Norm Traceability in System Configuration Management Context

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Services & Consulting
Migrations, Installation, Trainings, Extensions

Development
Custom Software development

5
Locations
Germany Switzerland, Czechia, Slovakia, USA

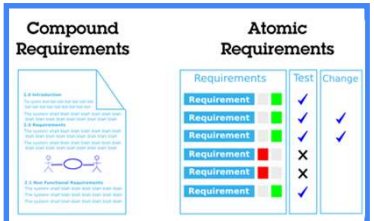
50+
employees

established in
1981

50+
worldwide projects
MedDev, Pharma, Automotive, A&D

Requirements management exists in many forms and in all projects

The 8 fundamentals that drive good Requirements & Norm Management

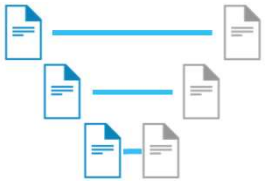


Granularity

Atomic
Testable
Manage changes

Attribute

Extend metadata
Search
Filter



Hierarchy

Organise & Structure
Decompose
Reduce complexity

Traceability

Bi-directional
Track changes
Suspect linking

Collaboration

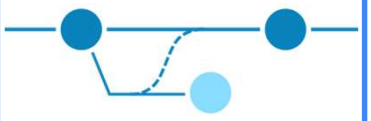
Team visibility
Discuss and comment
Review

History/Security

Audit Trail
Who what and when
Secure

Reporting

Quality Publishing
Notifications
Dashboards



Configurations

Strategic Reuse
Versioning
Product Lines

Introduction to Requirements Interchange Format (ReqIF) and its importance

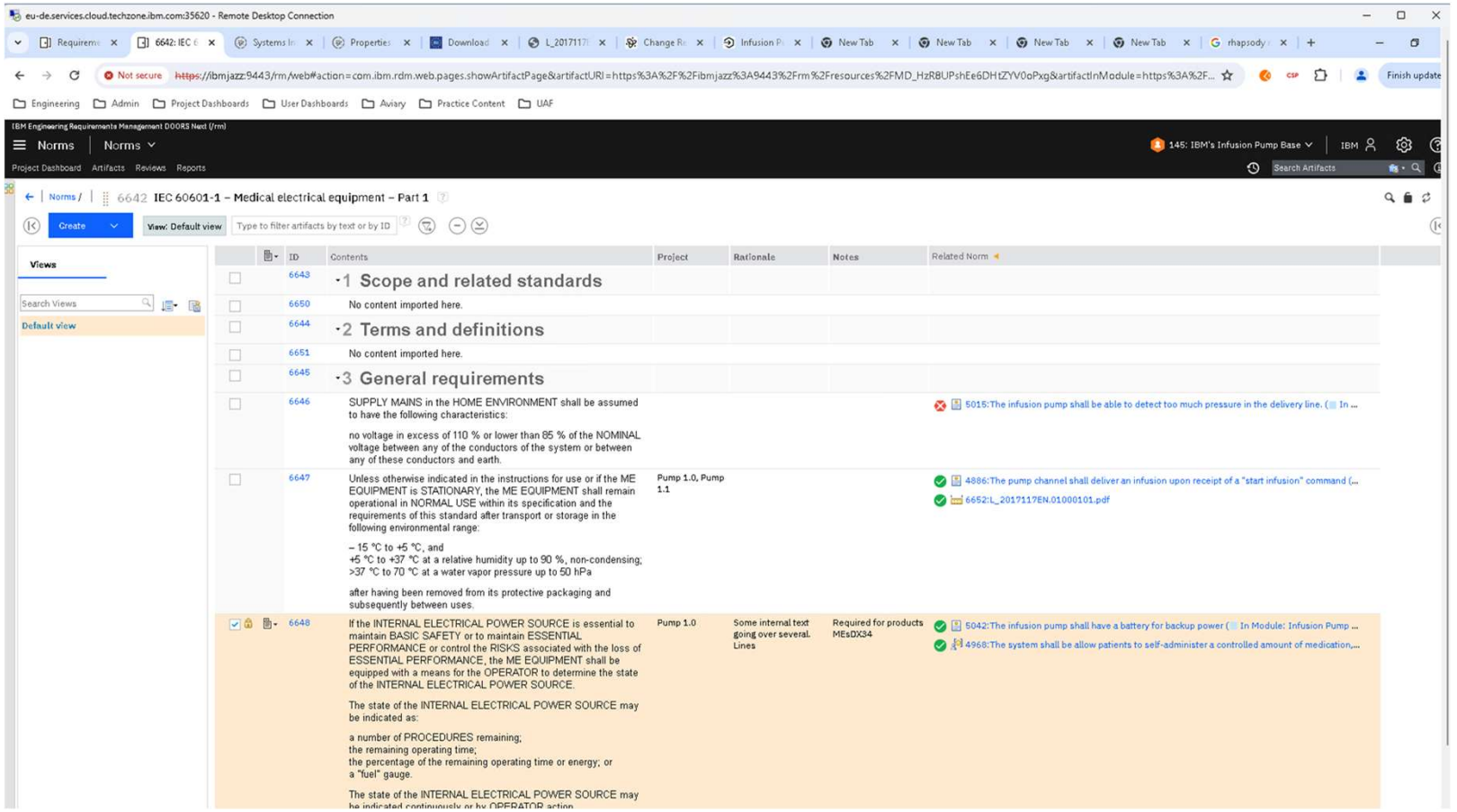
ReqIF is a standard format for exchanging requirements between different tools

ReqIF allows software tools from different vendors to exchange requirements and metadata while maintaining data integrity and defines a workflow for transmitting requirement status between partners.

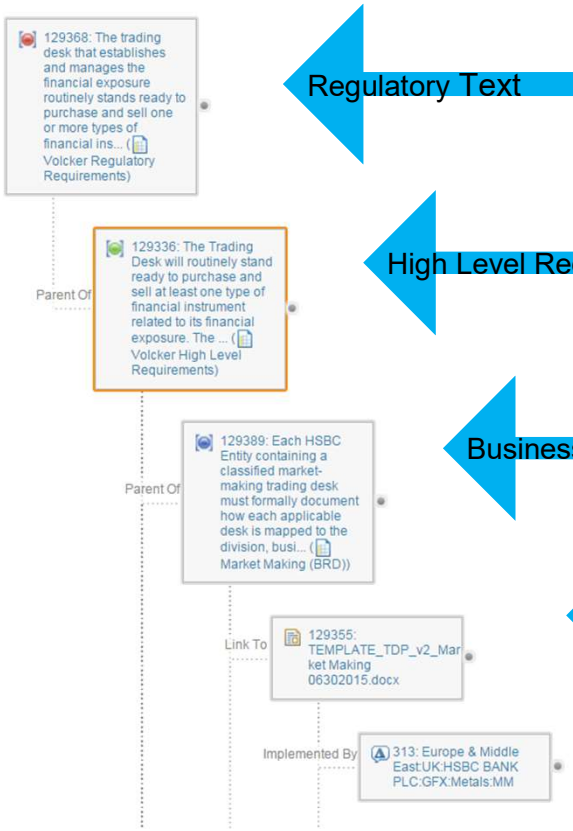
Importance of ReqIF in ensuring seamless collaboration and data exchange in requirements engineering

ReqIF is an XML file format for lossless requirement exchange that replaces lossy methods like Office Documents, PDF or Spreadsheets.

