



爱开发 重创新 更智慧

Innovate2011

IBM Rational 软件创新论坛



DOORS与PDM系统的整合之道

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IBM CDL PSF Team



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- ➔ 典型需求汇总
 - IBM的解决方案
 - 国内外参考案例



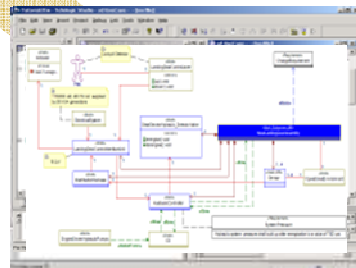
产品研发领域所涉及的业务专业



需求管理

■ 捕获需求

■ 将需求与系统模型关联

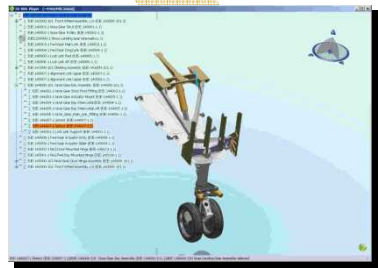


系统建模

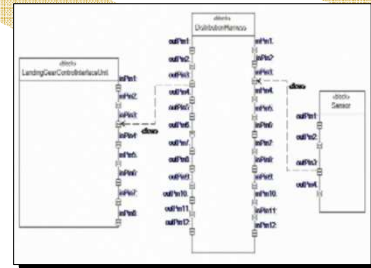
■ 改进模型，模拟并验证系统架构

■ 架构分解并最终分配到一个独立开发单元

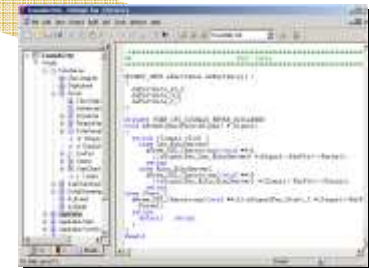
■ 提供变更管理及需求与系统架构、CAD模型之间的关联管理



机械设计

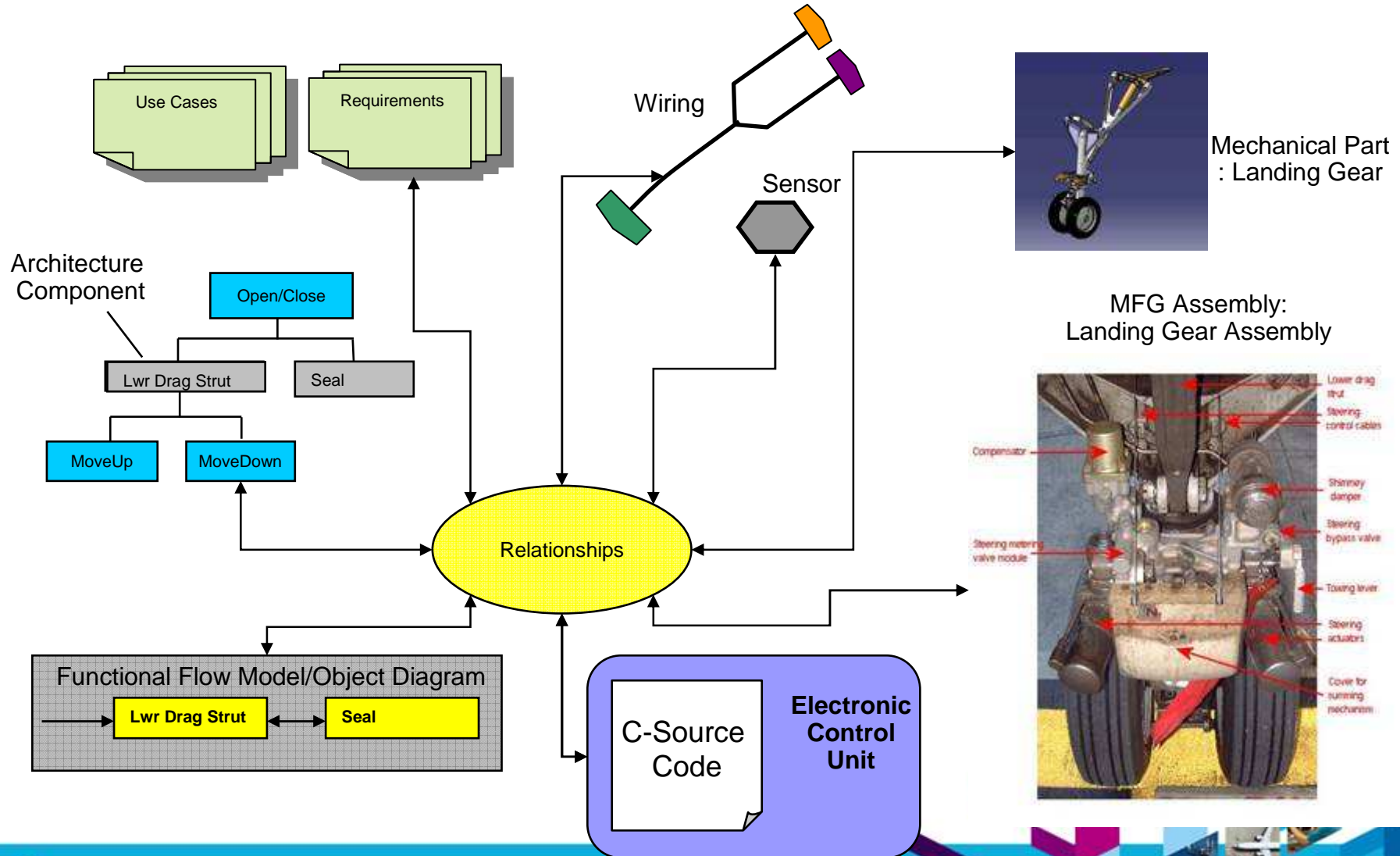


