

Sweden Power Seminar

Kevin Gribbin

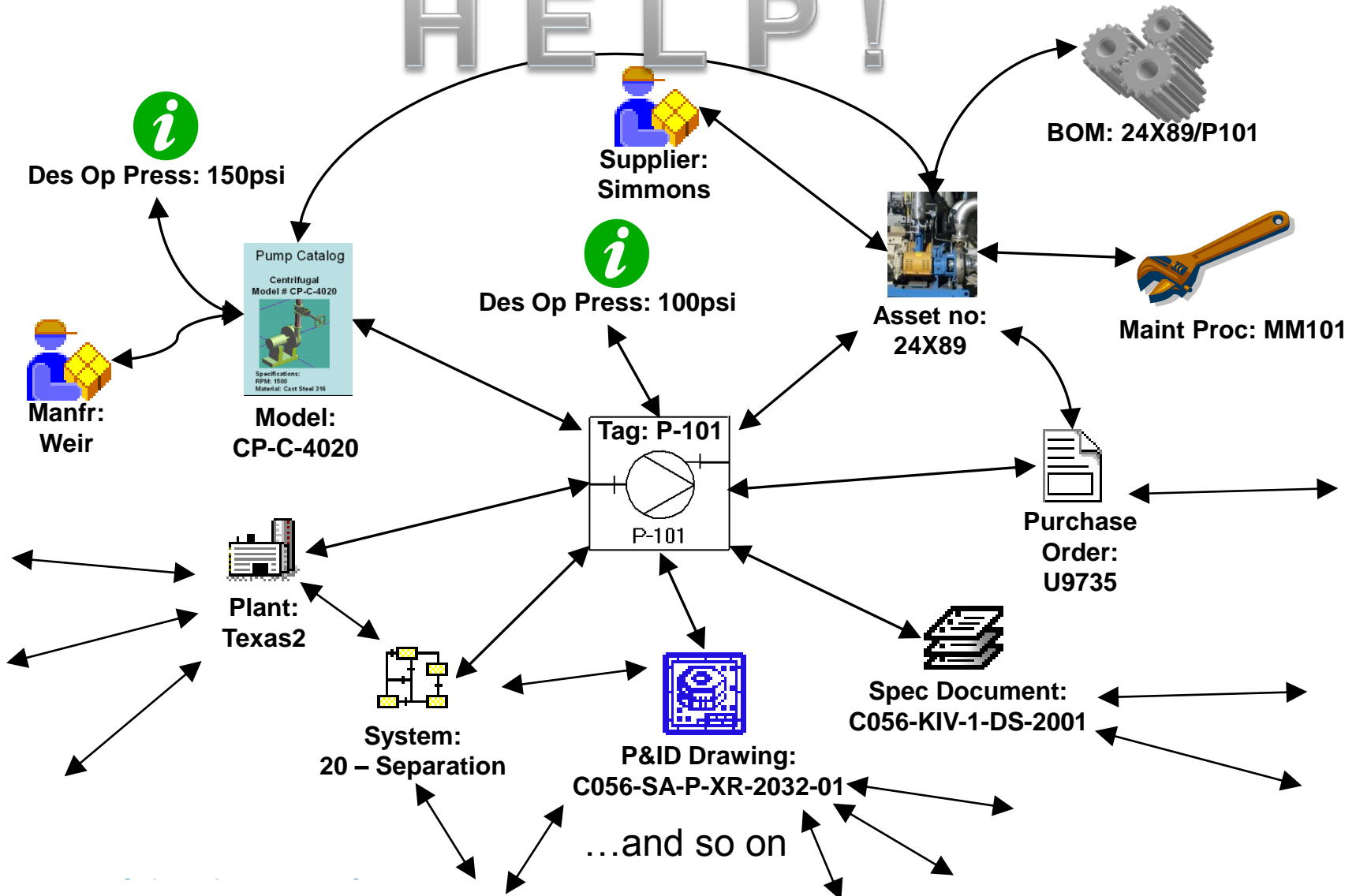
Stockholm, September 2010



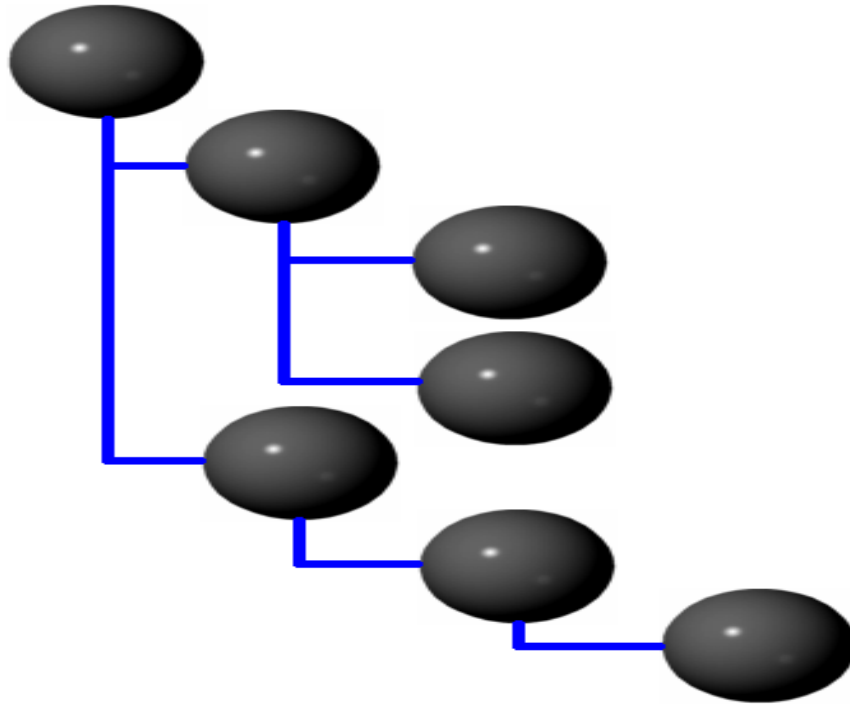
- Kevin Gribbin – Director, Integrated Management Systems
- Global Power Group
- Global Presence
 - China
 - India
 - Europe
 - South Africa
- 25 years of Information Management Experience