Regulatory Requirements imported



Assess the impact of change with the regulatory traceability explorer



Regulatory Text

High Level Requirement

Business Requirement

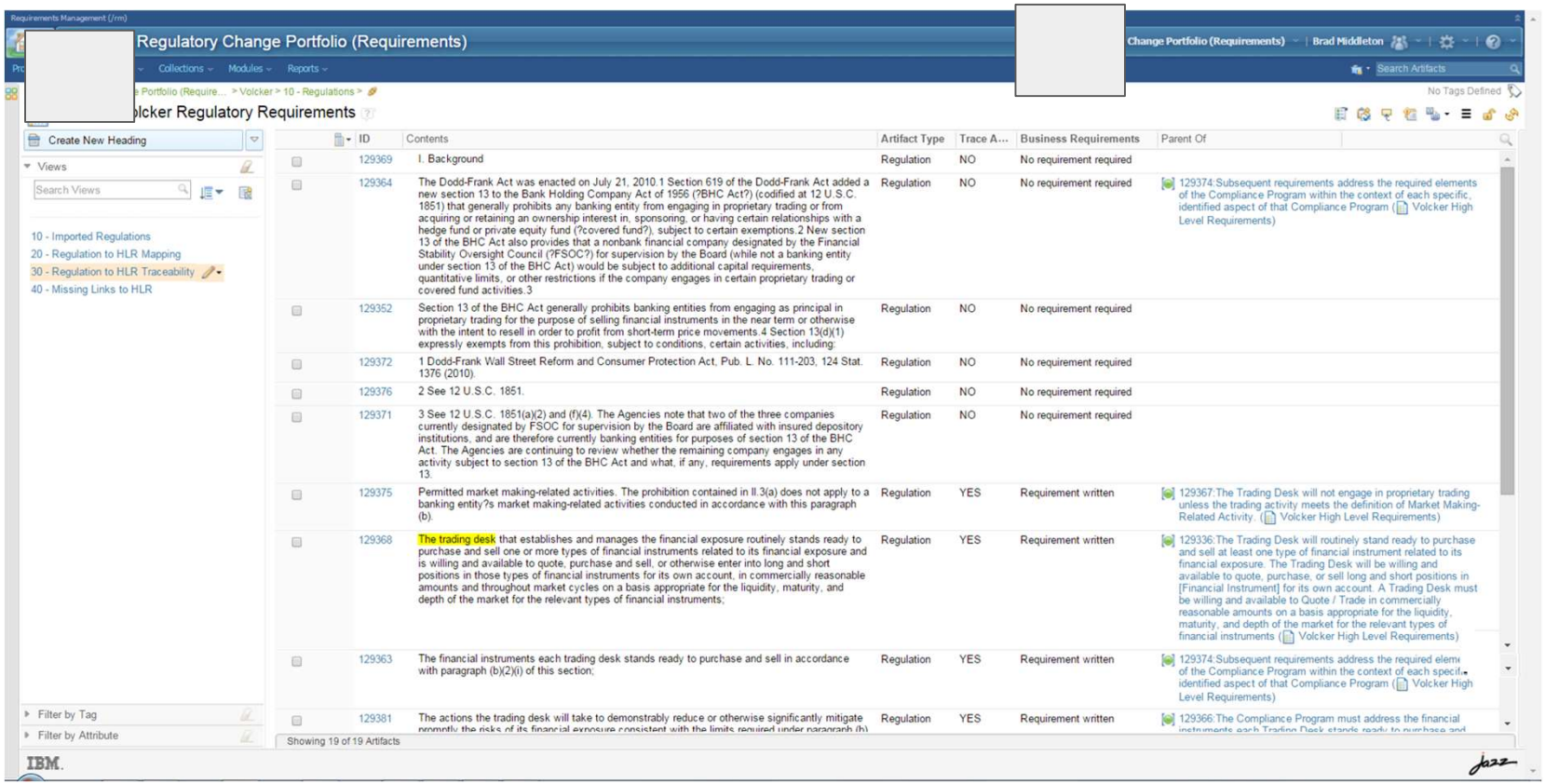
IT Func Specs / Test Cases

Evidence, Procedures Templates

Implementation Tracker (Region & Country)

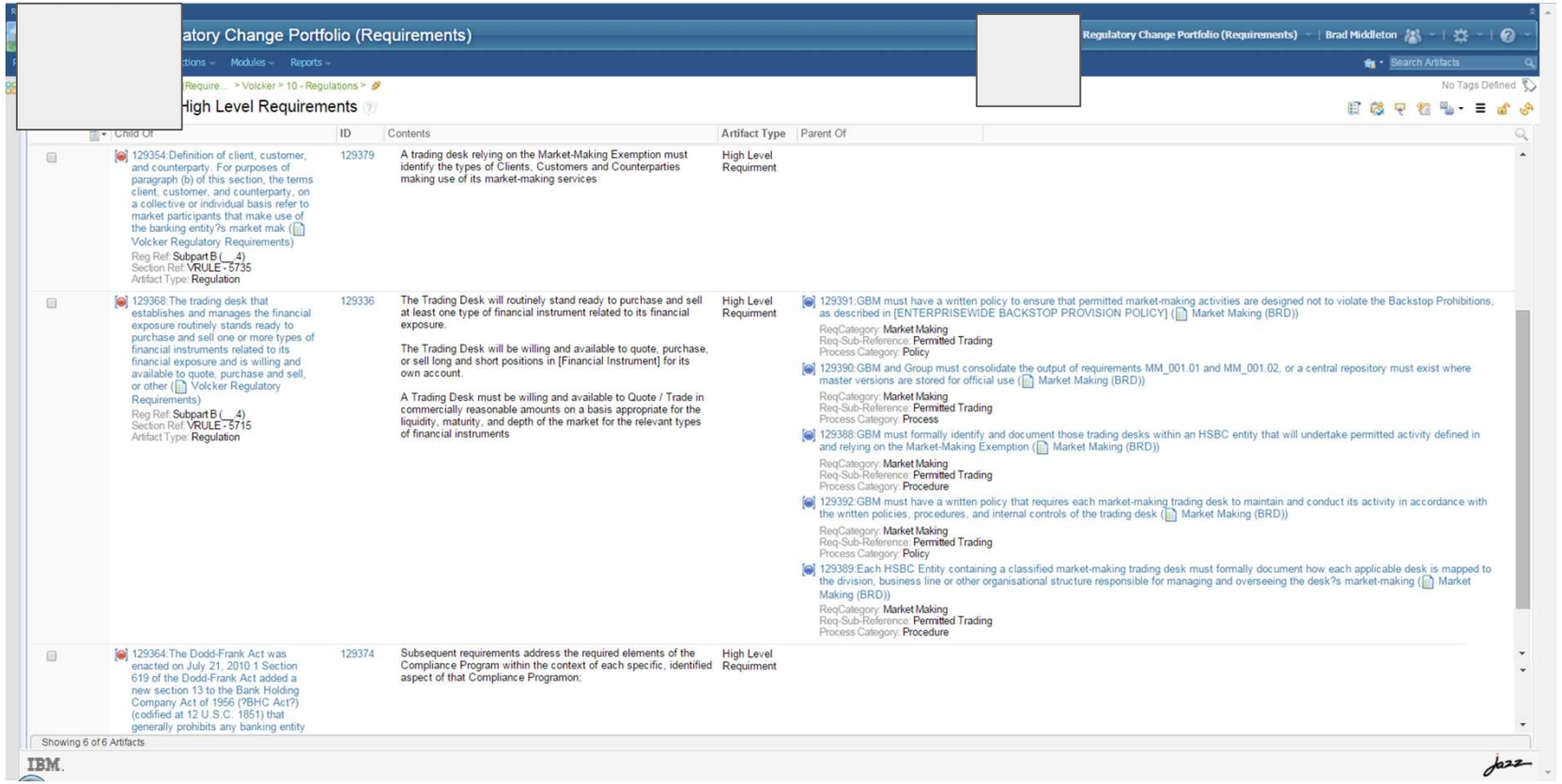
Traceability can be extended across the whole project lifecycle including for example IT Functional Specs & Test Cases

