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WRS Capabilities Booklet

This booklet will be distributed to LANL employees and both internal and external stakeholders.

LOS ALAMOS
NATIONAL LABORATORY

Weapons Research Services

ADVANCING DATA ACROSS THE NUCLEAR SECURITY ENTERPRISE

Jason Kritter,
Division Leader
Weapons Research Services

“Simply put, there is no AI without IA. Information Architecture provides the essential framework that makes AI possible.”

The Weapons Research Services (WRS) Division is the information backbone of Los Alamos National Laboratory’s Weapons programs, transforming **data into a trusted, enterprise-wide asset.** Our mission goes beyond supporting weapons applications and infrastructure. We safeguard and steward the data that empowers the entire nuclear security enterprise to achieve its goals.

WRS manages the nation’s largest repository of classified weapons data. We ensure this data remains secure, accessible, and usable by developing standards and governance for its classification, protection, and distribution. Through strong partnerships with laboratories, plants, and sites across the National Nuclear Security Administration (NNSA), we uphold the integrity and availability of this critical national resource.

Our mission is built on four foundational pillars: **Integrated Cyber Assurance, Data Stewardship, Knowledge Access & Transfer, and Software Solutions.** These Capability Pillars guide how we organize, innovate, and deliver value to the Weapons programs.

Looking ahead, WRS is leading a **digital transformation** that redefines how data, information, and knowledge are managed and shared across applications, people, and organizations. By harnessing emerging technologies such as Artificial Intelligence (AI) and Machine Learning (ML), we are unlocking new capabilities and giving the enterprise the agility to meet evolving security challenges.

At LANL, digital transformation is about more than modernizing systems or adopting new tools; it’s about empowering people to work differently, collaborating across boundaries, and accelerating discovery with integrity and purpose. Our goal is to create a culture where **trusted data** is not just a technical objective, but a shared value, an expression of who we are and how we serve the nation.

WRS is helping forge this future, expanding the possibilities of what the Nuclear Security Enterprise (NSE) can achieve. Our priority is clear: **prepare classified weapons data for AI enablement** by focusing on three core areas: **data archiving, data linking, and data management.** Together, these ensure that datasets are secure, accessible, and structured for effective AI use. Simply put, **there is no AI without IA**. Information architecture provides the essential framework that makes AI possible.