电子设计



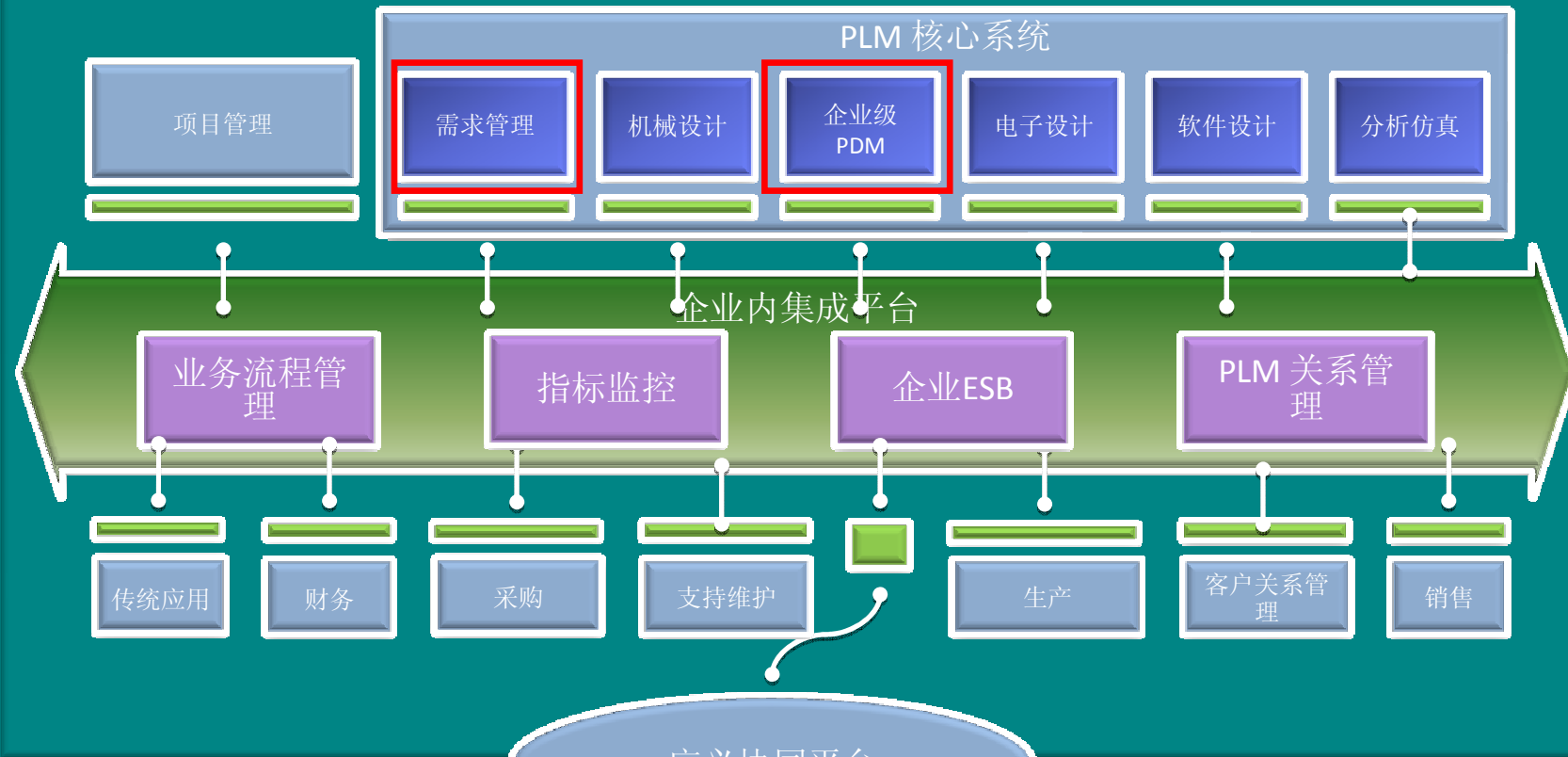
嵌入式软件开发

示例：各专业间数据关联关系

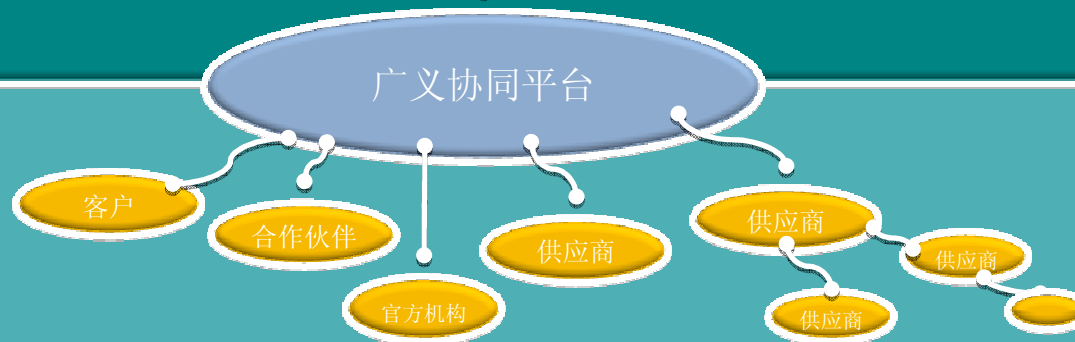


DOORS/PDM在系统集成中的位置

企业内系统集成



虚拟企业范围内集成



DOORS/PDM集成典型需求(续)

序号	需求描述
1	用户能够将DOORS中的文档基线自动发布到PDM系统以启动签审流程
2	在用户将DOORS中的文档基线发布到PDM系统后，用户就不能更改对应的DOORS文档，即文档是被锁定至只读状态。
3	在文档被锁定后，只有用户需要输入已批准的ECP号，才能够获得对应的编辑权限（如果他/她原来就有编辑权限）。
4	用户能够在DOORS中查询文档基线在PDM系统的签审状态。



研发领域主要系统集成典型需求

序号	需求描述
1	实现对需求、系统建模、产品结构、CAD数据之间对应关系的管理。
2	基于上述数据关系管理，为用户展现统一数据视图，并根据统一视图输出文档。
3	基于上述数据关系管理，实现跨系统的基线管理。
4	基于上述数据关系管理，实现变更影响分析、变更过程的跟踪追溯、变更落实情况的检验等。

