NITs prior to their placement into the GNDB.
Approximately 3.2 million features with 4.5 million names are
contained in the GNDB.

The GNPS provides DMA with an automated method to significantly
increase the size of the FPNF while providing timely support to
MC&G production and U.S. BGN names activities. The system also
provides flexibility to support future requirements.

Future enhancements to the GNPS include the development of a
digital interface for external customers/users of the foreign
place names information provided in the GNDB. This interface will
be accomplished by placing the GNDB onto the MILNET, which will
allow U.S. Department of Defense users to directly query the GNDB.
Full operational capability for MILNET access is scheduled for
September 1994.

Also, DMA has begun an effort to develop an interface between the
GNPS and DMA's Digital Production System (DPS). This activity
will produce an operational concept to demonstrate how digital
names data can directly flow into the automated mapping process.