Regulations to High Level Requirements Traceability

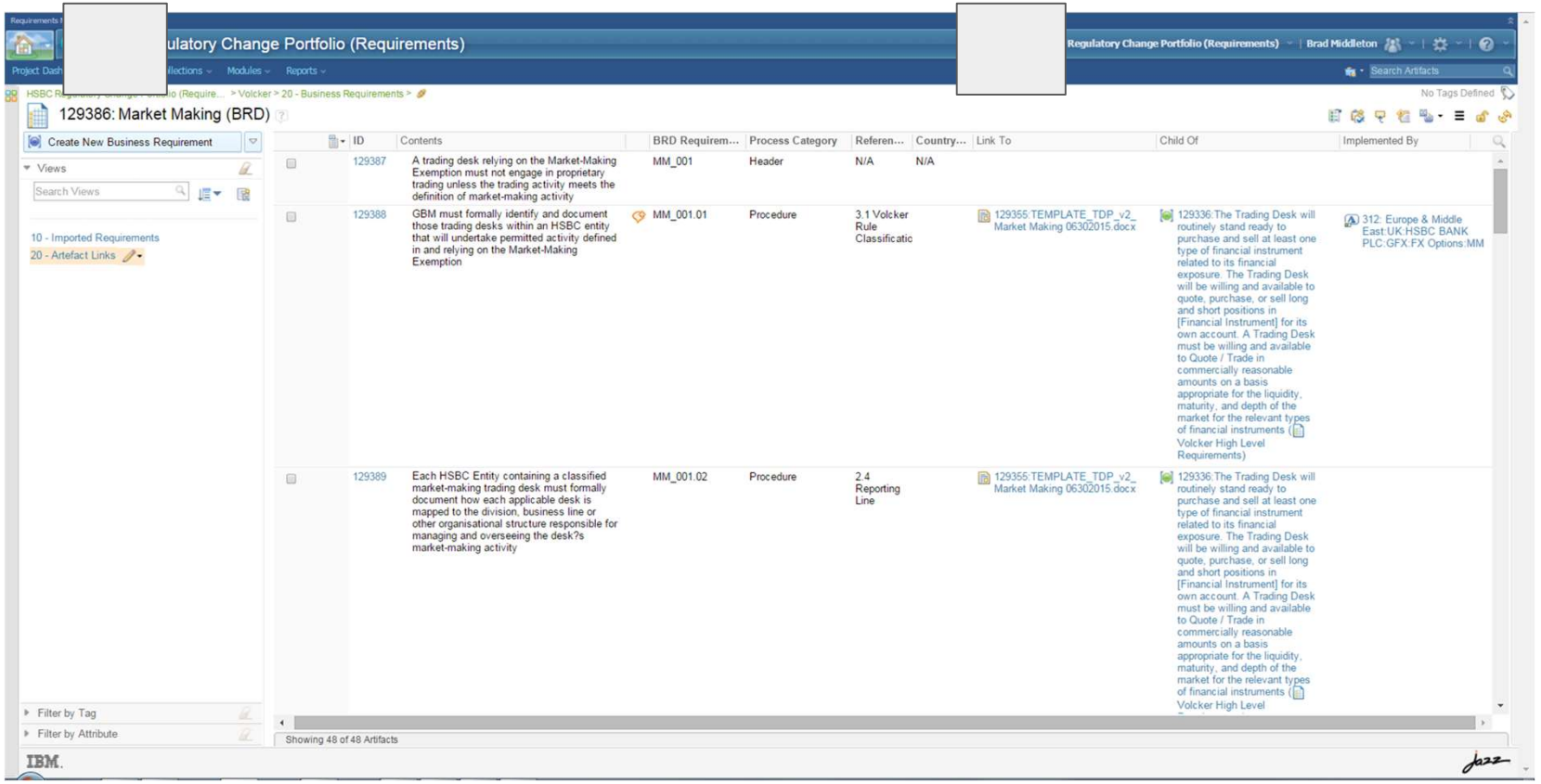


ID	Contents	Artifact Type	Trace A...	Business Requirements	Parent Of
129369	I. Background	Regulation	NO	No requirement required	
129364	The Dodd-Frank Act was enacted on July 21, 2010.1 Section 619 of the Dodd-Frank Act added a new section 13 to the Bank Holding Company Act of 1956 (?BHC Act?) (codified at 12 U.S.C. 1851) that generally prohibits any banking entity from engaging in proprietary trading or from acquiring or retaining an ownership interest in, sponsoring, or having certain relationships with a hedge fund or private equity fund (?covered fund?), subject to certain exemptions.2 New section 13 of the BHC Act also provides that a nonbank financial company designated by the Financial Stability Oversight Council (?FSOC?) for supervision by the Board (while not a banking entity under section 13 of the BHC Act) would be subject to additional capital requirements, quantitative limits, or other restrictions if the company engages in certain proprietary trading or covered fund activities.3	Regulation	NO	No requirement required	129374:Subsequent requirements address the required elements of the Compliance Program within the context of each specific, identified aspect of that Compliance Program (Volcker High Level Requirements)
129352	Section 13 of the BHC Act generally prohibits banking entities from engaging as principal in proprietary trading for the purpose of selling financial instruments in the near term or otherwise with the intent to resell in order to profit from short-term price movements.4 Section 13(d)(1) expressly exempts from this prohibition, subject to conditions, certain activities, including:	Regulation	NO	No requirement required	
129372	1 Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010).	Regulation	NO	No requirement required	
129376	2 See 12 U.S.C. 1851.	Regulation	NO	No requirement required	
129371	3 See 12 U.S.C. 1851(a)(2) and (f)(4). The Agencies note that two of the three companies currently designated by FSOC for supervision by the Board are affiliated with insured depository institutions, and are therefore currently banking entities for purposes of section 13 of the BHC Act. The Agencies are continuing to review whether the remaining company engages in any activity subject to section 13 of the BHC Act and what, if any, requirements apply under section 13.	Regulation	NO	No requirement required	
129375	Permitted market making-related activities. The prohibition contained in ll.3(a) does not apply to a banking entity?s market making-related activities conducted in accordance with this paragraph (b).	Regulation	YES	Requirement written	129367:The Trading Desk will not engage in proprietary trading unless the trading activity meets the definition of Market Making-Related Activity. (Volcker High Level Requirements)
129368	The trading desk that establishes and manages the financial exposure routinely stands ready to purchase and sell one or more types of financial instruments related to its financial exposure and is willing and available to quote, purchase and sell, or otherwise enter into long and short positions in those types of financial instruments for its own account, in commercially reasonable amounts and throughout market cycles on a basis appropriate for the liquidity, maturity, and depth of the market for the relevant types of financial instruments;	Regulation	YES	Requirement written	129336:The Trading Desk will routinely stand ready to purchase and sell at least one type of financial instrument related to its financial exposure. The Trading Desk will be willing and available to quote, purchase, or sell long and short positions in [Financial Instrument] for its own account. A Trading Desk must be willing and available to Quote / Trade in commercially reasonable amounts on a basis appropriate for the liquidity, maturity, and depth of the market for the relevant types of financial instruments (Volcker High Level Requirements)
129363	The financial instruments each trading desk stands ready to purchase and sell in accordance with paragraph (b)(2)(i) of this section;	Regulation	YES	Requirement written	129374:Subsequent requirements address the required elem of the Compliance Program within the context of each specif identified aspect of that Compliance Program (Volcker High Level Requirements)
129381	The actions the trading desk will take to demonstrably reduce or otherwise significantly mitigate promptly the risks of its financial exposure consistent with the limits required under paragraph (b)	Regulation	YES	Requirement written	129366:The Compliance Program must address the financial instruments each Trading Desk stands ready to purchase and