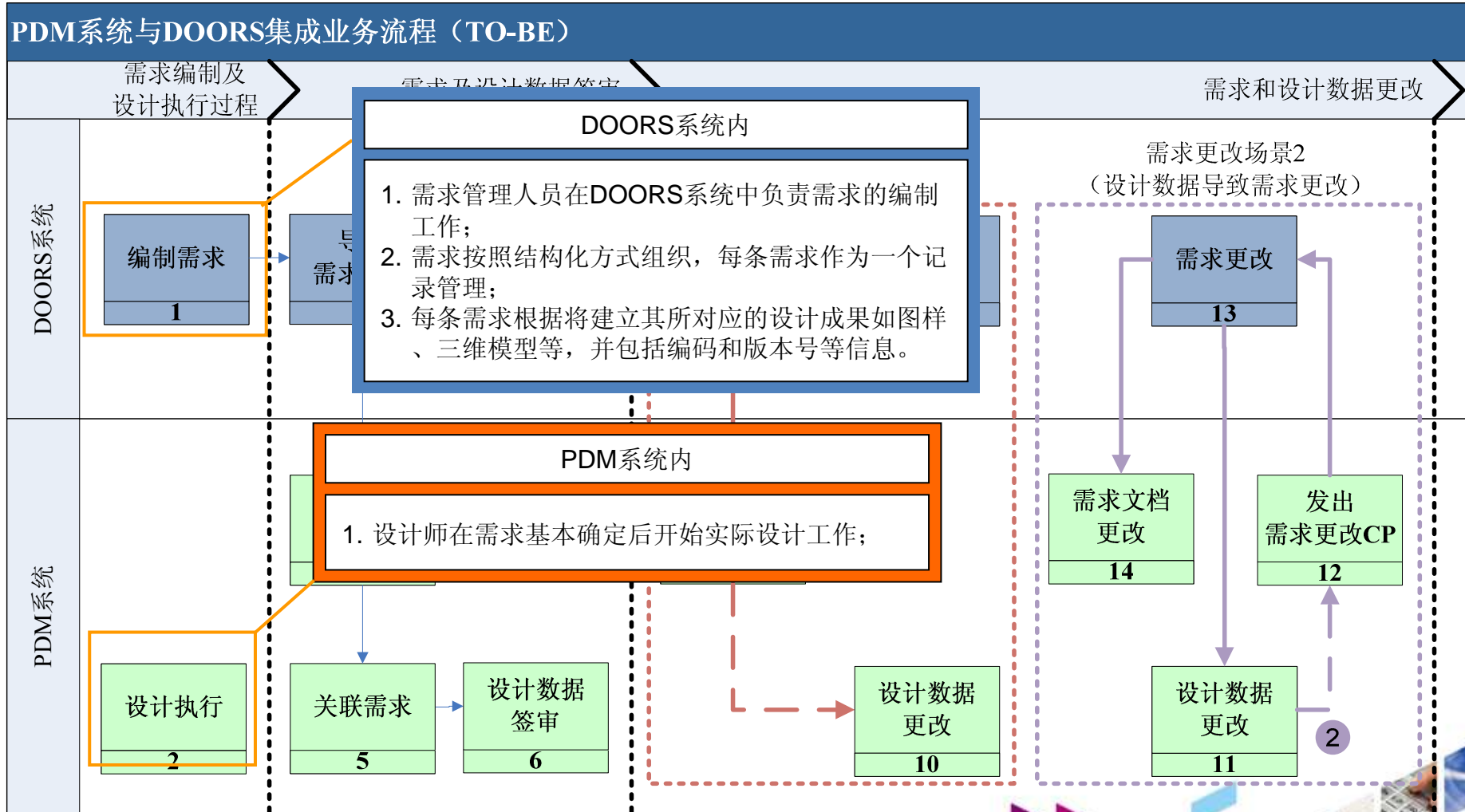


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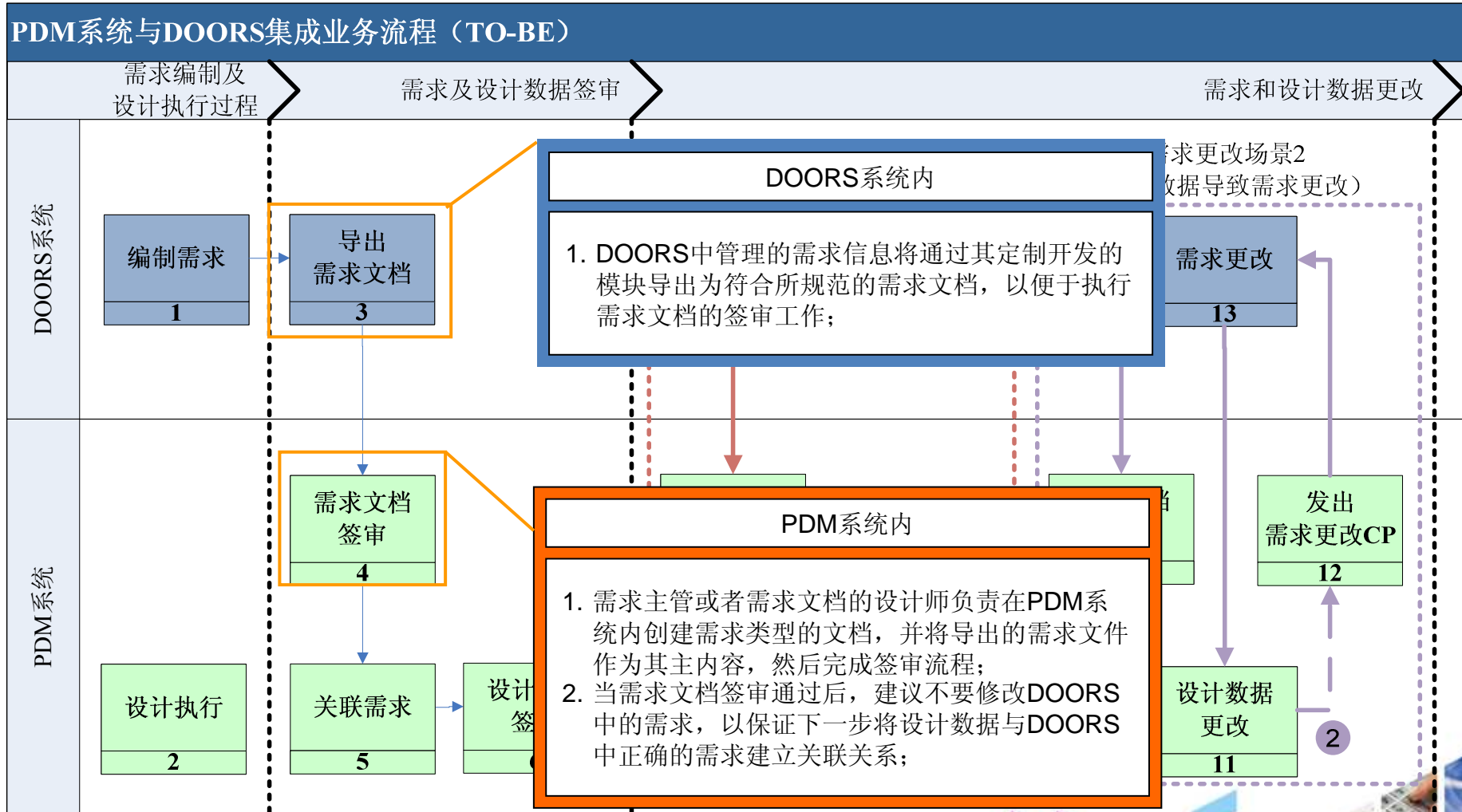
- 典型需求汇总
- IBM的解决方案
 - ➡ - 基于文档的集成
 - 基于需求条目的集成
- 国内外参考案例