Information associated with a Tag has many dependencies and inter-relationships

HELP!

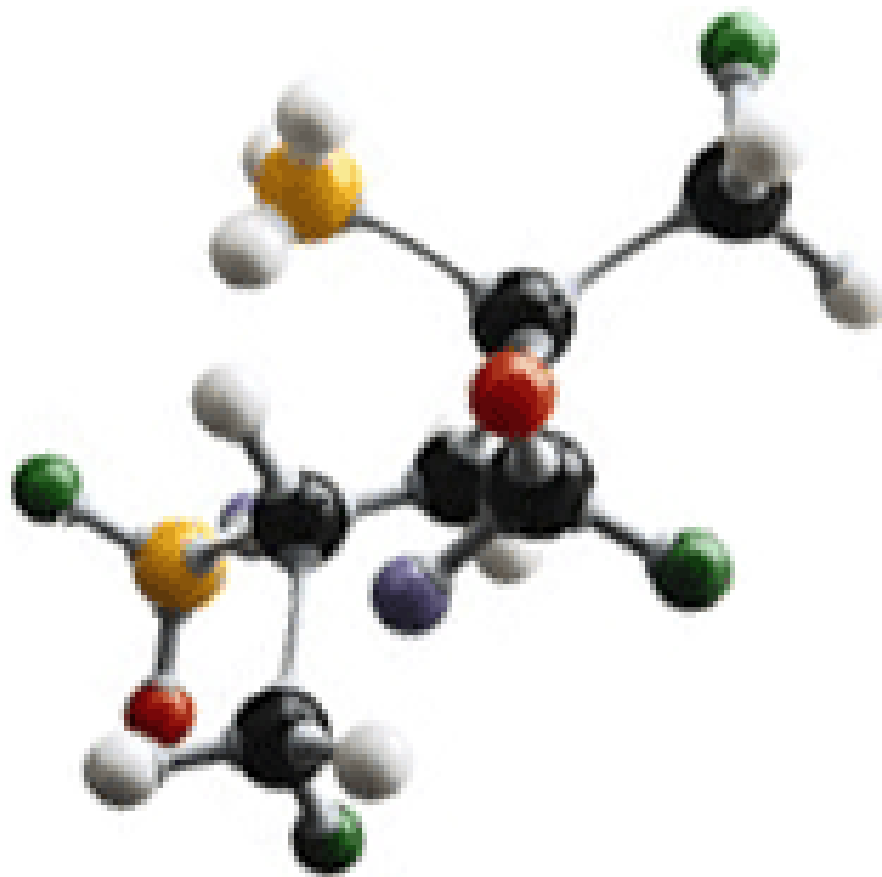


Hierarchical VS Molecular



Most hierarchical Document/Data Management systems model their information as represented by the familiar cabinet → folder → file paradigm.