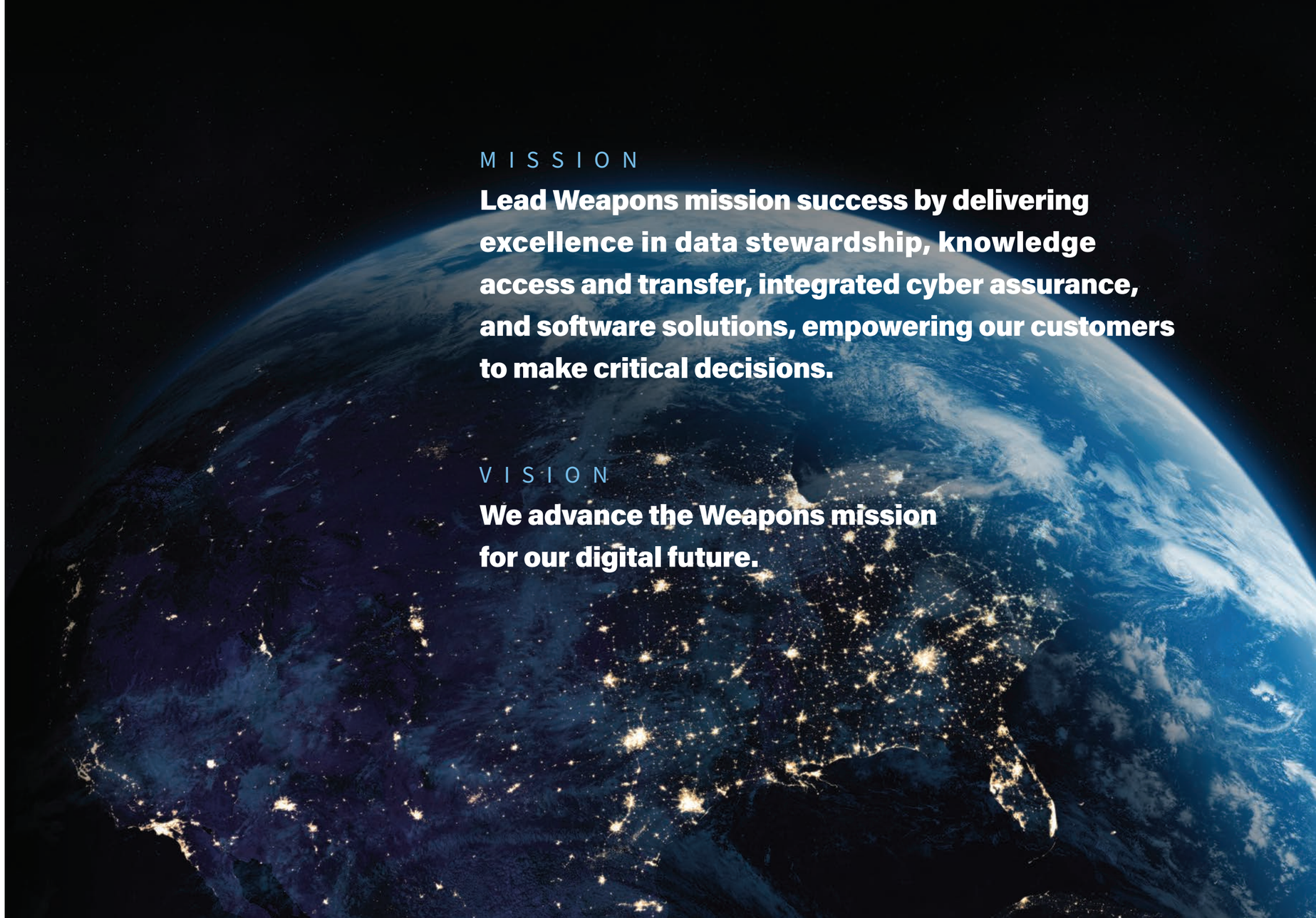
The Laboratory’s mission has always demanded precision, creativity, and courage. Those same qualities will guide us as we embrace this digital era. By uniting the principles of digital transformation with an unwavering commitment to data stewardship, we can build an enterprise that is smarter, more connected, and more resilient—one that honors our legacy while shaping the future of scientific excellence and national security.

This is more than change, it is the future of the NSE. At WRS, our purpose is to help shape that future, expand its capabilities, and ensure its enduring success.

Jason Kritter

Contents

WRS is the digital backbone of the Weapons Program—delivering trusted data assets, cyber-assured software and systems, and AI-enabling software—that transform insights into decisive action. We empower physicists, engineers, researchers, and scientists to think faster, act strategically, and stay ahead in an ever-evolving threat landscape.
Our efforts ensure critical nuclear weapons data remains secure, accessible, and usable—supporting mission-critical work, informed decision-making, and scientific advancement at LANL and across the Nuclear Security Enterprise (NSE).



MISSION

Lead Weapons mission success by delivering excellence in data stewardship, knowledge access and transfer, integrated cyber assurance, and software solutions, empowering our customers to make critical decisions.

VISION

We advance the Weapons mission for our digital future.

Our mission is anchored in four core Capability Pillars:

Managing the governance, growth, curation, and accessibility of Weapons Program data.

Data Stewardship

Improving the discoverability and utilization of knowledge resources for competency development.