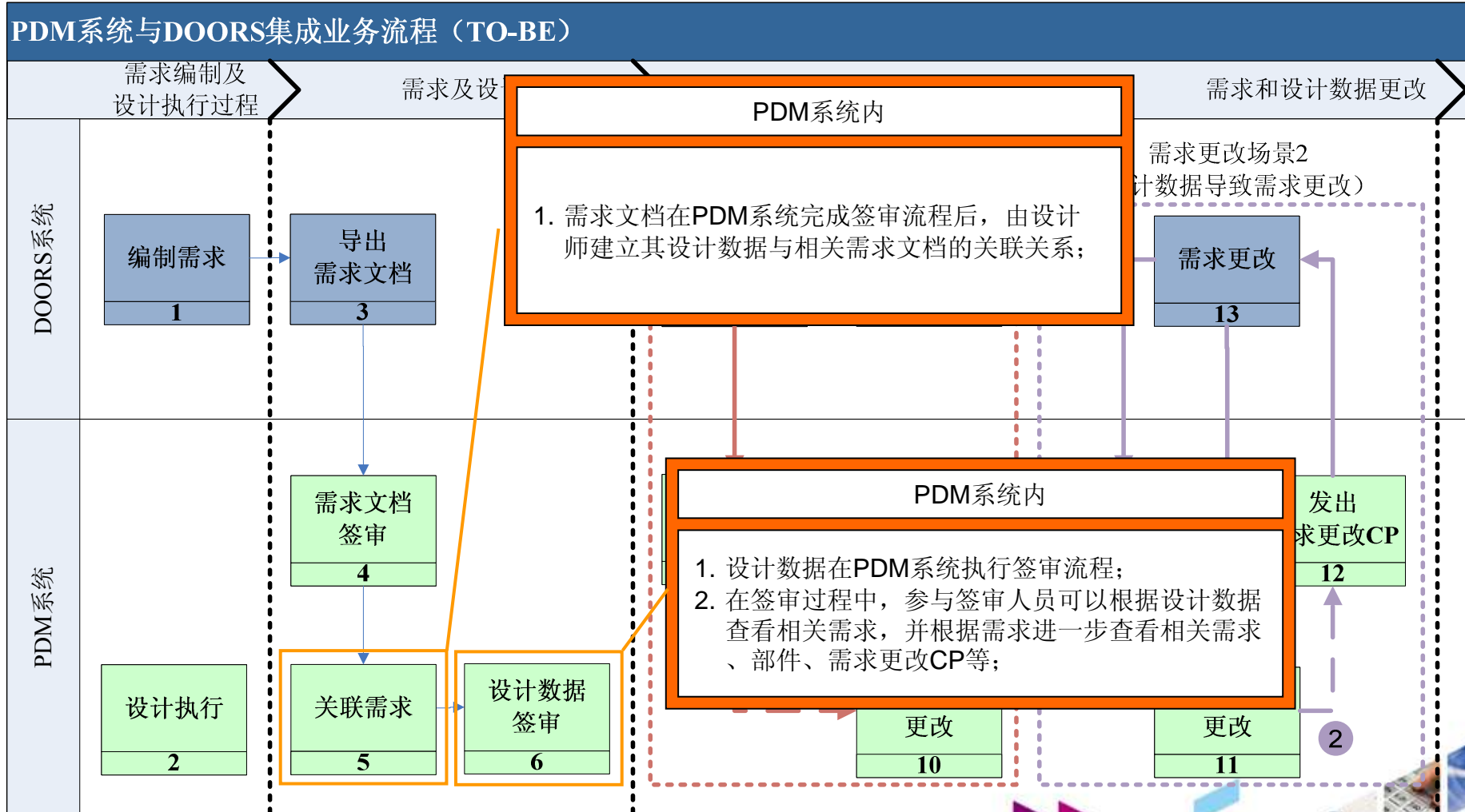
PDM与DOORS集成业务流程(一)



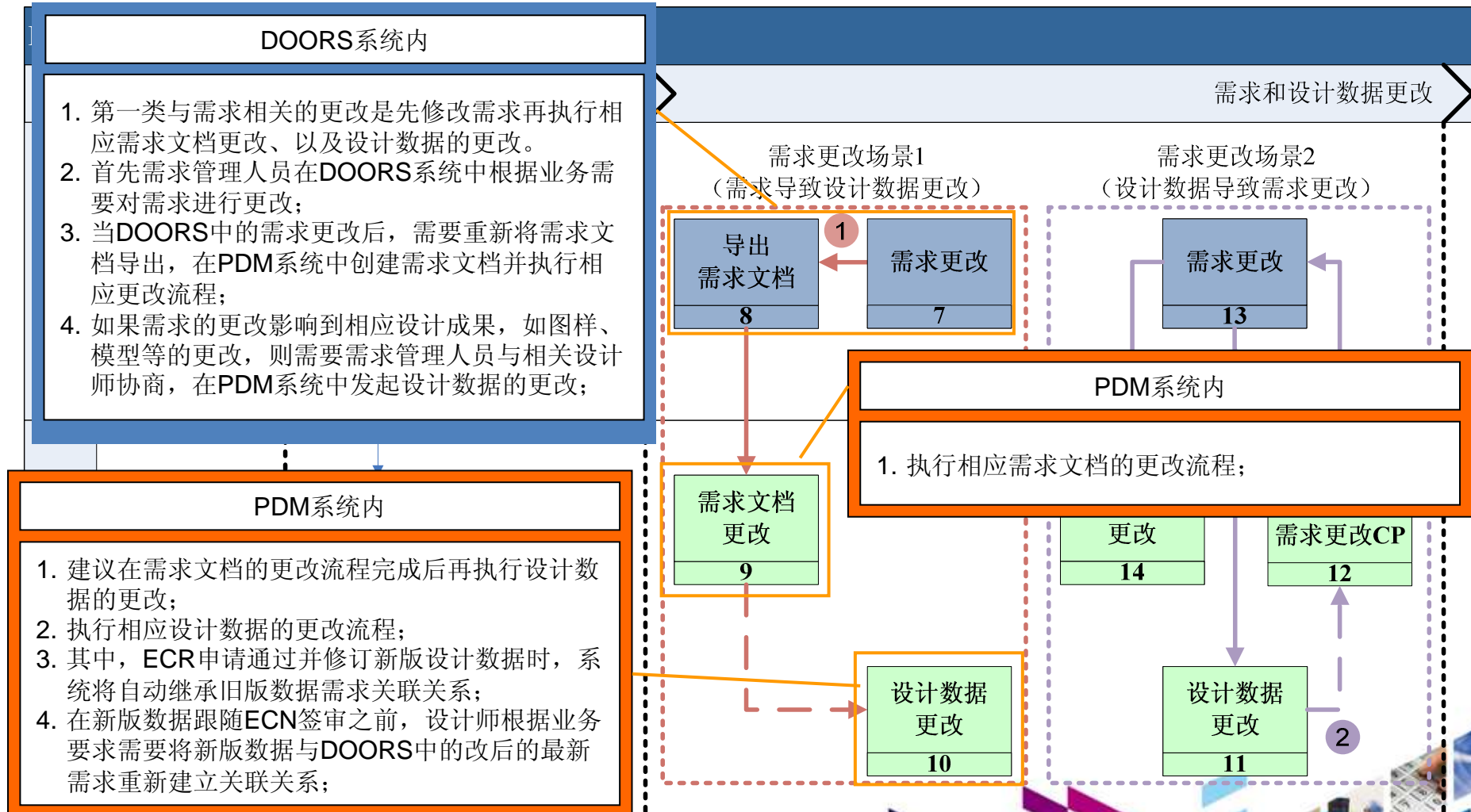
PDM与DOORS集成业务流程(二)



PDM与DOORS集成业务流程(三)

