

e=MSC<sup>x</sup>

ENGINEERING. EDUCATION. ENTERPRISE.  
**2009 VPD**  
VIRTUAL  
PRODUCT  
DEVELOPMENT  
CONFERENCE

# Simulation and PLM Interoperability using SimMgr and PROSTEP OpenPDM

## Cross Domain Integration and Exchange in Real Time

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# Presentation Overview



- This presentation will provide an example of real world integration projects between the domains of simulation and engineering. By using proven tools based on open ISO standards, dramatic results in time savings, accuracy, and other efficiencies will be achieved.
- Our example will show a joint project between MSC and PROSTEP for an automotive OEM for the integration of SimManager and the OEM's PLM Environment.
- The first project phase of this project (the integration of SimManager with VPM) was successfully concluded in April. Lessons learned from this project and best practices will be provided to help with planning and performing future SimManager integration projects in a distributed and heterogeneous PLM environment

WE INTEGRATE  
**YOUR PLM WORLD**

- Since it's foundation in 1993, **PROSTEP** has become a leading provider of turn-key solutions for engineering processes in the areas of **product data integration, data migration and supply chain communication** for manufacturers and suppliers.
- Interoperability between PDM to (PDM, CAD, ERP, CAE, Legacy) **product structure interchange and conversion.**
- PROSTEP is a major driving force behind STEP and OMG PLM Services adoption throughout Europe and the US.