Knowledge Access & Transfer

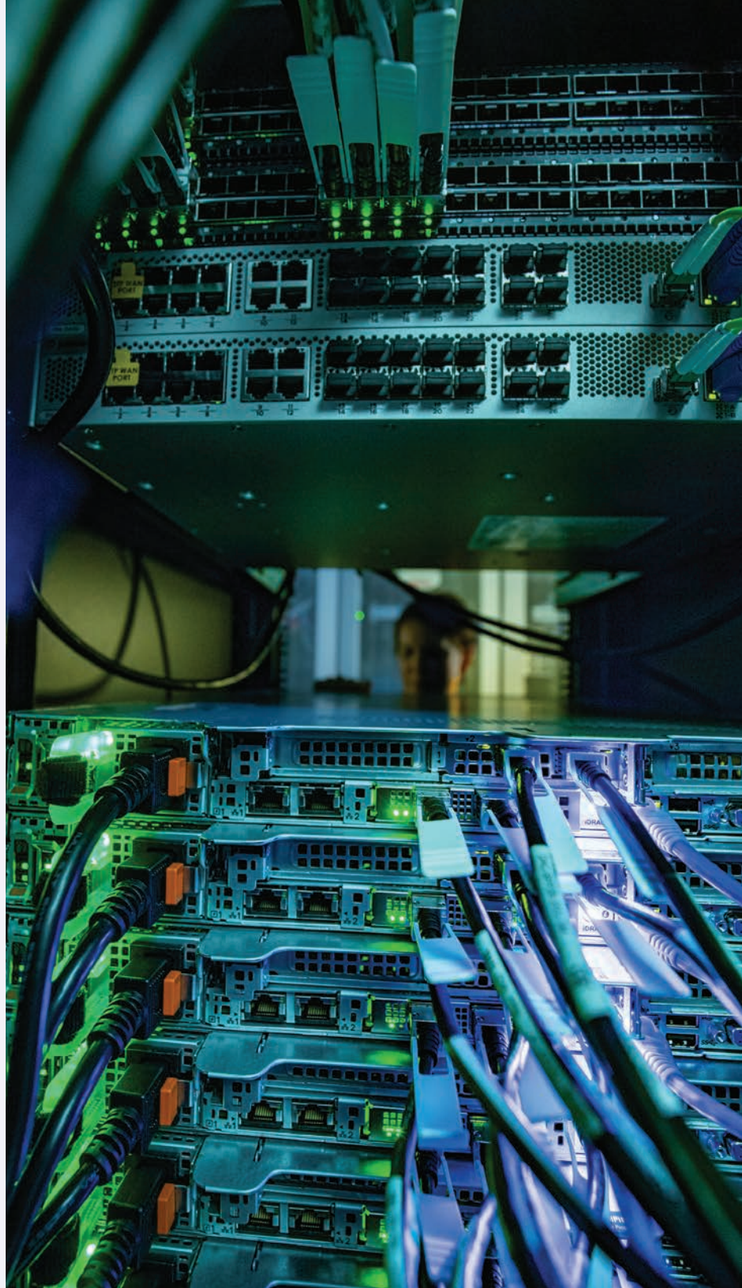
Providing mission-focused accreditation, controls, and risk mitigation for information and operational technology.

