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BUILDER Integration with NNSA

DOE-NNSA MULTIPLE CMMS INTEGRATIONS WITH SPIRE

To lower the overall cost and ease of maintenance of NNSA's BUILDER database, a solution was needed to expedite integrations with multiple CMMS applications across nine NNSA remote sites.

The Task

DO SOMETHING UNPRECEDENTED

No IT system within NNSA communicates on an automated basis with each of the remote sites.

CMMS Systems

A sampling of the Computerized Maintenance Management Systems (CMMS) utilized by NNSA sites and labs:

› Maximo

› Asset Suite

› Infor EAM

› SAP

› Other Internal Systems

Primary Goals

› Minimize NNSA's implementation costs by enabling a single point of data entry

› Support a common framework

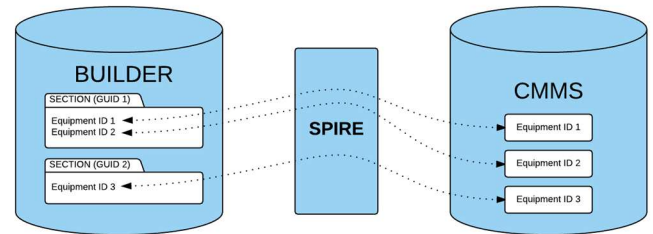› Enforce organization business rules

› Maintain data security

Solution Summary

API AND WEB PORTAL

The National Nuclear Security Administration (NNSA) within the Department of Energy (DoE) contracted for a data integration toolset to facilitate data exchange between multiple site Computerized Maintenance Management Systems (CMMS) and BUILDER. The contractor providing the system is DIGON Systems, and the product used is called SPIRE.

SPIRE is leveraging the BUILDER Application Programming Interface (API) to facilitate data communications. The SPIRE platform has a web portal that allows users to process batch Excel files. If a more real-time capability exists within the CMMS, SPIRE also provides a RESTful API that simplifies communications.

SPIRE uses the unique asset identifier stored in the CMMS to properly track changes to each asset between BUILDER and the CMMS, ensuring BUILDER Section data is maintained accurately.

MESSAGE TYPES

SPIRE provides five types of "messages," or data processes. These messages are designed to cover the main situations where data must be synchronized between a site's CMMS and BUILDER.

› Building – Synchronizes facility/asset-level data between the CMMS and BUILDER.

› Inventory Detail – Allows section information (such as condition, quantity, size and age) to be kept up-to-date between systems.

› Inspection – Allows inspection information to be maintained between the CMMS and BUILDER.

› Work – Synchronizes work items between BUILDER and the site CMMS.

› Get Data – Allows a user to request reports from BUILDER that provide data additional to that provided by the Building, Inventory Detail, Inspection, and Work processes.

ADVANTAGES

Key advantages of the SPIRE API include:

› Support for unique keys outside of the BUILDER GUID. This includes Equipment Detail ID Number and facility RPUID.

› Transaction logging and debugging support through the web portal.

› Performance improvements with synchronous batch files.

› Enforces additional business rules to ensure external systems do not change fields that are assigned to another database of record. For example, a CMMS cannot change a building's square footage.

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SPIRE   NEW SYNC   SYNC LOGS   FUTURE FEATURE   FUTURE FEATURE

ENVIRONMENT   ▾ Borleias Sullust Alderaan-This is the current environment

NEW SYNC TO BUILDER SITE: demo.buildersoftware.net

SELECT FILE TYPE	CHOOSE FILE *Select a CSV file to upload. The file must conform to SPIRE Data Dictionary format.*
○ Building	
◉ Inventory	Select File
○ Inspection	Your last update was on 12/05/18 **RUN SYNC**
○ Work	

UPLOAD ACTIVITY

	FILE NAME	UPLOAD TIME	PROCESSED TIME	☰	✅	❌
✔	Inspection Update Site 18 records.csv	12/6/2018 10:08 AM	12/6/2018 03:08 AM	10	10	0
✔	Inspection Update Site 18 records.csv	12/6/2018 10:08 AM	12/6/2018 03:08 AM	10	10	0
✔	Inspection Update Site 18 records.csv	12/6/2018 10:08 AM	12/6/2018 03:08 AM	10	10	0
✔	Inspection Update Site 18 records.csv	12/6/2018 10:08 AM	12/6/2018 03:08 AM	10	10	0
✔	Inspection Update Site 18 records.csv	12/6/2018 10:08 AM	12/6/2018 03:08 AM	10	10	0
✖	Inspection Update Site 18 records.csv	12/6/2018 10:08 AM	12/6/2018 03:08 AM	10	10	0