Think instead of objects and relationships as molecular...

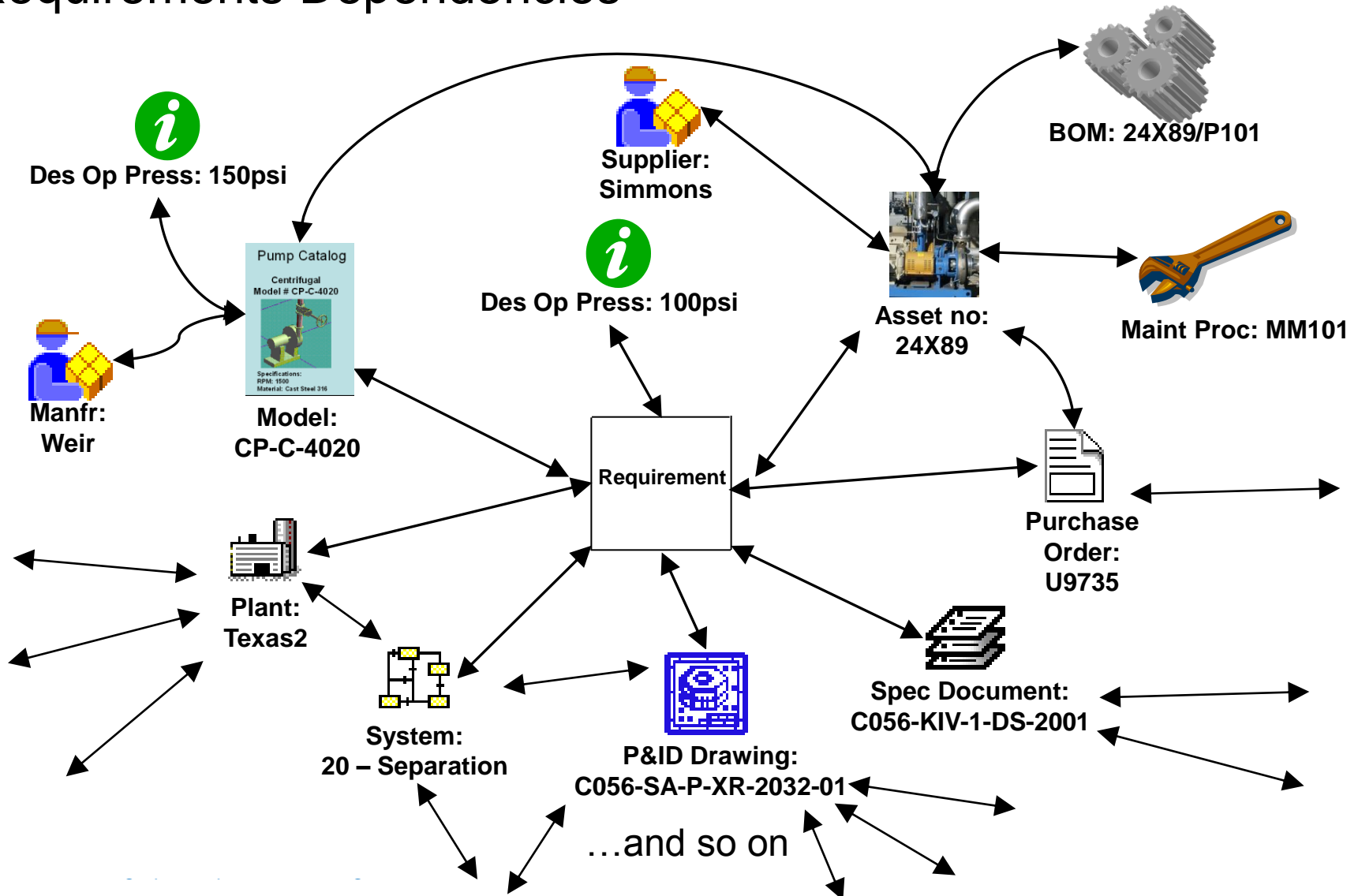




IMS
Scope

- ✓ Requirements Management
- ✓ Design Basis
- ✓ Document Management and Control
 - ✓ Engineering Drawings/Documents
 - ✓ Vendor Documents
 - ✓ Transmittals and Comments/Response
- ✓ Change Management
 - ✓ Design Change Package environment
 - ✓ Data/Document Authentication
- ✓ Ops and Maintenance
 - ✓ Tag-Asset-Model
