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LANL Member Update for the 41st MDMC

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LA-UR-

Agenda

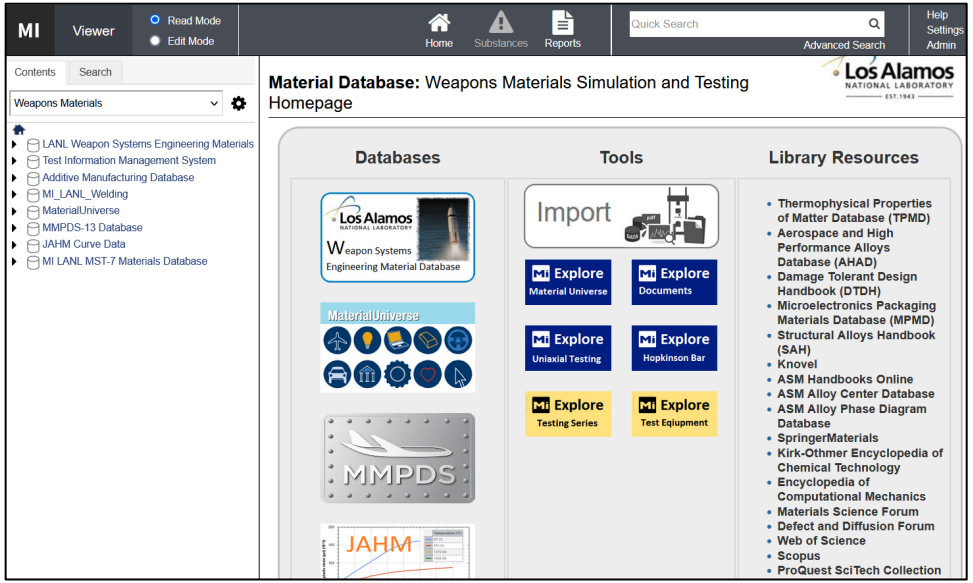
- About LANL
- Institutional support for Granta MI at LANL
- Update on Granta MI as a Nuclear Security Enterprise (NSE) resource
- Some recent lessons-learned
- Some gripes

About LANL

- LANL:
  - Is one of three design agencies (along with Sandia and Lawrence Livermore) for U.S. nuclear deterrent.
  - Is the production agency for some components.
  - Supports many other missions, including non-proliferation and energy security .


Institutional support for Granta MI at LANL

- **In the 2000's and 2010's**:
  - Granta was used and supported by Engineering Analysis group
  - A few 'experts' maintained and used it
  - Bandwidth of data upload was limited
- **Today**:
  - Granta is maintained by institutional IT support*
  - There are 100s of users across many groups
  - Data is uploaded by data-producers
  - We are hiring 'data concierges' and working with MDMi to further increase data upload bandwidth



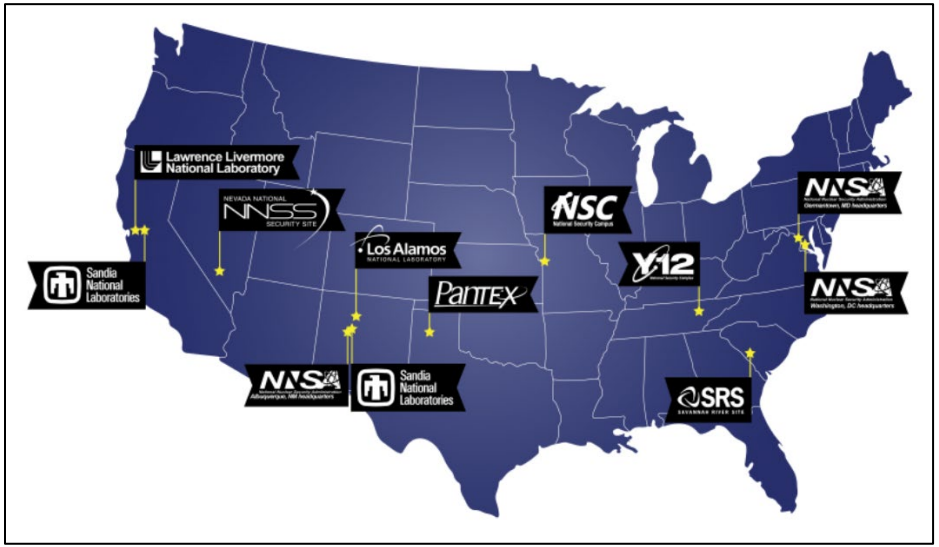
Fact sheet:

- 2 local production instances: **classified** and **unclassified**
- 2 *enterprise* instances: **classified** (prod.) and **unclassified** (dev.)
- All instances on v2022 R1
- MI:Viewer is still the workhorse application

*Note that Schembri is giving this talk and he's in the Engineering Analysis group. So we're not quite there yet.

Update on Granta MI as a NSE resource

- **Goal:** migrate to **enterprise** instances
  - ‘Shared’ dbs for all sites to manage similar data
  - ‘Local’ legacy dbs hosted on enterprise instance
- **Challenge**: *Create and document standard schema*.
  - Requires SME input/discussion
  - Must be well-documented
- **Approach**:
  - Modular *schema elements*
    - Eliminates duplicate attributes/objects
    - Developed on Unclassified dev enterprise instance
  - MDMi to help with importer support



Some recent lessons-learned

- Managers don't understand Granta or data management
  - "Granta is COTS, so we just buy it and use it, right?"
  - We need to manage their expectations to allow for:
    - Schema development
    - Importer/report development
    - Standardization & documentation of test instrument workflow
    - Integration into CAD/CAE
- Newer versions of MI require greater IT support (this is not a gripe)
  - Web-based apps need configuration:
    - OneMI, Explore, Link Visualizer, etc
  - Authentication (especially OIDC) may not play nice with existing IT infrastructure:
    - Firewall, F5, CORS
    - Authentication/authorization methods

Some gripes

- Data validation is our #1 problem to maintain quality data
- Documentation is (still) fragmented
  - (or out-of-date/non-existent; e.g. for OIDC configuration)
  - (although some of the documentation – MI:Viewer – is very nice now.)
- Adding ‘help files’ to attributes is (still) tedious
- Editing Unit Systems is (still) tedious
- Importer creation, especially across multiple tables, is (still) painful
- Linux support is (still) sketchy:
  - For Gateways
  - RHEL 8 doesn’t play nice with IIS in LANL IT environment
- Elasticsearch index is fragile

Thanks Granta for these improvements

- Functional data in tabular data! (but please fix bugs)
- Link visualizer
- Export of multiple records from Viewer
- Smart cross-database links
- Python STK bug fixes