

# MODERN ARCHITECTURE FOR GEOINT DATA MANAGEMENT

# Cloud-based data store architecture for effective geospatial intelligence (GEOINT) data management

Multiple disconnected systems are one of the greatest challenges in managing GEOINT data. L3Harris provides bridges – innovative virtual database architectures in multiple modes both in the cloud and on premises.

L3Harris is removing silos and speeding up data flows with virtual system architectures that connect cloud and on-premises data environments. Modern systems expose data to users though open-standardsbased service interfaces.

L3Harris solved many disparate datastorage challenges by integrating technology, infrastructure and automation. Our solutions deliver secure, accurate content along with search and retrieval capabilities to provide faster access consistently.

Keys to successful migration to modern, enterprise-grade architectures:

- > Deep mission understanding
- > Expert GEOINT data content knowledge and experience
- > In-depth planning
- > Programmatic implementation

# SCALING MULTI-INT DATA

Cloud-native, service-oriented-architecture enterprise systems are built with integrated microservices that allow systems to grow and adapt. They realize the inherent advantages of cloud autoscaling and auto-redundancy. They also enable adoption of new data types to allow agencies to continue using the system well into the future.



## MIGRATING COMPLEX DATASETS

L3Harris has insight into the pragmatic elements of migrating large, complex data systems into ultra-large enterprise systems using modern cloud-based services to ingest, condition, process, manage, secure and disseminate data.

# APPLYING SERVICES TO GEOINT

L3Harris has in-depth understanding of the full spectrum of GEOINT used across the Defense Department and Intelligence Community. This results in a true understanding of the quantity, formats, standards, interfaces, services and microservices needed to manage the data.

L3Harris has successfully implemented cloud environments across multiple security domains for the National System of Geospatial-Intelligence (NSG) and Allied Systems of Geospatial-Intelligence (ASG).



# BENEFITS

- > Minimizes risk with modern enterprise transformation
- Maximizes reuse of existing capabilities
- Creates platform for sharing enhanced and enriched data
- Employs modern software architecture in the cloud for scalable, self-healing platform
- Provides flexible, extensible microservices for easy-to-use documentation and tooling
- Creates architectural runway that enables automation, argumentation and artificial intelligence



For 20-plus years L3Harris has successfully developed and deployed geospatial intelligence search, retrieval and data management capabilities and performed system modernization upgrades for defense and intelligence agencies.

#### DATA MANAGEMENT ARCHITECTURE

L3Harris architectures allow agencies to create, integrate, disseminate and manage data for all enterprise applications, from front-end data collection and ingest to downstream exploitation.

Modern cloud database architectures offer significant advantages over traditional on-premises counterparts. This includes increased accessibility, automatic failover and recovery, automated on-the-go scaling, minimal investment and maintenance of in-house hardware, and improved performance.

L3Harris has extensive experience with database technologies including SQL, SQL-Geospatial, PostgreSQL, MongoDB, Oracle, cloud platforms (Amazon Web Service, Microsoft Azure), and search functions (Elasticsearch, Apache Solr). Within the IC, L3Harris developed largescale enterprise database solutions, including:

- Discovery and Retrieval Interface Data Model and Metadata Application Profile under NGA's GEOINT Search and Retrieval (GSR) program
- > Federal Aviation Administration's Traffic and Status data model
- > Abu Dhabi Police GIS enterprise
- > U.S. Census Geography data mode

#### DATA GOVERNANCE AND SECURITY

L3Harris' data conditioning and governance incorporates an enterprise data model, the Metadata Application Profile. This profile maps data from the various systems and content stores to a standard that ensures accurate incorporation into enterprise systems. It strengthens provenance, pedigree and chain of custody for all data through the utilization of a cloudbased distributed ledger.

We have deployed capabilities to operate and manage data across all security domains - unclassified, secret and top secret. Our systems incorporate protocols to manage data access according to a user's role, authorization and need to know.

#### **BUILDING FOR SUCCESS**

L3Harris specializes in successful systems integration, taking into account the complexities of each individual system when designing future systems.

By using industry-leading modeling and simulation approaches, L3Harris architectures meet current and future customer needs.

## FUTURE OF GEOINT MANAGEMENT

L3Harris successfully designs and deploys cost-effective data management solutions with low risk to the customer. They are built upon in-depth understanding of defense and intelligence operational missions and diverse user communities stemming from decades of experience providing geospatial content and services.

Decades of relevant experience and knowledge of modern data management techniques result in satisfying user requirements, seamlessly replacing dated systems or data centers, and ensuring GEOINT mission success.



#### Modern Architecture for GEOINT Data Management

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1025 W. NASA Boulevard Melbourne, FL 32919