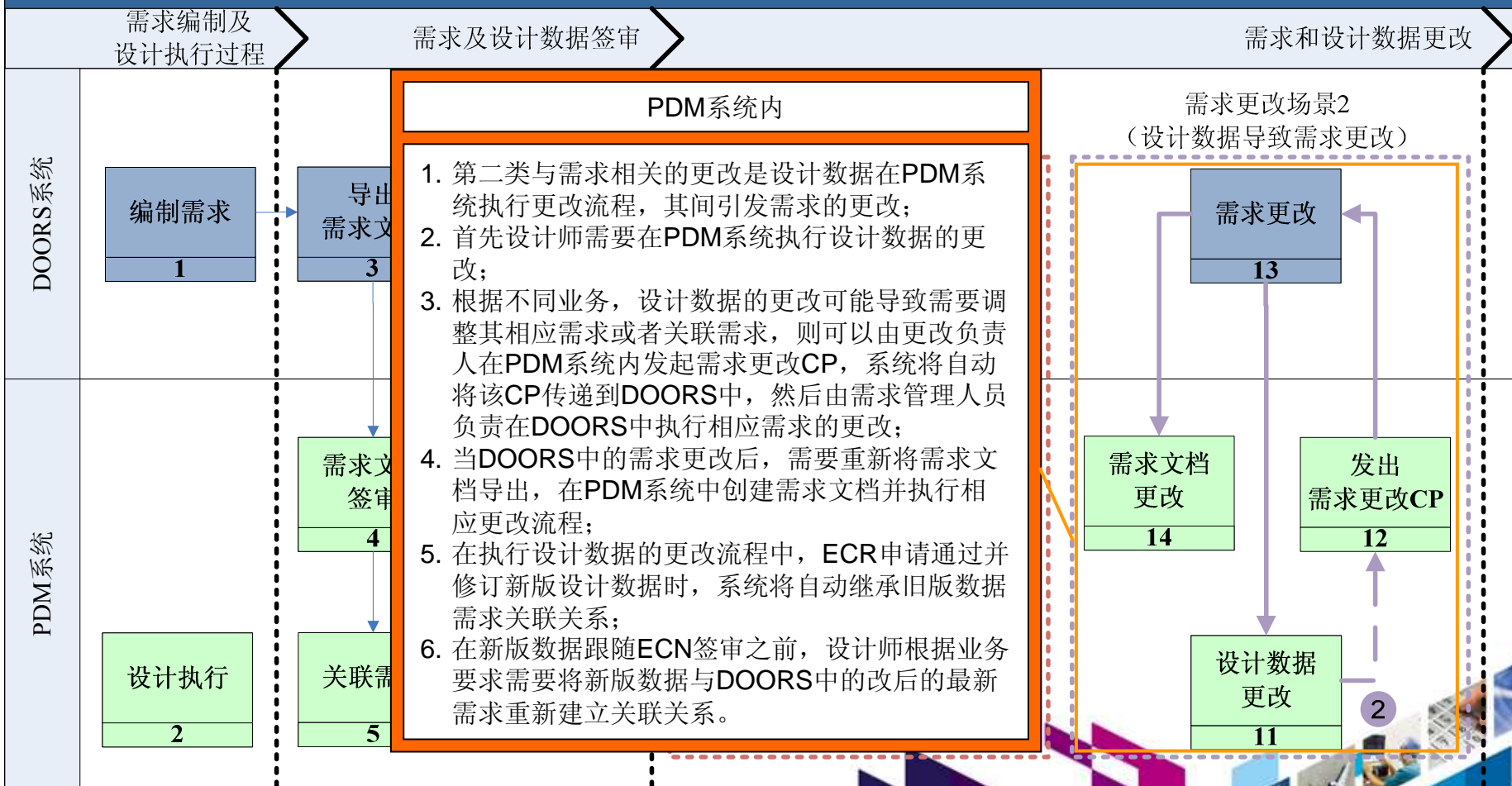


PDM与DOORS集成业务流程(四)




PDM与DOORS集成业务流程(五)

PDM系统与DOORS集成业务流程 (TO-BE)



