TURNING DATA INTO A STRATEGIC ASSET FOR THE WARFIGHTER

A3 Mission Federal White Paper

Too Much Data, Too Little Value

Federal agencies increasingly need data-derived insights to address complex challenges, deliver mission success, and optimize resources for maximum effectiveness and efficiency. Whether the challenge is to contain a fast-spreading disease, model and monitor network activity, rapidly assess a battlefield, uncover fraud, or efficiently maintain a fleet of ships, the rapid exploitation of data is essential to getting the job done and providing situational understanding.

Many agencies collect and possess vast amounts of data, yet they remain challenged to derive value from that data. In some cases, they are simply overwhelmed by the volumes of data they collect. Their data typically comes from many sources and exists in many formats, such as video, imagery, sensor data, databases, text, and other types. Legacy systems are often incapable of aggregating and extracting value from multi-varied data.

Moreover, data is typically organized and managed within organizational stovepipes, reducing interoperability across data sources, organizations, and domains. In some cases, those stovepipes serve the important purpose of keeping specific data sets walled off so as not to infringe upon constitutional protections against warrantless searches or privacy infringements — and agencies must be able to prove that those protected data sets are not accessed or used incorrectly.

There also are visualization and analysis challenges: an inability to evaluate multi-varied data streams to discern actionable insights and meaningful relationships between data.

Finally, there are back-end challenges — namely, the inability to secure, ingest, normalize, govern, and share data across proprietary systems and sources — that also impede agencies' ability to fully exploit their data resources.

Unlocking the Value of Enterprise Data with the Content Intelligence and Archive Repository

Because agencies struggle to normalize, analyze, and visualize the various data they collect, they are unable to translate data stores into strategic assets that help them address mission-related challenges, operate more efficiently, and inject greater transparency and objectivity into informed decision-making.

These impediments are surmountable today. It is possible for federal enterprises to extract — in a highly scalable and integrated way — maximum value from their data for any purpose, regardless of the source, format, volume, or velocity of that data.

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Hitachi Intelligent Data Analytics Platform (HIDAP) is a proven capability that enables federal civilian, Defense Department, and Intelligence agencies to be holistic, flexible, and responsive as they tackle mission tasks and challenges:

Holistic	Data — regardless of variety, volume, velocity and source — are freed of unnecessary stovepipes and collectively harnessed for a comprehensive view of the mission task at hand.
Flexible	Data is fully exploited for any application.
Responsive	Highly compressed timeframes for data ingest, normalization, and ETL translate into accelerated decision-making, situational awareness, and understanding.

HIDAP components currently hold an Army Certificate of Networthiness (CoN) and a full Authority to Operate (ATO) on the Defense Department's Secret Internet Protocol Router Network (SIPRNet) and Joint Worldwide Intelligence Communications System (JWICS) networks. With a Data Intelligence and Archive Repository, agencies can convert their vast data stores into powerful strategic assets that have unlimited applicability. For example:

- All structured, unstructured, and semi-structured data accessible across the enterprise — regardless of format, volume, velocity or source — can be harnessed in service of specific searches.

- Any data can be integrated into a wide array of workflows and networks.

- Collaboration across the enterprise is enriched because data is freed of unnecessary stovepipes.

- Old data can deliver new value by being blending with new data sets for added contextualization and meaning.

- Data correlations and connections are accelerated because multi-varied data are displayed in textual and graphical forms on a single screen.

- Data access is managed through configurable, tiered controls that accommodate all users, regardless of security clearance or data access privileges.

- Operation is simple and requires no technical knowledge of SQL programming, analytical models, ETL (extract, transform and load) processes, or data processing engines.

- The access and activity of specific data sets is governed, tracked, and auditable.

HIDAP offers the capability to:

- Query structured, unstructured, semi-structured data

- Dynamically ingest data in real time, without disruption of data

- Scale storage

- Harvest fixed site data

- Deduplicate data during data harvest

- Receive and store data feeds

- Provide continuity of operations (COOP)

- Apply classification markings to data

- Add new data sources and adapt storage

- Validate user access to data

- Retrieve data at a specified or lesser classification, releasability, and control level of data sought

- Define search criteria and retrieve data with 99.99% success

- Display retrieved data in textual and graphic formats

- Provide data pedigree

- Track data an authorized user has accessed

- Monitor system health

- Add data analytics

- Support multi-person, multi-workstation, multi-echelon collaboration for voice, text, video and white boarding

