

Engineering Analysis, Intelligent Solutions

# SPI

## 2009 – 2013 Merging

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## Claiming and Merging

SPI 2009 and 2013 have the Project Claim and Merge functionality where we have the ability to scope items/entities from the As-Built into an Engineering Project. This allows users to work on a subset of information while not affecting the As-Built or Operating information. This can be very power functionality for owners who have multiple EPCs working within their facility. However there can be some complications with this functionality.

- **Dummy Project Entities**
  - These are entities that can be left in the project that have a child relation, but the entity itself is not available to the project domain
- **Orphaned Child Entities**
  - These are entities that are no longer visible through the interface
  - Most of the time this is caused by a parent to child relation issue between As-Built and Project parent entities


# ■ Project Entity Associations

1	TABLE_NAME	PANEL_ID	STRIP_ID	CHANNEL_NAME	CHANNEL_ID	ENG_PROJ_ID	ENG_REF_ID					As-Built Entity
	CHANNEL	581052	581053	SW	581054	0	0					
1	TABLE_NAME	PANEL_NAME	PANEL_ID	ENG_PROJ_ID	ENG_REF_ID							Dummy Project Entity
	PANEL	082-ZSO-0007	581052	-1192147	0							
1	TABLE_NAME	PANEL_ID	CMPNT_ID	PROJ_ID	SITE_ID	CHG_NUM	USER_NAME	CHG_STATUS	CHG_DATE	ENG_PROJ_ID	ENG_REF_ID	As-Built Entity
	PANEL_COMPOENT	581052	581047	2	1145	0	DBA	W	2011-08-08	0	0	
1	TABLE_NAME	panel_id	strip_name	strip_id	eng_proj_id	eng_ref_id						As-Built Entity
	PANEL_STRIP	581052	NULL	581053	0	0						
1	TABLE_NAME	PANEL_ID	STRIP_ID	TERM_NUM	TERM_ID	ENG_PROJ_ID	ENG_REF_ID					As-Built Entity
	PANEL_STRIP_TERM	581052	581053	C	581055	0	0					
2	PANEL_STRIP_TERM	581052	581053	NO	581056	0	0					
3	PANEL_STRIP_TERM	581052	581053	CUT&TAPE	581057	0	0					
1	TABLE_NAME	PANEL_ID	ENG_PROJ_ID	ENG_REF_ID								Dummy Project Entity
	UDF_PANEL	581052	-1192147	0								
1	TABLE_NAME	GROUP_NAME	WIRE_GROUP_ID	PANEL_ID	STRIP_ID	ENG_PROJ_ID	ENG_REF_ID					As-Built Entity
	WIRE_GROUP	082-ZSO-0007	581060	581052	581053	0	0					
1	TABLE_NAME	PANEL_ID	ENG_PROJ_ID	ENG_REF_ID								As-Built Entity
	WIRE_TERMIANL	581052	0	0								
2	WIRE_TERMIANL	581052	0	0								
3	WIRE_TERMIANL	581052	0	0								

# ■ As-Built Entity Associations

Results Messages


TABLE_NAME	PANEL_ID	STRIP_ID	CHANNEL_NAME	CHANNEL_ID	ENG_PROJ_ID	ENG_REF_ID
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TABLE_NAME	PANEL_NAME	PANEL_ID	ENG_PROJ_ID	ENG_REF_ID		
1	PANEL	082-ZSO -0007	1769245	0	0	 As-Built Entity

TABLE_NAME	PANEL_ID	CMPNT_ID	PROJ_ID	SITE_ID	CHG_NUM	USER_NAME	CHG_STATUS	CHG_DATE	ENG_PROJ_ID	ENG_REF_ID
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TABLE_NAME	panel_id	strip_name	strip_id	eng_proj_id	eng_ref_id
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TABLE_NAME	PANEL_ID	STRIP_ID	TERM_NUM	TERM_ID	ENG_PROJ_ID	ENG_REF_ID
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TABLE_NAME	PANEL_ID	ENG_PROJ_ID	ENG_REF_ID		
1	UDF_PANEL	1769245	0	0	 As-Built Entity

TABLE_NAME	GROUP_NAME	WIRE_GROUP_ID	PANEL_ID	STRIP_ID	ENG_PROJ_ID	ENG_REF_ID
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TABLE_NAME	PANEL_ID	ENG_PROJ_ID	ENG_REF_ID
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## Examples

In these examples we can see that the child entities are associated with the project dummy entity, however they themselves are not apart of the project. Instead they are associated to the As-Built. While the As-Built entity has no child relations.