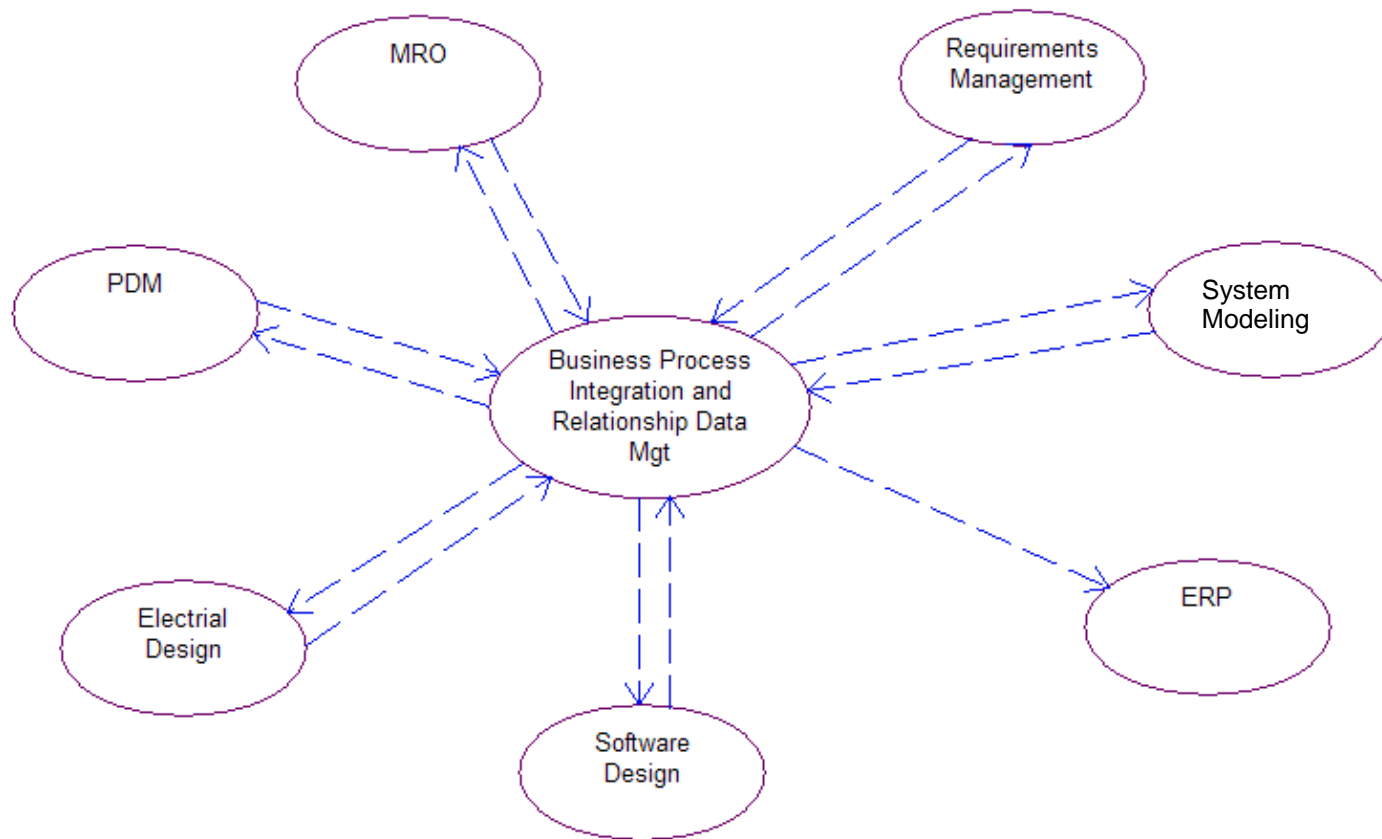
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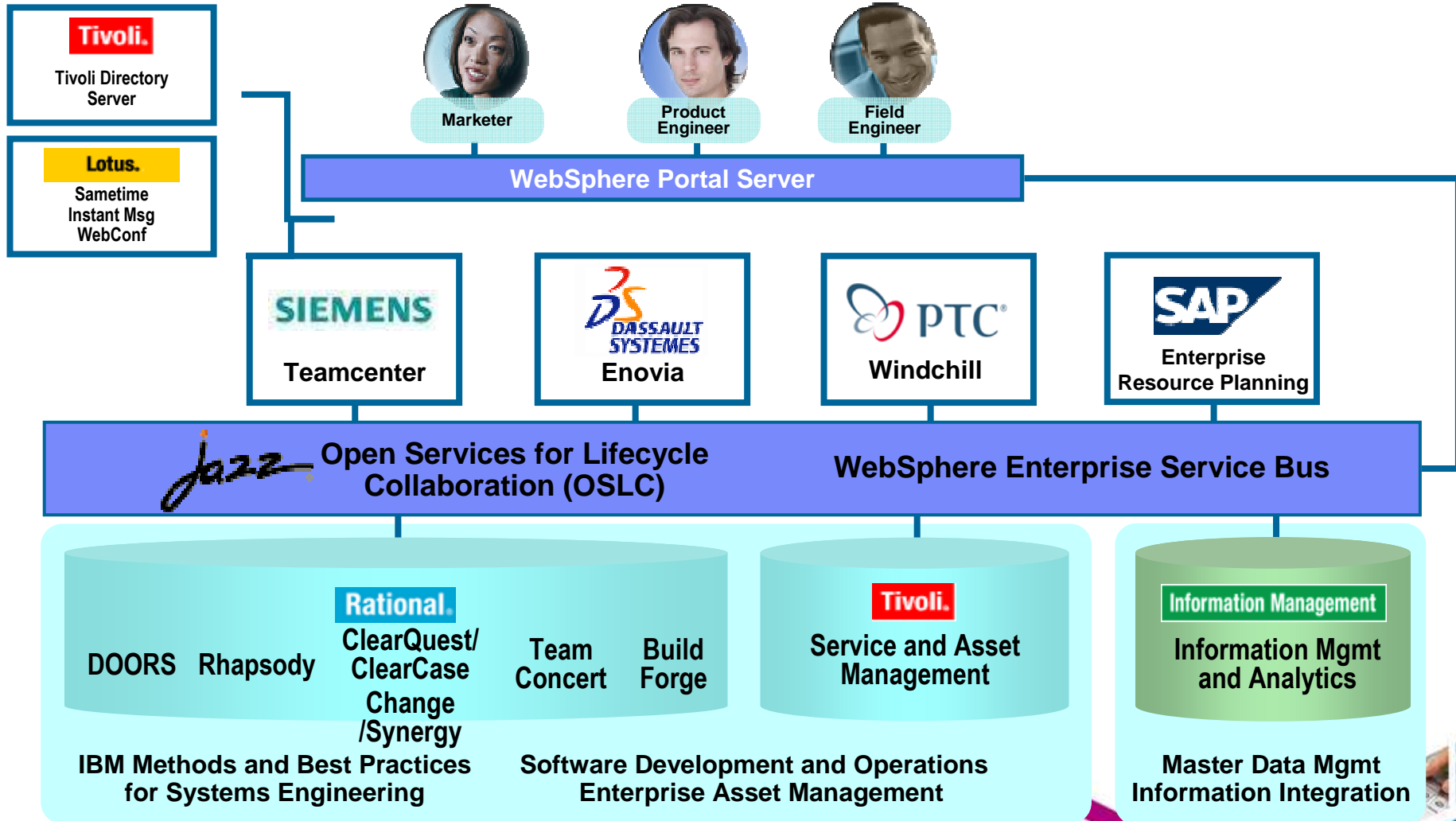


各领域数据关系管理

Systems Engineering Enterprise Integration

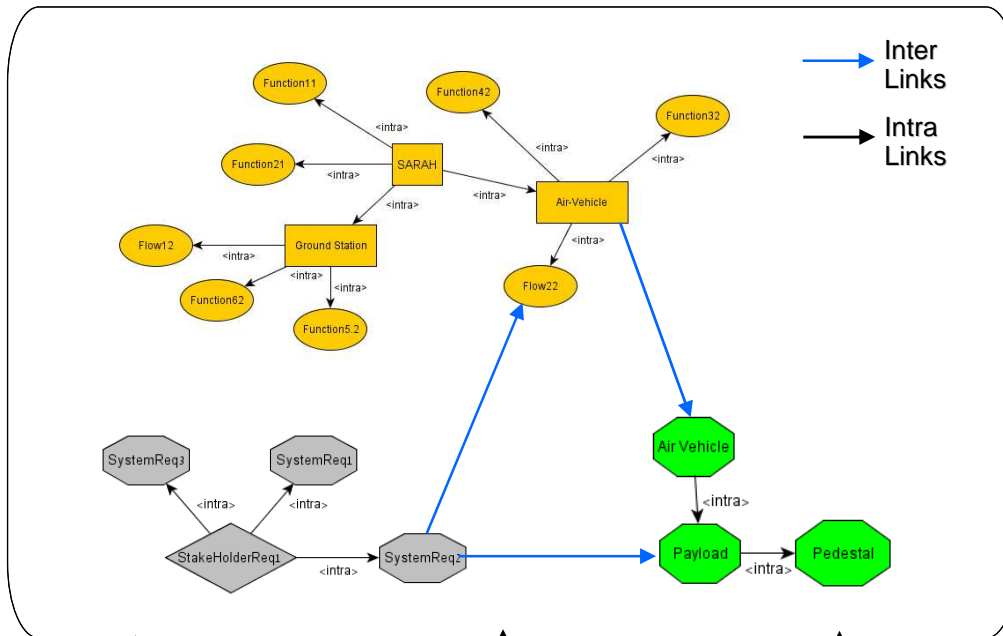


集成方案系统架构

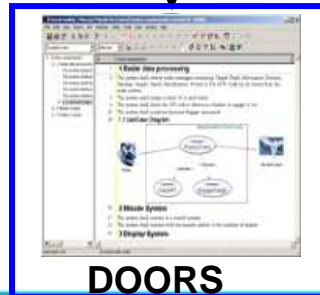
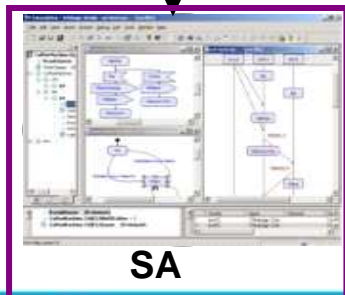