 - ✓ Condition Reports and Corrective Actions
 - ✓ Preventive Maintenance Basis
- ✓ Inspection, Commissioning & Testing

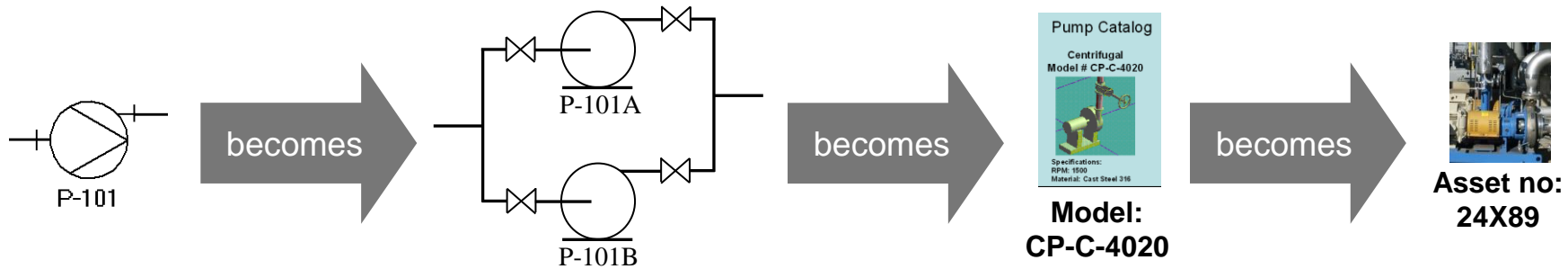
Requirements Dependencies



So what is a 'requirement'

- Classes of requirement include;-
 - Regulatory Requirements
 - Design Basis Requirements
 - Design Specific Requirements
 - Derived Detailed Design Requirements & Specifications
 - Performance Requirements
 - Safety Requirements
 - ...

