# NASA Technology Transfer System

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*Abstract*— **This paper discusses the modern approach of the implementation of Software as a Service (SaaS) for NASA as a way to reduce cost and increase efficiency. The Grid XML Datastore Framework is an extension of SaaS framework based on eXtensible Database technology (XDB). This is implemented to support the Innovative Partnership Program (IPP) for its Technology Transfer System (NTTS) project.**

**NTTS supports NASA's entire technology transfer process and is the agency's one system with all of its technological assets. NTTS is the primary IT backbone that supports the entire technology transfer process for NASA; which includes Invention Disclosure, Intellectual Property Management, Awards Management and Payment, Software Release Management, Agreements & Partnerships Management, Success Stories Management and Leads Development. The system is intended to have three interfaces serving three distinct communities; mainly agency-wide, center specific and the public.**

**The SaaS implementation deploys the software as an application hosted as a NASA service, which is provided across the Internet. By eliminating the need to install and run the application on the customer's own computer, SaaS alleviates the customer's burden of software maintenance, ongoing operation, and support. Using SaaS can also reduce the up-front expense of software purchases, through less costly, on-demand pricing. From a NASA software acquisition perspective, NASA pays one time for the database and storage and thus third-party application plug in on demand.** [1,2]

**This paper describes how NTTS utilizes and benefits Grid XML Datastore Framework (GXD Framework), an open and extensible database architecture that supports efficient and flexible integration of heterogeneous and distributed information resources. GXD Framework provides a novel "schema-less" database approach using a document- centered object-relational XML database mapping. This enables structured, unstructured, and semi-structured information to be integrated without requiring document schemas or translation tables. GXD Framework utilizes existing international protocol standards of the World Wide Web Consortium Architecture Domain and the Internet Engineering Task Force, primarily HTTP, XML and WebDAV. Through a combination of these international protocols, universal database record identifiers, and physical address data types, GXD enables an unlimited number of desktops and distributed information sources to be linked seamlessly and efficiently into an information grid. GXD Framework has been used to create a powerful set of novel information management systems for a variety of scientific and engineering applications.**