

CONFIDENTIAL - SECURITY INFORMATION

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SANMAS Transition Project

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Background

- The Material Accountability Records System (MARS) is Sandia's accountability system
 - Placed in production in 2006
 - Programmed internally at Sandia
 - Microsoft Access 2010 user interface with a SQL Server database
- MARS is used to meets requirements in:
 - DOE O 410.2, Admin Chg. 1, *Management of Nuclear Materials*
 - DOE O 474.2, Page Chg. 4, *Nuclear Material Control and Accountability*

Problem and Decisions

Problem:

- MARS is not compatible with Access after version 2010
 - Sandia's Corporate Computing Department wants to phase out Office 2010 since Microsoft no longer issues security patches for it

Decisions:

- Sandia leadership decided to transition to LANMAS
 - DOE-created and supported core accounting system for MC&A reporting
- In June 2017, Sandia contracted a Project Lead with MC&A and LANMAS experience
- Create transition team composed of staff from
 - IT, MC&A Accounting, MC&A Measurements, Nuclear Material Management (NMM)

Risk

If	Then	Potential Impacts
MS Access is no longer supported at Sandia	Use of MARS in current configuration will impede ability to meet DOE requirements	<ul style="list-style-type: none"><li data-bbox="1271 361 1798 451">• Inability to detect loss or diversion of material<li data-bbox="1271 511 1653 601">• Difficulty locating material<li data-bbox="1271 661 1727 751">• Failure to meet DOE requirements<li data-bbox="1271 811 1676 901">• Hinder customers' mission work<li data-bbox="1271 961 1676 1008">• Loss of reputation<li data-bbox="1271 1068 1750 1115">• Loss of historical data

Project Objectives

- Ensure a sustainable accounting system is in place before Access 2010 is no longer supported
- Develop system requirements for development and production
- Develop, test and validate required system functionality prior to implementation
- Develop new system processes and procedures
- Continue involvement in the LANMAS Modernization Project development and testing of LANMAS version 4.0

Project Assumptions

- Project funding is available for both system development and implementation
- Project resources remain stable
- System will not be safety software
- System will be based LANMAS version 3.3a, not version 4.0
- No changes to current MC&A or NMM requirements will occur

Gap Analysis

- Team created list of business requirements based on
 - MC&A Job Aids
 - Interviews with MC&A and NMM personnel
- Gap analysis completed on July 27, 2017
- Categorized into confirmed gaps, possible gaps, and not gaps
 - Gaps: essential functions that LANMAS core does not perform
 - Solve with business process change OR bolt-on
 - Bolt-on: external program that would need to be acquired or created to interact with LANMAS core
 - Possible gaps: unknowns that needed more investigation at the time
 - Not gaps: LANMAS core performs this function

Gap Analysis (continued)

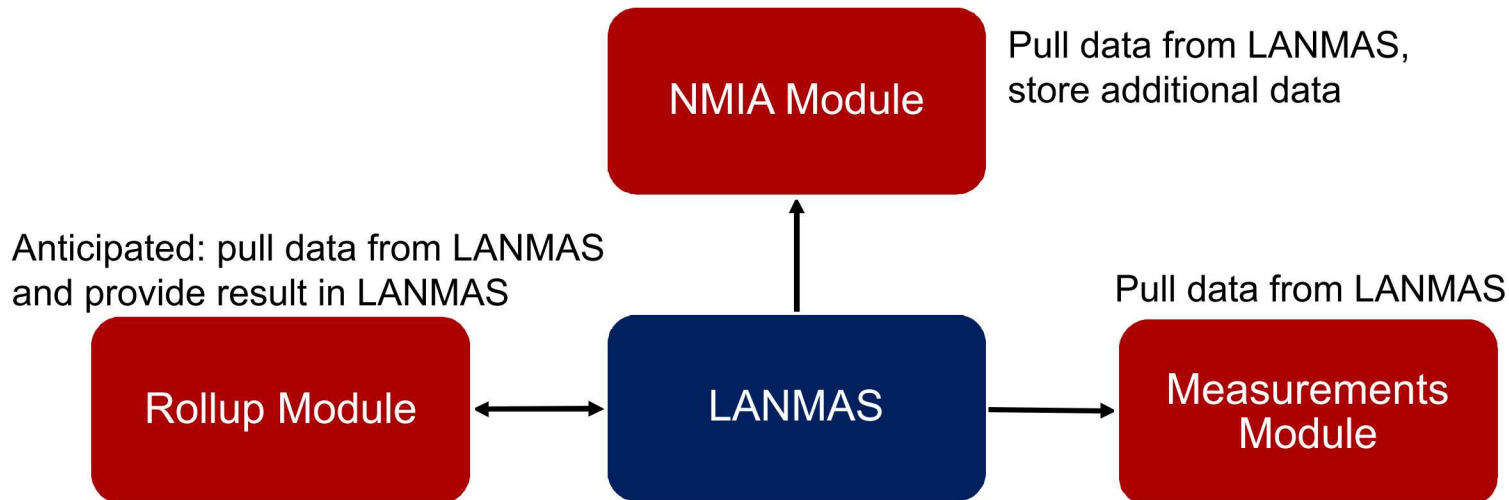
- The analysis reviewed 300+ business requirements
- At the time of the analysis:
 - LANMAS met 89%
 - 11 known gaps
 - 26 possible gaps
 - 7 business process changes to bridge gaps
- Possible gaps have since been characterized as gaps or not gaps