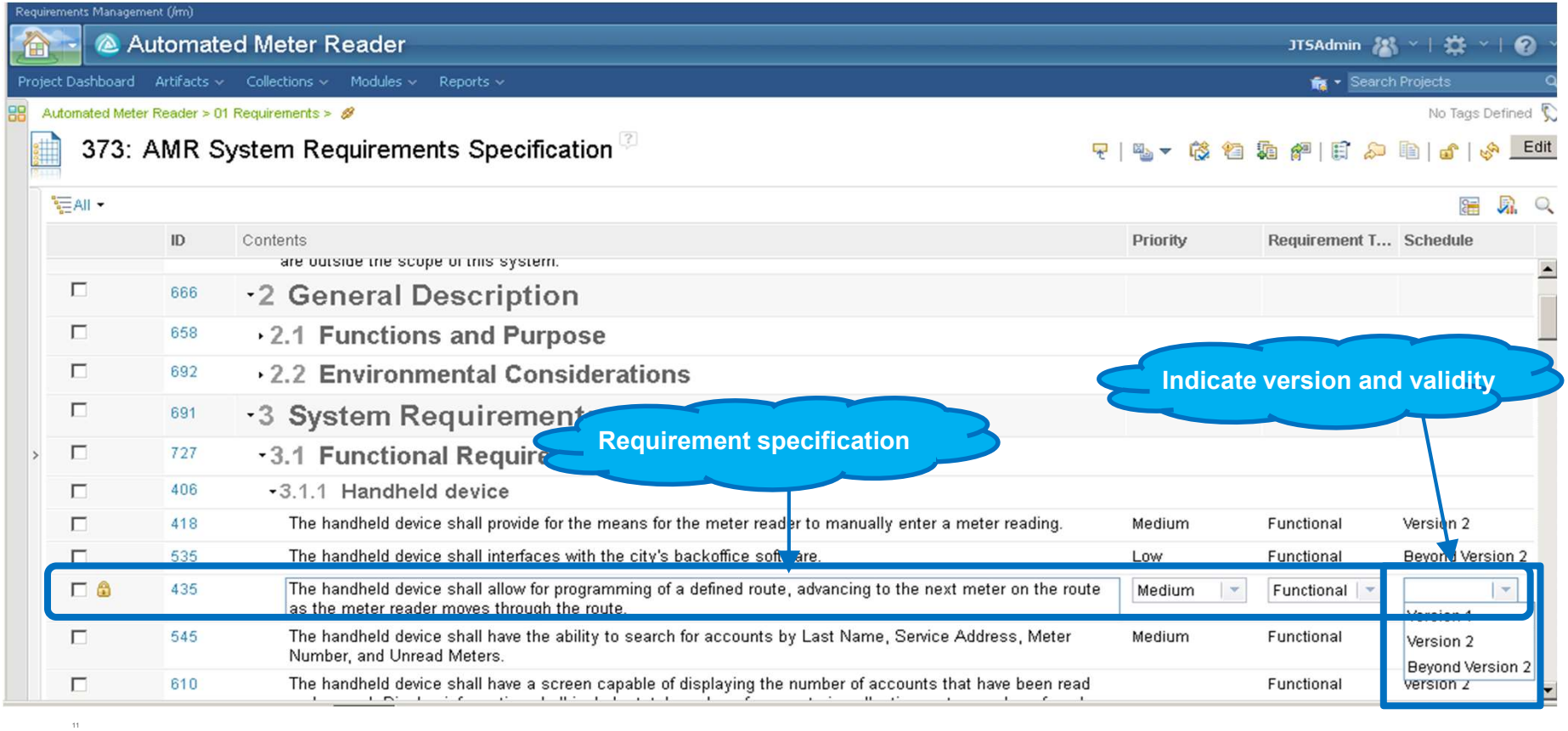
Regulations > High Level Requirement > Business Requirements



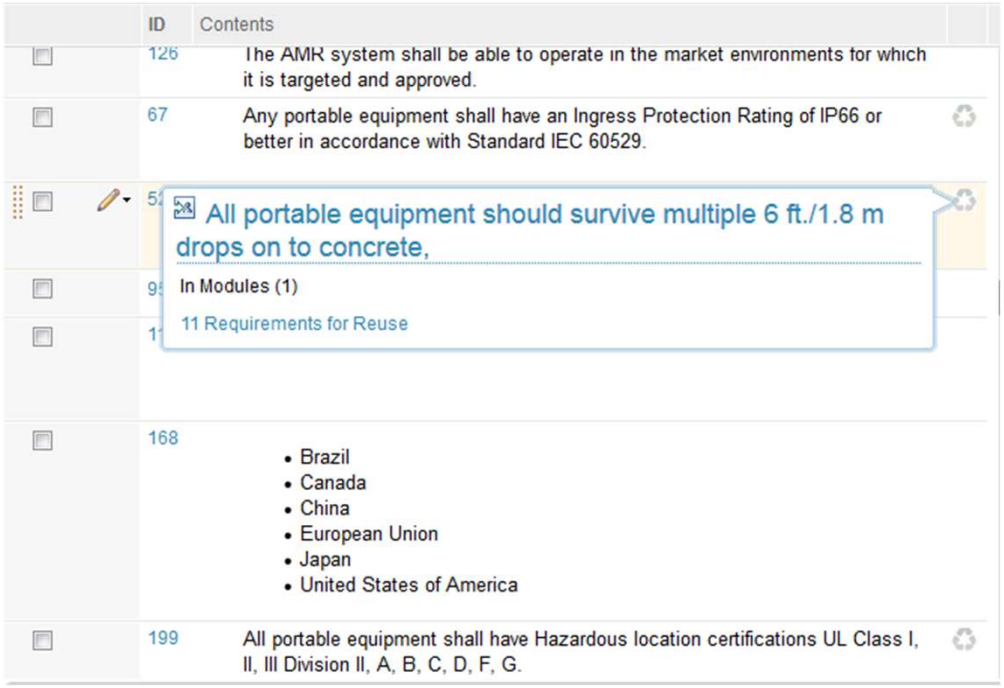
Business Requirements to Deliverables and Implementation Tracker