工程数据关系管理—管理双向关系

Relationship Hub

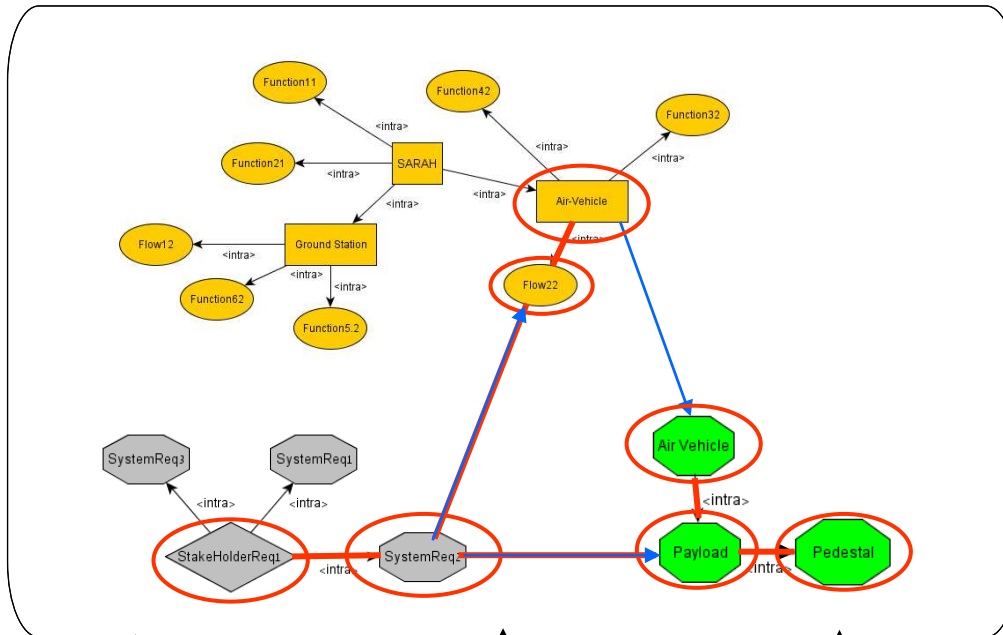


- 异构数据统一视图
- 基于索引数据的双向关系管理，避免数据复制导致的同步等问题
- 统一用户界面

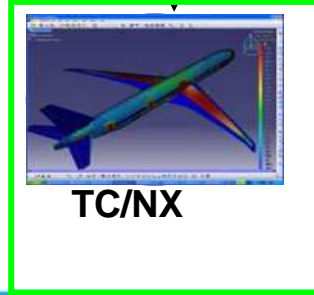
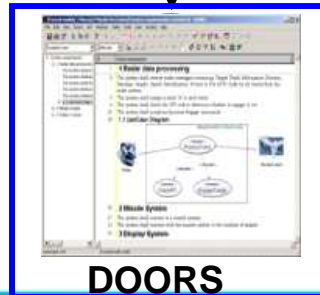
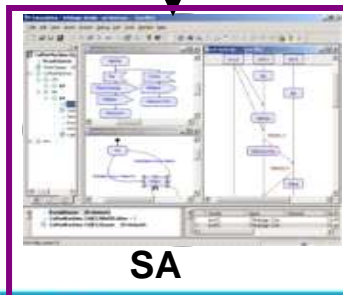


工程数据关系管理—变更影响分析

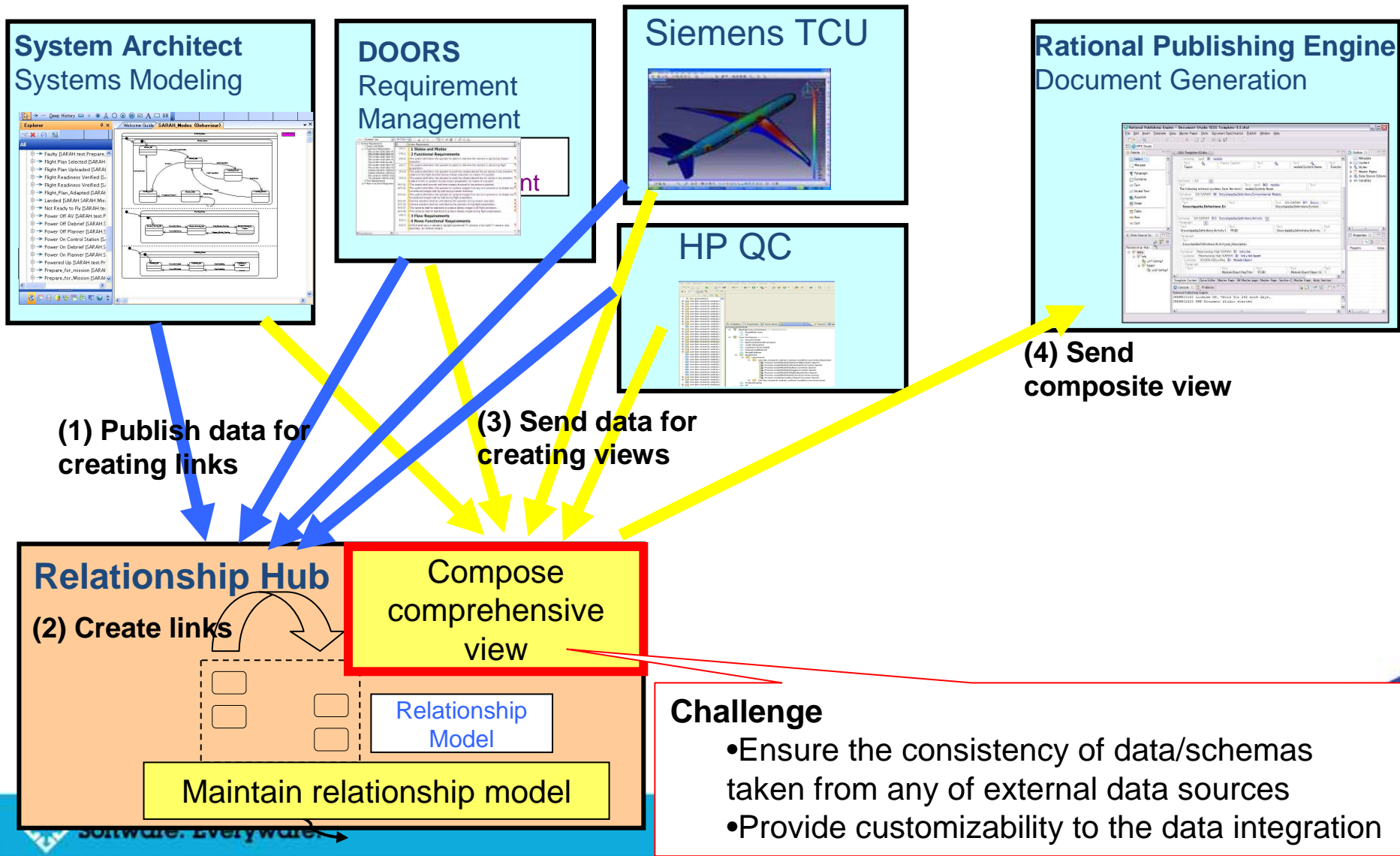
Relationship Hub



- The ability to identify all related elements that could potentially be impacted by a change in an Elements
 - Upstream impact analysis
 - Downstream impact analysis
 - Distance
 - User define filters
e.g. select all Test cases related to a SA Model Element(s)
- Uses advance visualization
- Reduces irrelevant elements in the impact graph – base on set of heuristics