- Customize data management processes with configurable settings and plug-in capabilities

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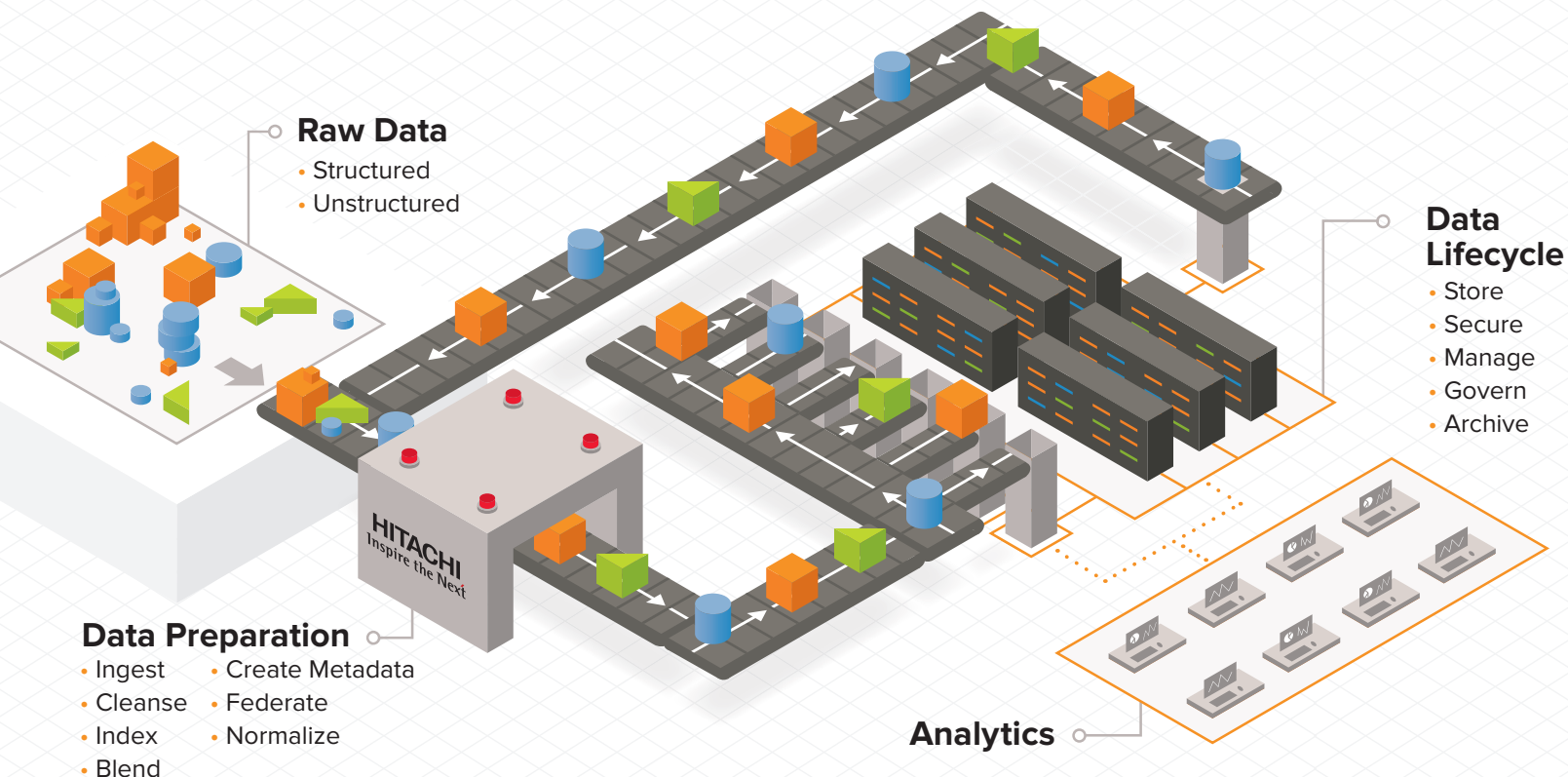
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Hitachi Intelligent Data Analytics Platform (HIDAP)

Hitachi Intelligent Data Analytics Platform (HIDAP) leverages all of the federal enterprise's data sources to discover, ingest, blend, cleanse and prepare diverse data. Making use of metadata enhances the agency's ability to more efficiently navigate any data pipeline. HIDAP's metadata injection technology greatly simplifies data ingestion and transformation, while visual tools eliminate coding and complexity. Data integration tools include robust support for Hadoop distributions, Spark, NoSQL data stores and analytic databases.