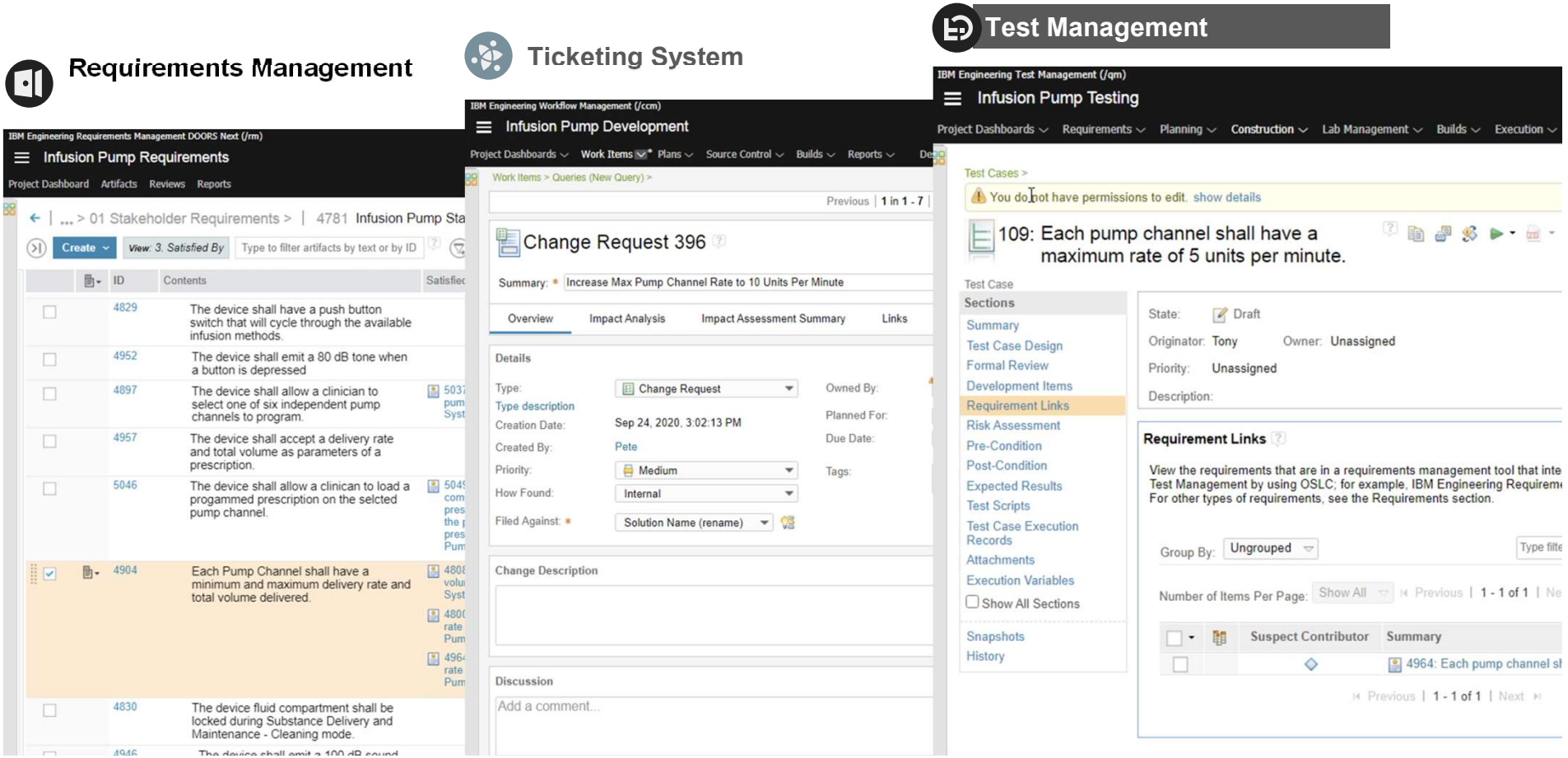
Review version and validity of your requirements to ensure the right delivery



Reduce the time needed to define requirements by reusing common norms



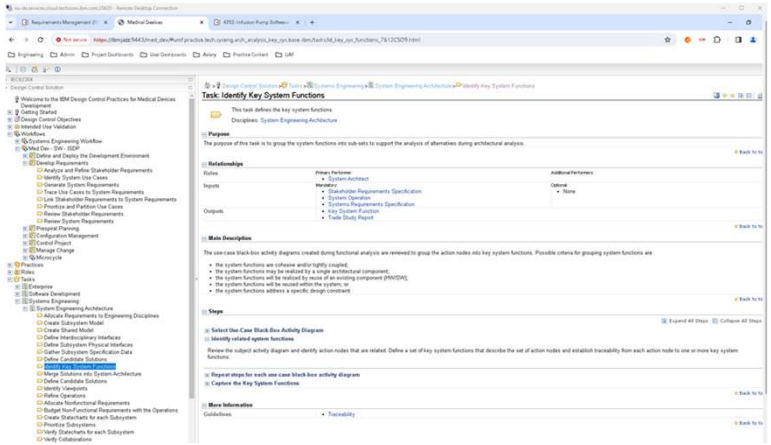
Norms can be related /linked to many engineering domains

