



# Adding Hierarchical Objects to Relational Database General-Purpose XML-Based Information Managements

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NETMARK is a flexible, high-throughput software system for managing, storing, and rapid searching of unstructured and semi-structured documents. NETMARK transforms such documents from their original highly complex, constantly changing, heterogeneous data formats into well-structured, common data formats in using Hypertext Markup Language (HTML) and/or Extensible Markup Language (XML). The software implements an object-relational database system that combines the best practices of the relational model utilizing Structured Query Language (SQL) with those of the object-oriented, semantic database model

for creating complex data. In particular, NETMARK takes advantage of the Oracle 8i object-relational database model using physical-address data types for very efficient keyword searches of records across both context and content. NETMARK also supports multiple international standards such as WEBDAV for drag-and-drop file management and SOAP for integrated information management using Web services. The document-organization and -searching capabilities afforded by NETMARK are likely to make this software attractive for use in disciplines as diverse as science, auditing, and law enforcement.

*This program was written by Shu-Chun Lin and Chris Knight of **Ames Research Center**; Tracy La of Computer Science Corporation; David Maluf and David Bell of Universities Space Research; Khai Peter Tran of QSS Group, Inc.; and Yuri Gawdiak of NASA Headquarters. For further information, access the Technical Support Package (TSP) **free online at [www.techbriefs.com/tsp](http://www.techbriefs.com/tsp)** under the Software category.*

*This invention has been patented by NASA (U.S. Patent No. 6,968,338). Inquiries concerning rights for the commercial use of this invention should be addressed to the Ames Technology Partnerships Division at (650) 604-2954. Refer to ARC-14662-1.*