With a spectrum of tools to easily analyze, visualize, explore, report and predict, HIDAP users can analyze and visualize data across multiple dimensions, all while minimizing dependence on IT. The platform's analytics and visualization capabilities are purpose-built for embedding into and integrating with existing applications, portals, and processes. HIDAP's end-to-end approach to data analytics allows organizations to take advantage of platform features and capabilities at any step in the data pipeline.

Hitachi Intelligent Data Analytics Platform

Comprehensive analytics solution delivering wide-ranging data integration, enrichment and normalization to support mission data requirements. Providing refined data for analytic purposes that can be further enhanced to support ever changing needs, ultimately meeting data and mission challenges.

Raw Data
• Structured
• Unstructured

Data Lifecycle
• Store
• Secure
• Manage
• Govern
• Archive

Data Preparation
• Ingest   • Create Metadata
• Cleanse   • Federate
• Index   • Normalize
• Blend

Analytics

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Hitachi Intelligent Data Analytics Platform is Comprised of Three Primary Components:

1. **The Pentaho Platform**, an enterprise-class, open source-based, data integration and business analytics platform for diverse big data deployments. Pentaho simplifies the preparation and blending of data and includes a spectrum of tools to easily analyze, visualize, explore, report and predict.

   Open, embeddable and extensible, Pentaho is architected to ensure that anyone in the enterprise — from developers to business users — can easily translate data into value. Pentaho is ideal for any data integration, big data analytics, business analytics, and Internet of Things (IoT) application

2. **Hitachi Content Intelligence (HCI)**, an intelligent data discovery and transformation platform. HCI automates the extraction, classification, enrichment and categorization of data residing on both Hitachi Vantara Federal and third-party repositories, whether located on-premises or in clouds, and across heterogeneous data repositories, both internal and external. In doing so, HCI provides immediate visibility to all data by unifying data access across disparate locations and data types, drastically reducing time spent searching for what is needed or recreating what already exists. Granular access controls and security system integrations enable managed access to sensitive data, so the right data is available to the right person at the right time.

3. **Hitachi Content Platform (HCP)**, a scalable, enterprise-class, backup-free data intelligence storage system that enables IT organizations and cloud service providers to store, share, sync, protect, preserve, analyze and retrieve file data from a single system. It is more efficient, easier to use, and capable of handling much more data than traditional file storage solutions.

   HCP automates day-to-day IT operations like data protection and readily evolves to changes in scale, scope, applications, storage, server, and cloud technologies over the life of the data. HCP is ideal for environments where data grows quickly or must live for years or even indefinitely.

Conclusion

Today's government missions and challenges are more complex and larger in scale than ever before, and they require informed, data-driven solutions, approaches, and insights. Federal agencies must be able to tap into the power of data to solve mission challenges, realize new degrees of operational efficiency, and remain relevant in an information-rich world. The HIDAP is a highly secure, scalable, easy-to-operate COTS platform that reduces risk by integrating easily into existing federal and military environments and helps federal enterprises extract maximum value from existing and future data inventories for better decisions and outcomes.

About A3 Missions

A3 Missions delivers enterprise-class IT infrastructure, systems engineering, design and security solutions optimized for government missions and environments. Our success and execution are built upon Communication, Coordination and Mission focus. With more than 65 years of combined military, federal civilian, and contractor experience, our team aims to deliver affordable solutions that satisfy mission needs while maintaining the highest level of customer support and service. We are a Veteran-Owned Small Business (VOSB) with headquarters in Ft. Gordon, Georgia.

A3 Missions maintains partnership agreements with leading OEMs to provide the latest technologies that enhance enterprise performance while reducing costs. Our team of certified solutions architects are available to analyze, design and implement a solution based on our customers specific needs.

To find out more about HIDAP, call 706-364-2200.

About Hitachi Vantara Federal

Hitachi Vantara Federal provides technology solutions that enable government agencies to extend the useable life of their IT infrastructure. By engineering technologies from the ground up, Hitachi Vantara Federal offers agencies greater reliability and scalability, while reducing total cost of ownership in budget conscious environments.

Hitachi Vantara Federal is U.S. based, located on U.S. soil, and staffed by U.S. citizens. We support the mission of the U.S. federal government allowing agencies to innovate faster and manage risk with data-driven insights that matter.