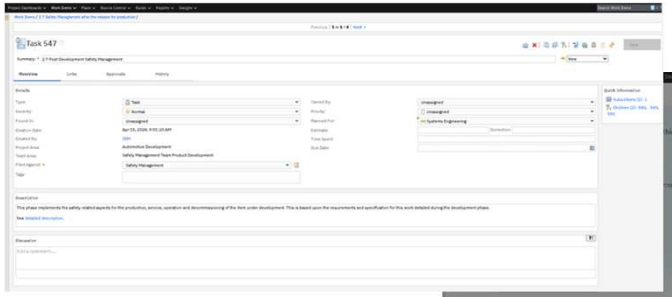


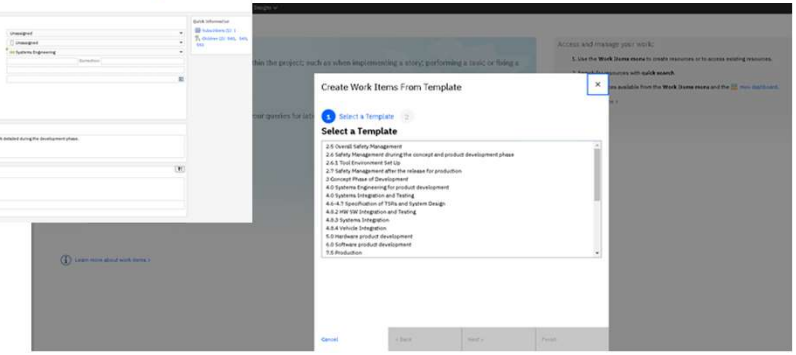
Linking to a Process according to Norm

Generation of Work Items links to process

Proof of the correct process
step implementation

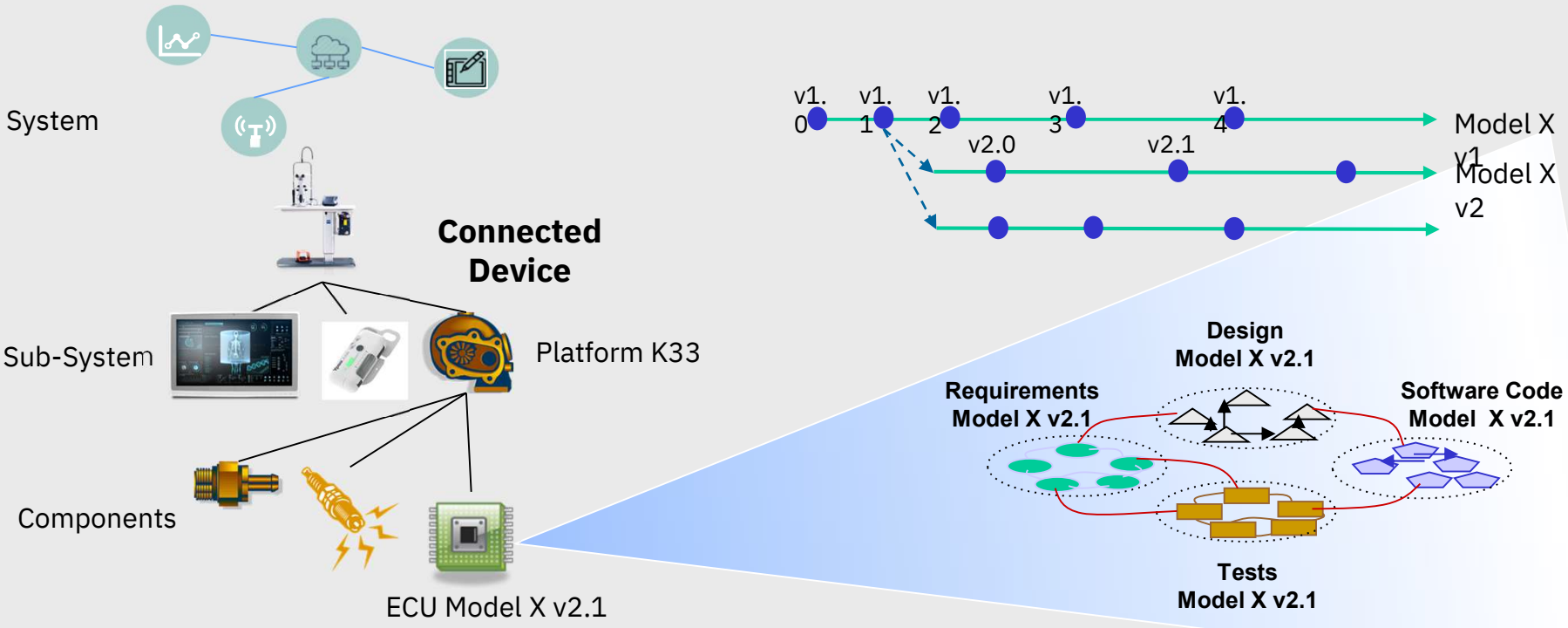






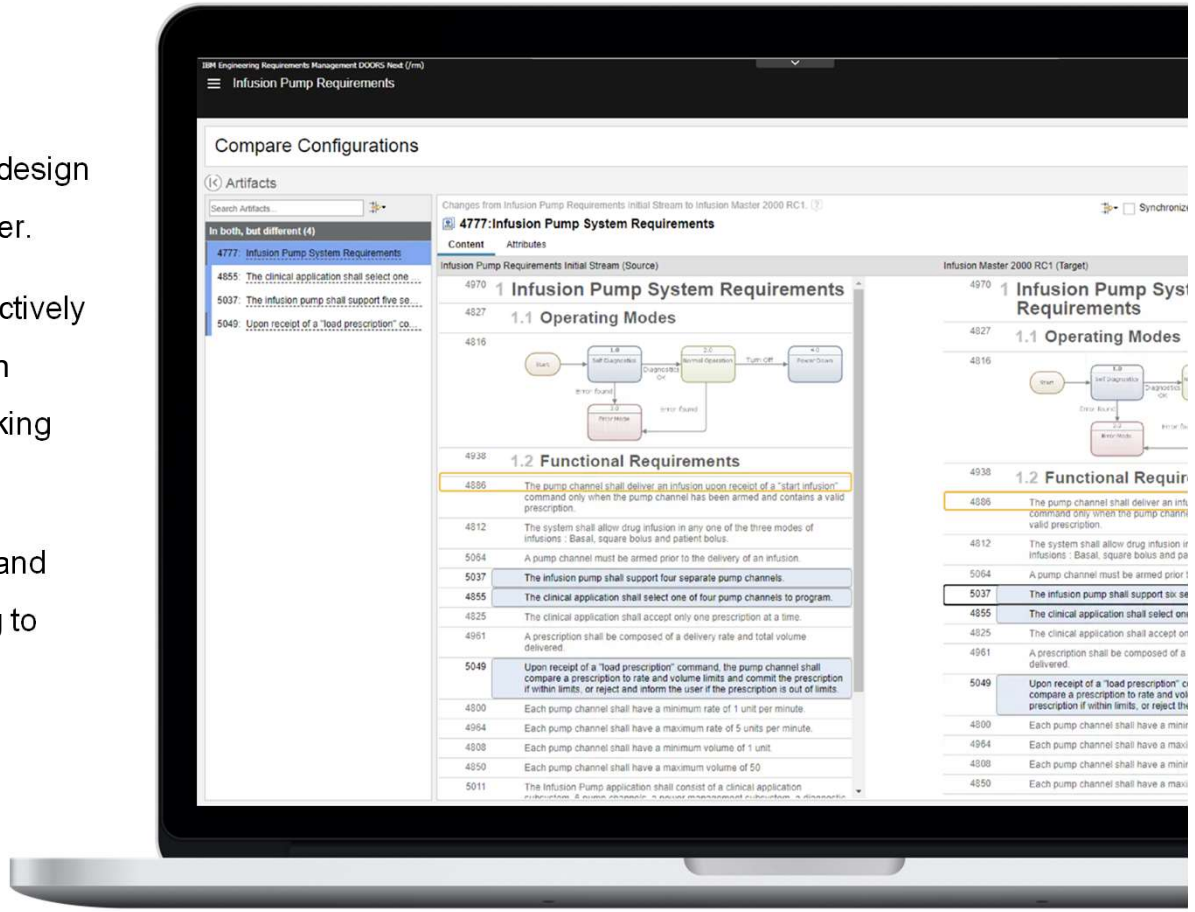
Manage Complexity and Reuse

Keep all Engineering Artifacts under Version Control

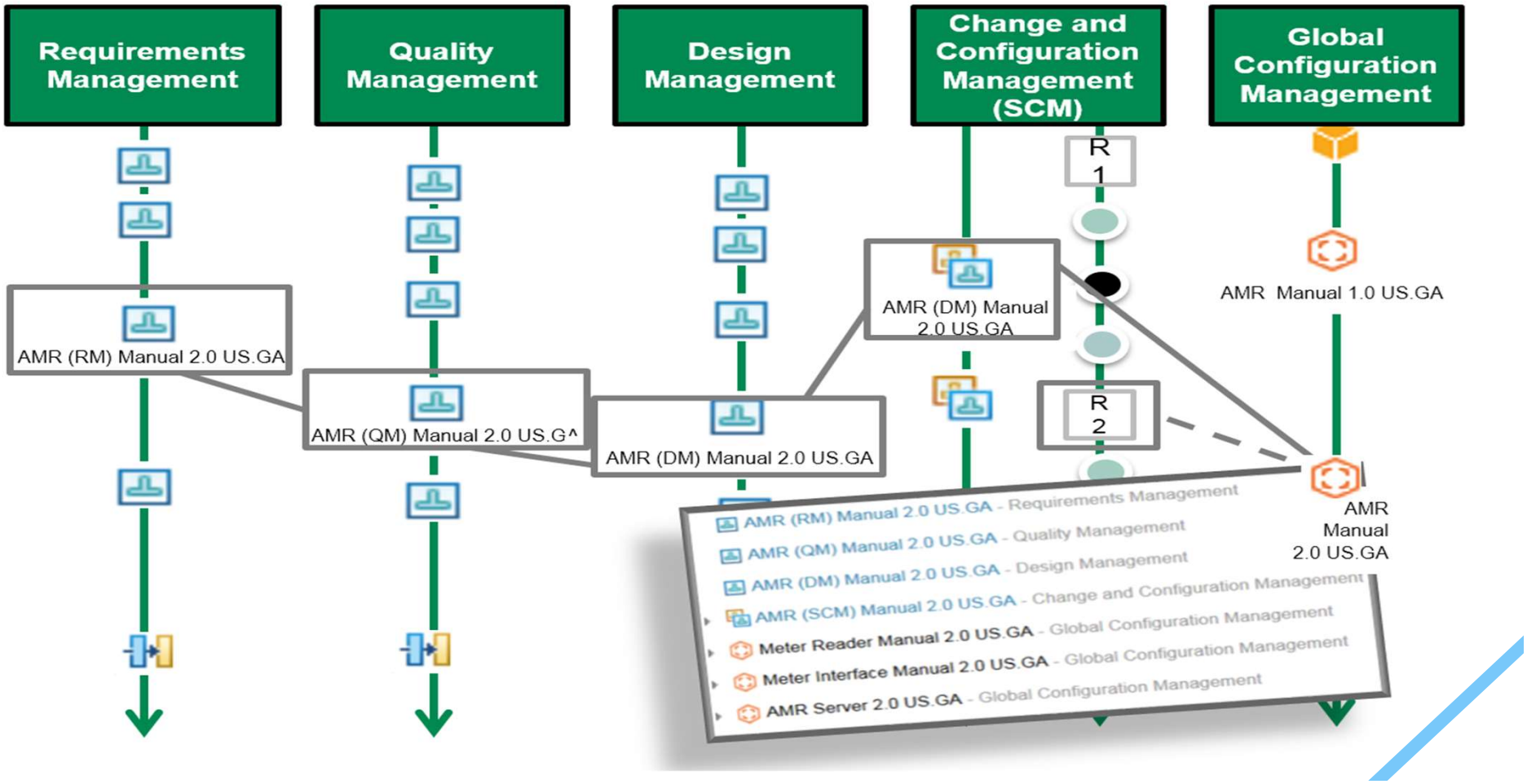


Compare Norms