Because of this the users cannot see the child entities through the interface in either the Project or the As-Built. Giving the perception that the child entities have been lost.

Side note: It should be noted that running checkdb to fix this type of issue could result in the child entities being deleted.

The solution to this would be; to locate all the dummy – child relations where the child is in the As-Built while the dummy is in the project. Then realign the child entities with the correct parent entity within the As-Built. This can only be completed through backend manipulation. (We can do this through automated processes)

< 100 panels

Approximately 20 Tables Affected

137,000 records needing updates

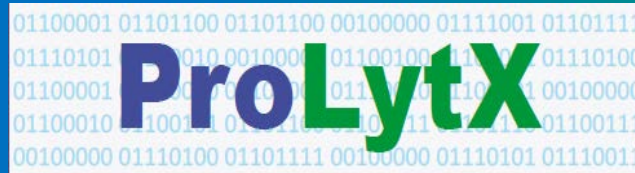
ProLytX technology used to analyze, identify solution, and resolve through automated process

## Causes

There can be a number of causes for this type of issue.

- Preference settings when claiming and merging
- Claiming and Merging the same entity to multiple projects
- Coping over the entities within the Claim\Merge buffer – there is a specific process to do this that will help resolve a number of issues





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# SPI Governance Documents

**Alex Koifman**  
Senior Consultant

“In its most abstract sense, governance is a theoretical concept referring to the actions and processes by which stable practices and organizations arise and persist.” (Wikipedia)

SPI governance documents – “A set of documents that describe processes and procedures by which engineering information is enabled, created and maintained in projects and operations using SPI.” (Alex Koifman)

## Why do we need governance documents?

- Economic reality translates into a lot of optimization and less projects.
- Reduce waste
- Improve project quality
- Accommodate project execution in the Cloud environment
- Improve communications (“RTFF”)

## Don't we have them already?

- We have an “SPI seed file”!
- We have an SPI project specification!
- We have best practices, international standards and project methodologies!
- We have vendor (Hexagon) documentation!
- We have consultants who can tell us what to do!

## What governance documents do we need?

- IT architecture and procedures (IT)  $\Omega$   $\Theta$
- Engineering Guide (engineering)  $\Omega$
- Project Specification (engineering, project management)  $\Omega$
- Facilities Guide (engineering, manufacturing/operations)  $\Theta$
- N.B.: Seed file should be a supplement to the Engineering Guide and Project Specification.

- Infrastructure architecture
- Installation, setup and administration
- Business continuity (back-up restore, disaster recovery, etc.)
- Support infrastructure and procedures.

- Standards and practices (by reference)
- SPI configuration – modules used, NC, supporting tables, spec customization, etc.
- Procedures – data entry, quality control, integration, workflows, 3-d party data, coordination, close out, claim/merge, etc.
- Deliverables (formats and content) and mandatory data entry requirements.
- Sufficient rationale for all of the above

- Project parties – Client, Contractors, Plants,
- Project definitions – overall purpose, units involved,
- Exceptions to the Engineering Guide rules – additions and exclusions



- Access to and use of SPI information
- Ownership and upkeep responsibilities
- Using SPI information in integration with other IT systems – ERP/CMMS (SAP, Maximo, etc), Reliability, Safety Lifecycle Management, etc.

## What not to include

- No replication of the engineering practices already documented elsewhere (GP, best practices, etc.) – should be included by reference
- No replication of the SPI training documents, Help or User Guides
- N.B. Use Appendices for detailed technical configuration.

## How to get it done

- Collect existing information
- Interview stakeholders
- Structure and propose
- Review and approve
- Implement on a project
- Continuously review, update and improve based on realities

# Q&A / Discussion