工程数据关系管理—文档输出



(1) Publish data for creating links

(3) Send data for creating views

(4) Send composite view

Relationship Hub

(2) Create links

Compose comprehensive view

Relationship Model

Maintain relationship model

Challenge

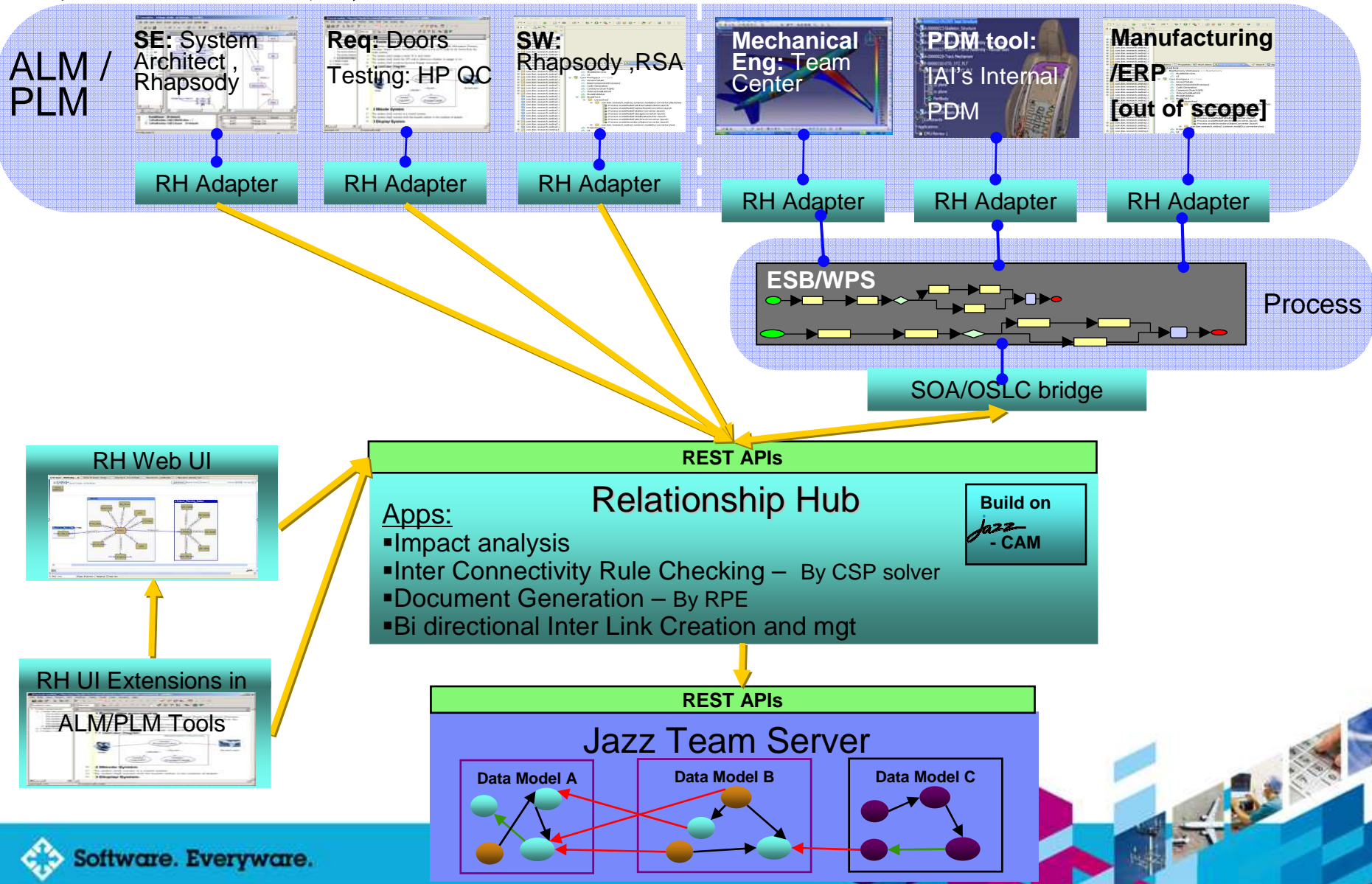
- Ensure the consistency of data/schemas taken from any of external data sources
- Provide customizability to the data integration

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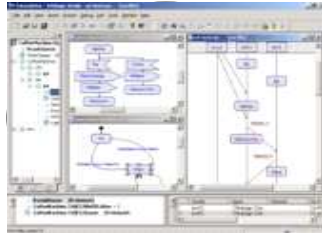
某知名制造企业



某知名制造企业

Relationship Hub:

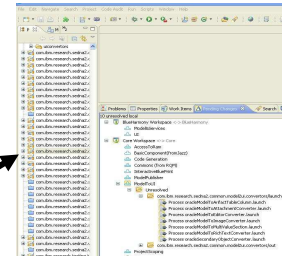
1. Cross tool models/artifacts integrated view
2. Cross tool models/artifacts bidirectional relations
3. Cross tool search and query
4. Impact analysis
5. Connectivity rules checking via constraint satisfaction technology
6. Cross tool reports and documents generation
7. Cross domain baselining



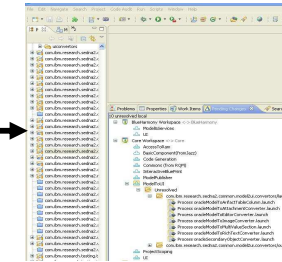
SA



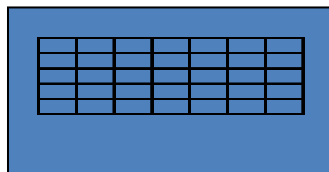
DOORS



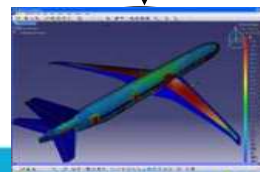
Clearcase /RTC



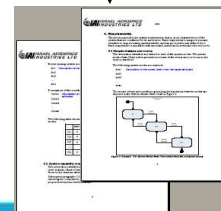
Rhapsody



Wiring/
messaging



TCE/NX



Reports/ RPE



PDM
TCE/Mantra