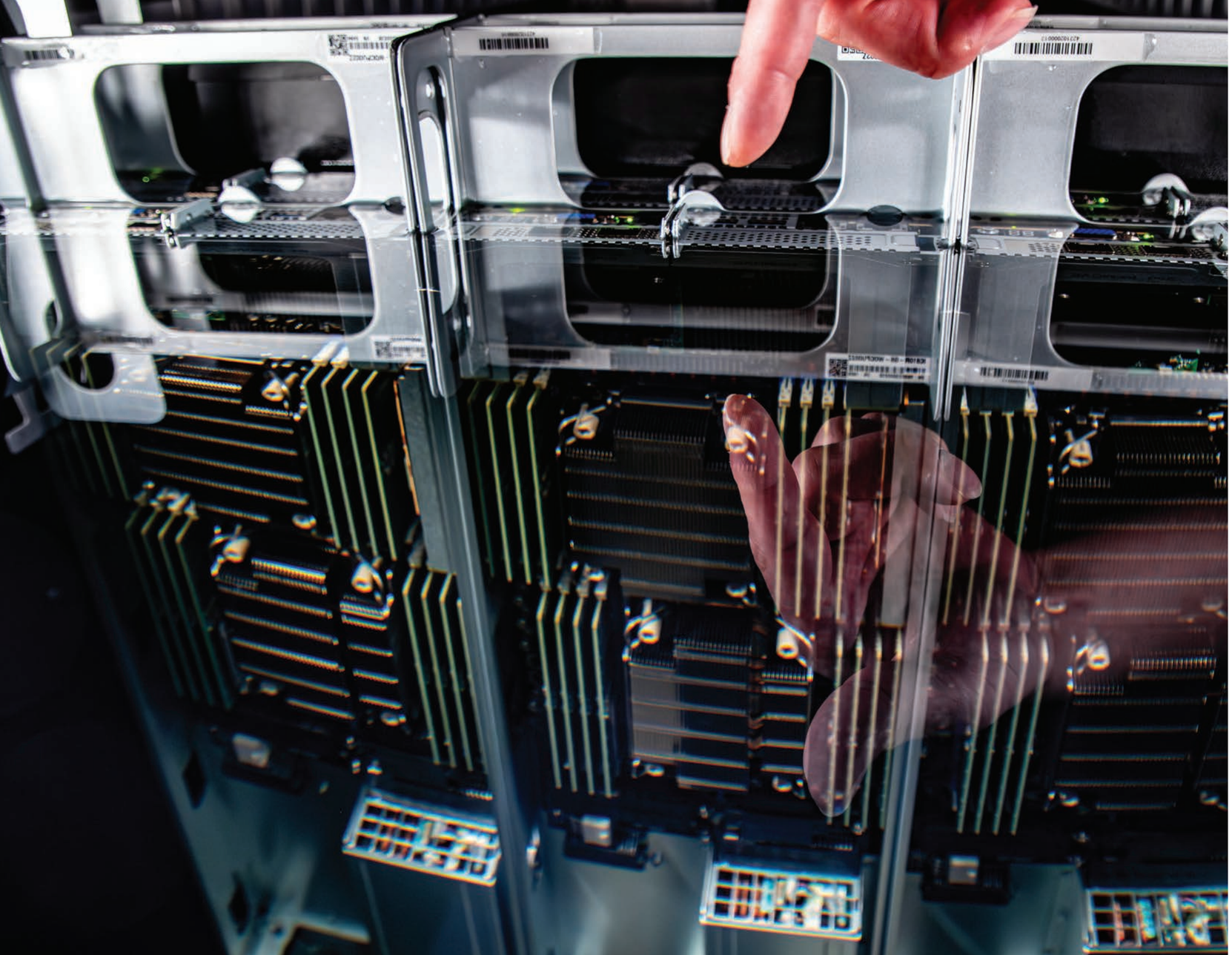
Integrated Cyber Assurance

Managing mission-critical software applications for scientists and engineers in the Nuclear Security Enterprise (NSE).

Software Solutions

As the trusted steward of weapons engineering research—past and present—our division ensures the secure, efficient, and strategic management of vital scientific, technical, and historical data.





WRS hubs of innovation focus on mission delivery.

Product Realization Integrated Digital Enterprise (PRIDE): Provides mission-critical software applications to streamline business processes across the Nuclear Security Enterprise (NSE) and enable the nuclear weapons lifecycle through innovation and collaboration.

National Security Research Center (NSRC): Provides enduring access to data essential for maintaining the nuclear stockpile via its classified library and digital platforms.

Nuclear Weapons Cyber Assurance Laboratory (NWCAL): Ensures the security of mission-critical hardware and software for the Weapons programs through cyber-physical assessments of operational technology and associated systems.

Weapons Learning Transformation (WLT): Provides tools and services to enhance and accelerate mission effectiveness through learning.

Mission Data Stewardship (MIDAS): Modernizes the data ecosystem for the weapons mission through data governance, data stewardship and data operations.

WRS Groups develop and maintain capabilities and expertise.

NSRC Mission Support (NSRC-MS): Curates and disseminates weapons-related information to ensure its long-term usability for current operations and future innovation.

NSRC Digital Collections (NSRC-DC): Delivers best-practice, specialized digitization and expertise to preserve unique, historical weapons data for future use.

Secure Networks and Assurance (SNA): Identifies and mitigates cyber threats to safeguard critical information assets.

Weapons Mission Technology (WMT): Provides software solutions for Weapons mission applications.

CAPABILITY PILLAR

Data Stewardship

WRS is responsible for the preservation, curation, digitization, extraction, contextualization, protection, and secure delivery of nuclear weapons data.