Gap Resolution

- Project Lead met with Savannah River Site LANMAS personnel to try to identify alternative ways to address gaps within LANMAS
- Contacted other DOE/NNSA to identify potential bolt-ons that are available
 - The Nevada Nuclear Security Site (NNSS) shared their Nuclear Material Inventory Assessment (NMIA) bolt-on, which will meet our needs
 - Other bolt-ons identified did not meet our needs

Bolt-Ons Needed

- Several key functions could not be addressed with core system or work-around
 - Monitoring of rollup (accumulation of material to a higher category)
 - Measurements module
 - NMIA reporting capability
- LANMAS plus bolt-ons will be called SANMAS



Initial Design Review

- On November 15, 2017, Wyant Data Systems (WDS) reviewed the Project Lead's implementation plan and project schedule
 - WDS has extensive experience with LANMAS
- WDS concurred with the plan and schedule and provided advice/lessons learned

Upcoming Milestones and Estimated Completion Dates (ECDs)

- Develop and deploy rollup bolt-on
 - July 23, 2018
- Deploy NMIA bolt-on
 - August 1, 2018
- Develop and deploy measurements bolt-on
 - September 25, 2018
- Conduct second design review
 - October 2, 2018
- MARS and SANMAS parallel processing
 - December 3, 2018 through December 21, 2018

Upcoming Milestones and ECDs (continued)

- Final design review
 - February 7, 2019
- Product release
 - February 21, 2019
- Training developed
 - March 7, 2019
- Project complete
 - March 21, 2019

Challenges

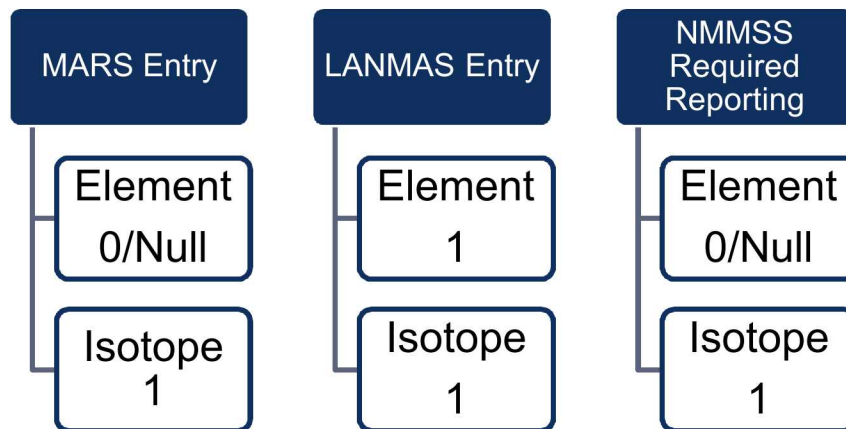
- Project Lead did not have a clearance
 - Couldn't access MARS (classified system)
 - Couldn't work inside the limited area with the team without escort
 - Granted interim Q clearance on November 10, 2017
- Approvals to add a new classified system with Access 2010 for the Project Lead to use were difficult to obtain
 - Granted January 29, 2018
- Continued Sandia pressure to upgrade Office 2010

Challenges (continued)

- Staffing
 - The Project Lead is part time and lives out of state
 - The NMM and MC&A Teams are busy with their normal duties
 - NMM/MC&A Manager took a new position; the Accounting Lead assumed many of his duties temporarily
- Training/Job Aids
 - Need to be developed
 - Current processes are MARS-centric, will require significant changes

Data Migration Challenges

- LS Auto, which migrates the data into LANMAS, is performing slowly and will stop when an error is encountered
- MARS stores some material data differently than LANMAS
 - Example: Deuterium gas in MARS has a 0/null for element weight, but LANMAS won't allow an element weight of 0/null
 - LANMAS entry: element weight equal to the isotope weight, but reports correctly to NMMSS
 - Will address during the data migration with IT support



Accomplishments

- Design review completed
- Project plan finalized
- NMIA bolt-on evaluation completed
- Obtained approval to load LANMAS core and NMIA bolt-on onto the classified network
- Started data migration on the classified network in February 2018
- LANMAS quality environment database is available for MC&A team to test/view migrated data on the classified network
- WDS on contract to assist development, migration and miscellaneous transition issues.

Questions?