Requirements tracked against evolving objects



The function to move material in the PFD and simulation system

Two logical pumps, one main, one standby on the P&ID in engineering

A single material master in the procurement system

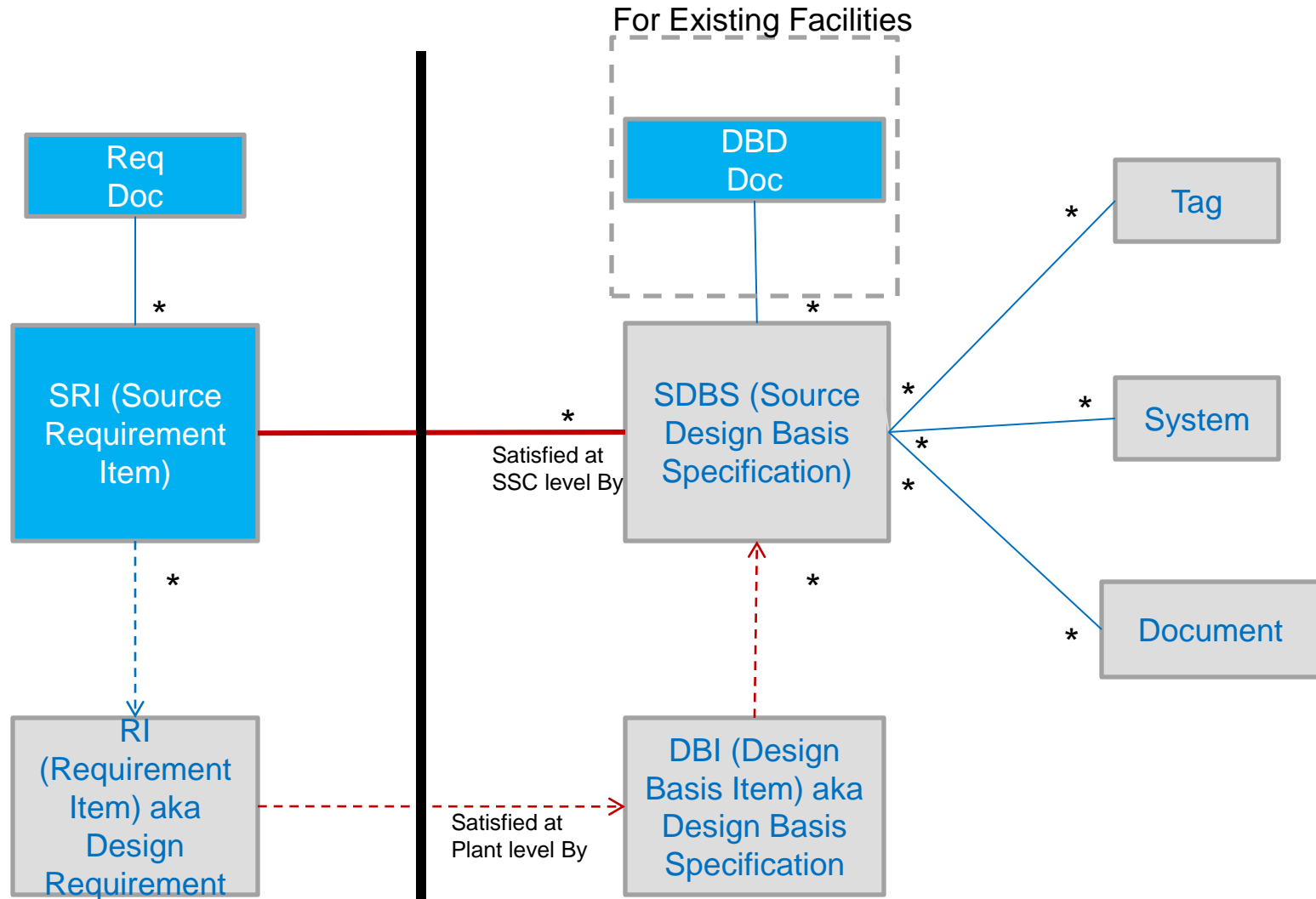
At least two (and possibly a spare with consumables) in the maintenance system

- Configuration Management of Requirements
- Change Impact Analysis
- Notification/Subscription/Warning of change
- Determination of Rules and Violations
- Correlation of Requirements Objects to Engineering Objects to assess fulfillment, completion and gap analysis



Simplified Model for Managing Requirements and Plant Configuration

(Adaptation of ANT model for use by SmartPlant)



Intergraph is a participant in EPRI's Advanced Nuclear Technology team.

Requirement Management Demonstration

- “Packaging” of requirements, with variable content and referencing dependent on the type of requirement.
- “Parent→Child” tracking of requirements so that if any field of a “parent” requirement changes (or requirement is subdivided or removed), potentially affected “child” requirements will be flagged for inspection.
- Capability for electronic approval of “draft” requirements (requires multiple user types).
- Automatic notification when a change to a requirement may affect other associated requirements.
- Capability to output requirements reports both in fixed and “ad-hoc” formats.
- Capability to link verification activities to associated requirements.

- Objects – Relationships – Attribution, created as instances from templates of 'word' requirements
- Structure of relationships, dependencies are standard capabilities of
- Review, Approval, Release standard capabilities of SPF
- Notification standard capability of SPF
- Reporting, printing, rendering standard capability of SPF
- Relate requirements to other engineering objects created by SmartPlant tools

- Single, unified infrastructure for requirements and engineering/design basis.
- The requirement for a pump and the engineering instance of the pump (and all its associated data and documents) are bonded together, supporting...
 - Change impact analysis
 - Management of change
 - Configuration, completion and traceability that the engineering record matches the requirements...

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- Establish Requirements at a granular level – configuration controlled
 - Relate many requirements together in any structural combination – impact and change management
 - Instance from a template, but track across projects and plants (where-used, used-on)
 - Relate requirements to evolving engineering objects created by SmartPlant and other tools for existence, tracking, traceability and completion
 - Hand over into operations as a complete record – as required, as design, as built ...

- Acronyms are great – what does SRI stand for

Thank You and Questions Please