Our Division

- **Works toward a federated, integrated, and interoperable data and knowledge network network at LANL and across the Nuclear Security Enterprise (NSE)**
- **Leads an AI-ready data infrastructure for the Weapons Program**
- **Establishes comprehensive data and knowledge governance**

We accomplish this by:

- Facilitating the Weapons Programs Data Governance Council with data integration and architecture expertise
- Providing high-quality, relevant, and timely data supporting national security and enabling informed decision making
- Managing weapons data repositories
- Preparing data to leverage AI capabilities

CAPABILITY PILLAR

Knowledge Access & Transfer

WRS's historians, archivists, librarians, knowledge management specialists, and data engineers are building the expertise necessary to unlock weapons data transforming physical archives into dynamic, discoverable data platforms that support innovation and inquiry well into the future.

Our Division

- **Provides researchers with secure, accessible tools for structured, contextualized data access**
- **Institutionalizes knowledge capture and transfer to strengthen the Weapons mission**
- **Leads classified learning and knowledge transfer efforts for the Weapons mission**

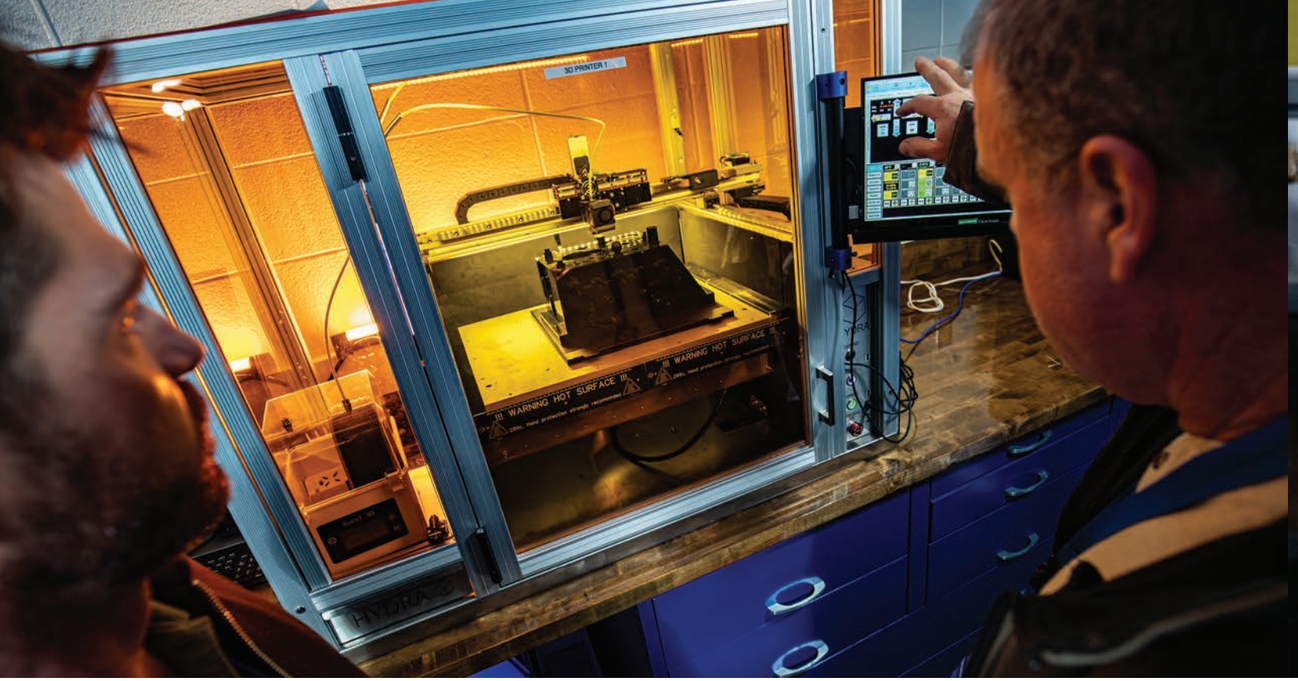
We accomplish this by:

- Unlocking 80+ years of weapons data, making it accessible, digestible, and useful to researchers
- Creating comprehensive, searchable, and context-rich digital collections
- Providing tools and services to standardize, accelerate, and personalize mission-focused learning

CAPABILITY PILLAR

Integrated Cyber Assurance

Security solutions that support mission-critical Weapons programs, ensuring that classified systems and networks remain secure. WRS protects robust data sets from internal or external threats.