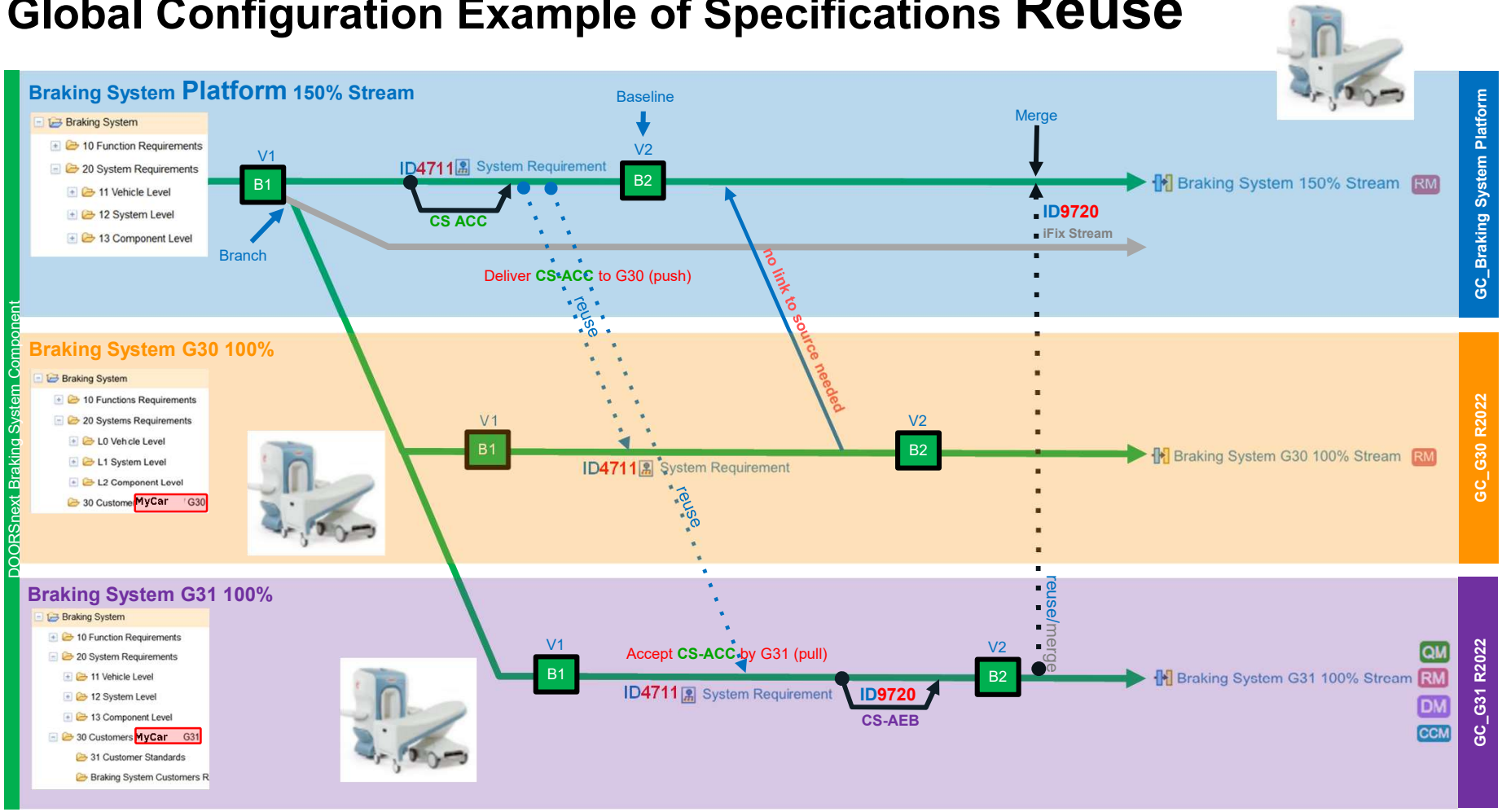
- ✔ Innovate faster through Reuse: Evolve your design instead of reinventing the wheel over and over.
- ✔ Introduce efficiency with agile practices: effectively orchestrate agile practices across teams with complete support for agile planning and tracking
- ✔ Early verification with model-based design: Leverage design model to virtually optimize and verify product architecture before committing to implementation



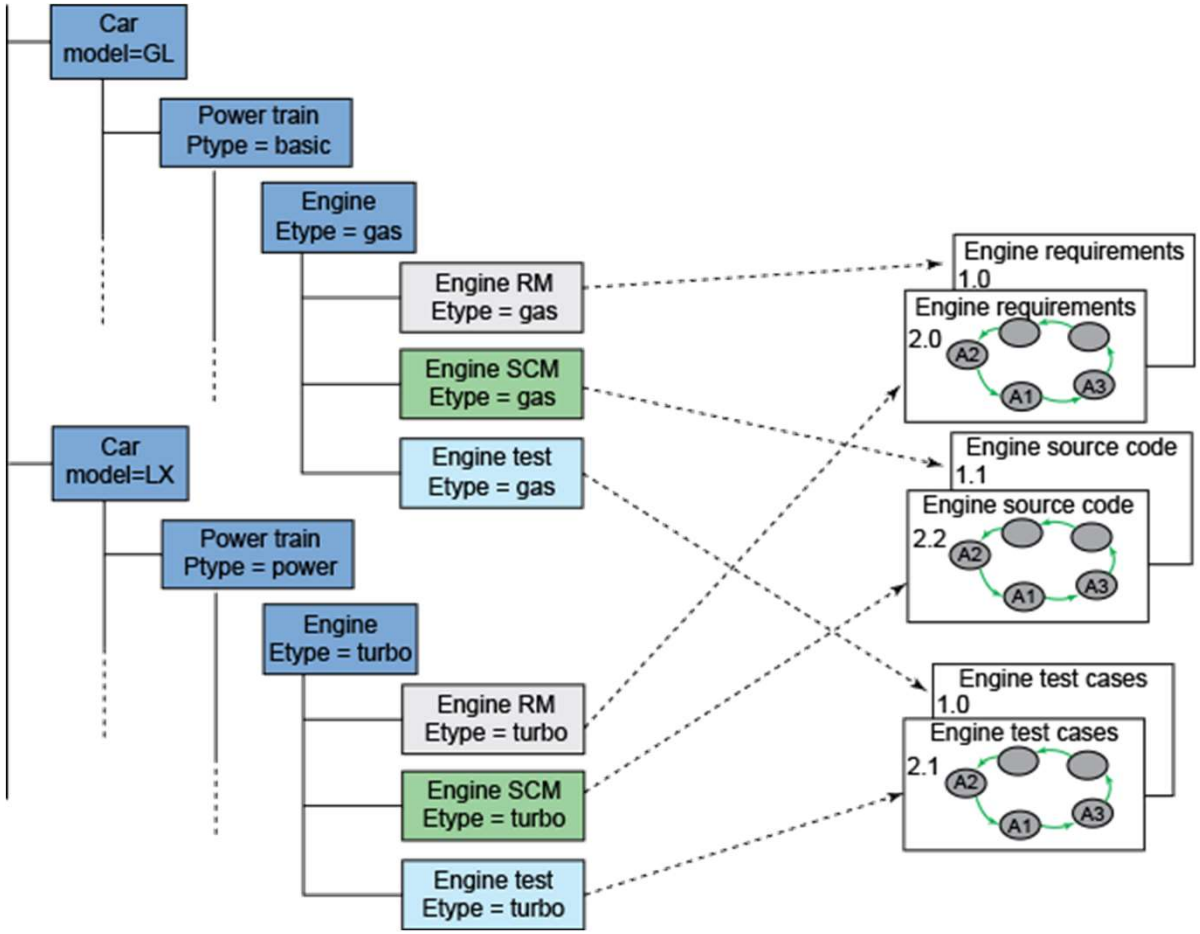
Global Configuration Management

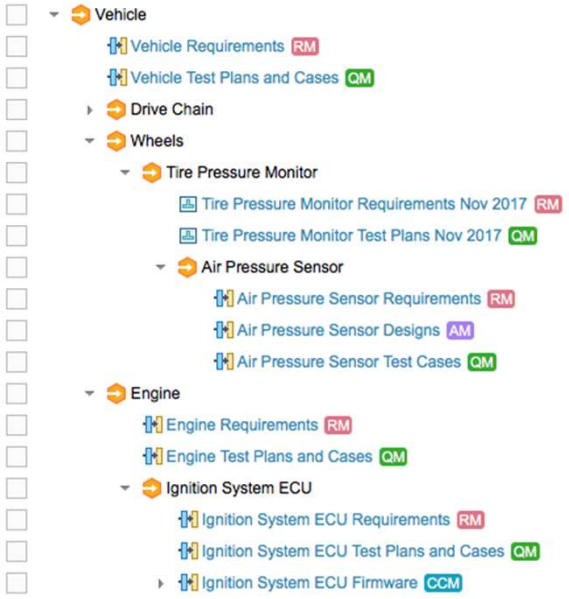


Global Configuration Example of Specifications **Reuse**



Global Configurations Example





Key lessons learned / project risks

Inefficient Traceability and Documentation management

- Inefficiencies created by sending emails to request data, organising and attending update meetings and making follow-up phone calls.
- Manual management of traceability data is difficult and error-prone with difficulties in immediately pointing out what was missing and to reconstruct End-2-End regulatory compliance.
- Difficult to maintain an audit trail of decisions.
- Managing versions and revisions of artifacts manually is challenging and error-prone.

Reporting

- Difficult to Obtain
  - Information can be distributed across multiple share points, geographies, spreadsheets and difficult to collate.
- Unreliable and Costly
  - Reporting is sometimes erroneous, incomplete or obsolete as a result of consolidation errors and delays.
  - Consolidated manual report had limited scope for real time analysis or historical audit
  - Costs were incurred maintaining teams of individuals to collate, analyze and document reporting data.

Ownership and execution tracking

- Difficult to identify and track documents statuses and ownerships.
- Manual processes required to assign and track progress on Project artifacts.

DEMO

THANK
YOU