Our Division

- **Integrates information and operational technology assurance practices and methodologies to meet the ever-changing security landscape**
- **Serves as the data security authority for the Weapons mission**
- **Establishes, enhances, maintains, and secures Weapons programs' classified networks**

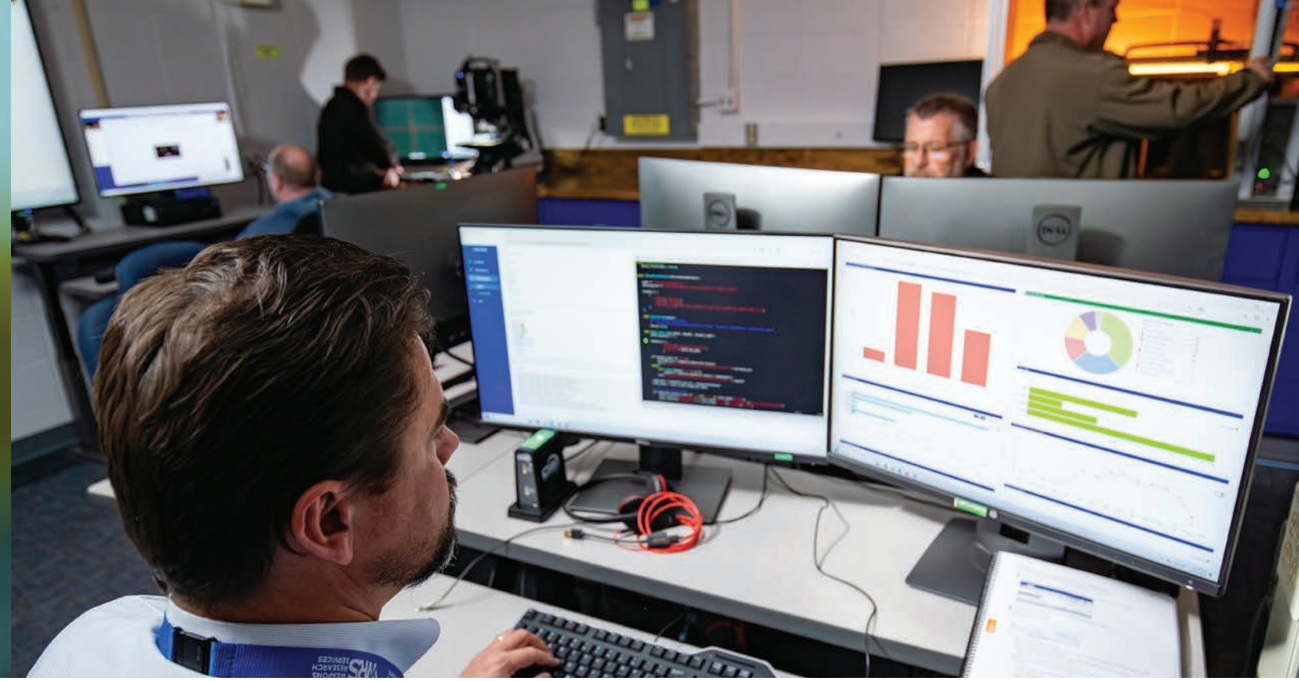
We accomplish this by:

- Providing data security of high-risk collections and protecting classified critical weapons systems and data
- Identifying and mitigating cyber threats, thereby safeguarding critical information assets
- Analyzing new equipment and software to identify and mitigate security risks

CAPABILITY PILLAR

Software Solutions

WRS implements software applications at LANL and across the Nuclear Security Enterprise (NSE), delivering specialized solutions that support mission-critical Weapons programs. The software solutions we provide are the digital architectural backbone of the Weapons Program.



Our Division

- **Manages mission-critical weapons software across the Weapons Program and the Nuclear Security Enterprise (NSE)**
- **Advances digital transformation efforts to streamline and shorten the weapons production lifecycle**
- **Leads the transition to enterprise-supported solutions**

We accomplish this by:

- Improving and modernizing engineering software and systems to support evolving Weapons programs requirements while preserving legacy weapons systems
- Designing and maintaining the infrastructure to manage the weapons data repositories
- Supporting the engineering applications tool suite for the Weapons Program through digital engineering software
- Leading efforts to synchronize and integrate data and tools across platforms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