# Company Overview



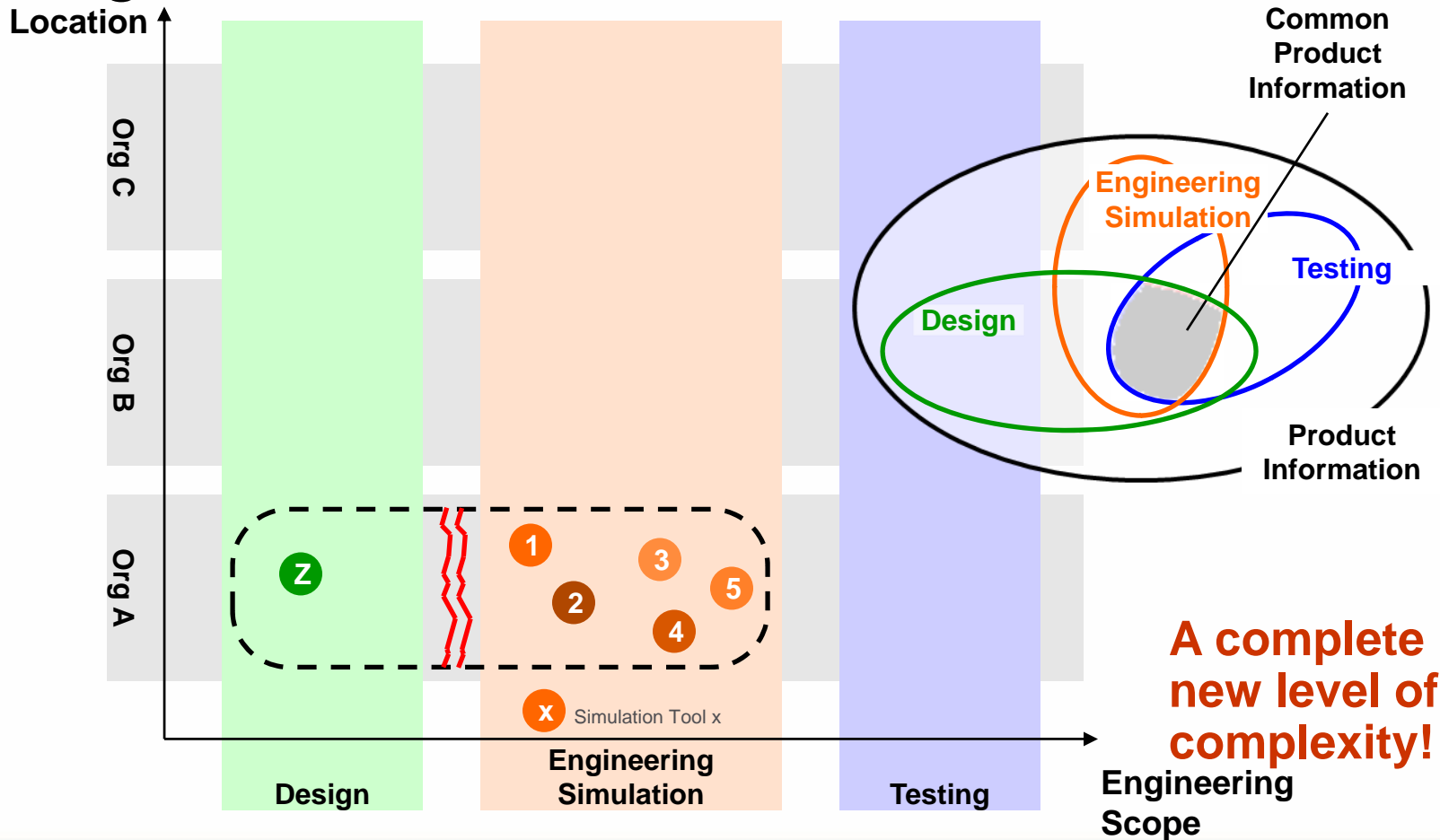
Owners



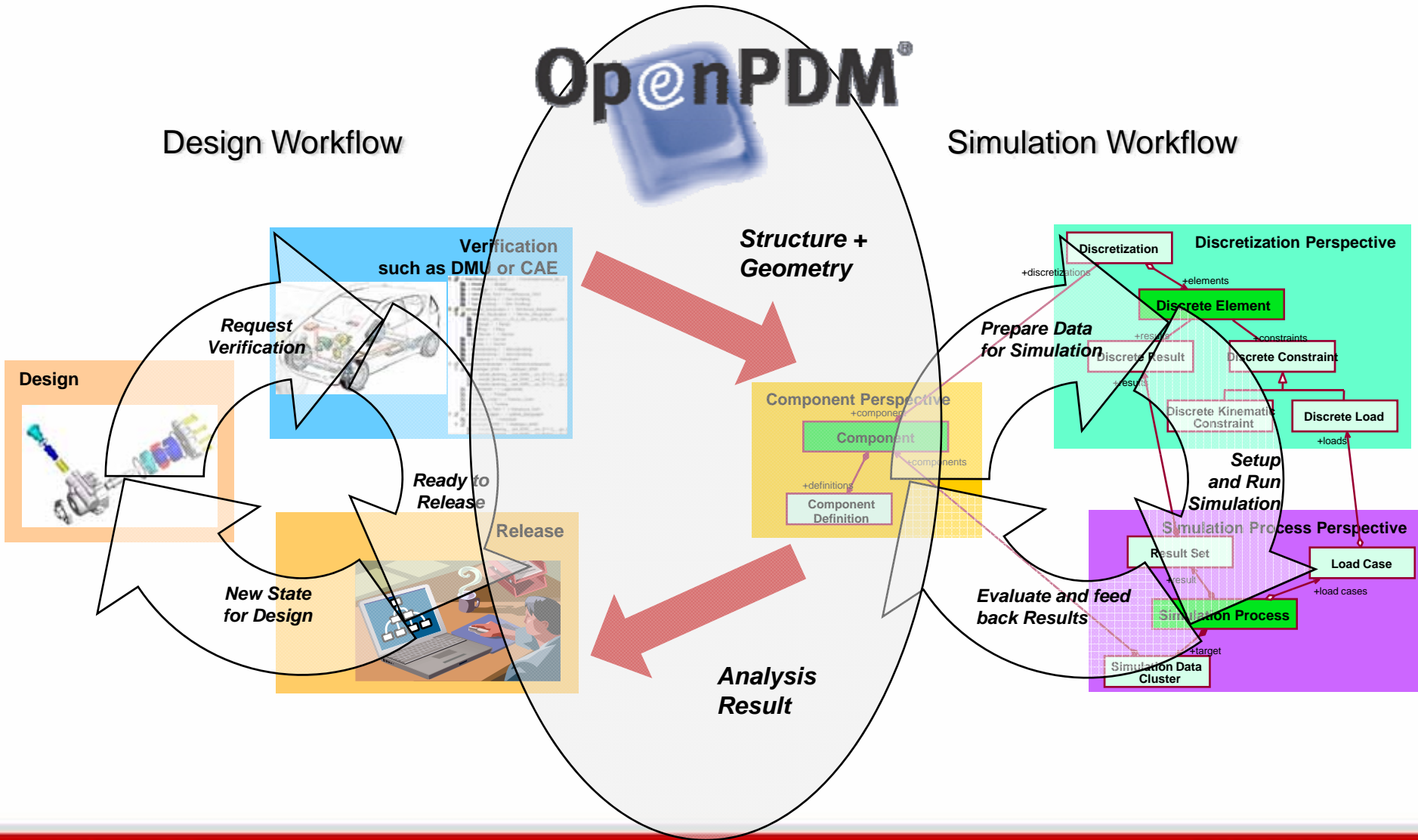
# Integration for Product Data



- Integration over different domains



# Cross Domain Integration CAD-CAE **PROSTEP** integrate the future



# MSC.Software and PROSTEP Announce SimManager Enterprise Connect™



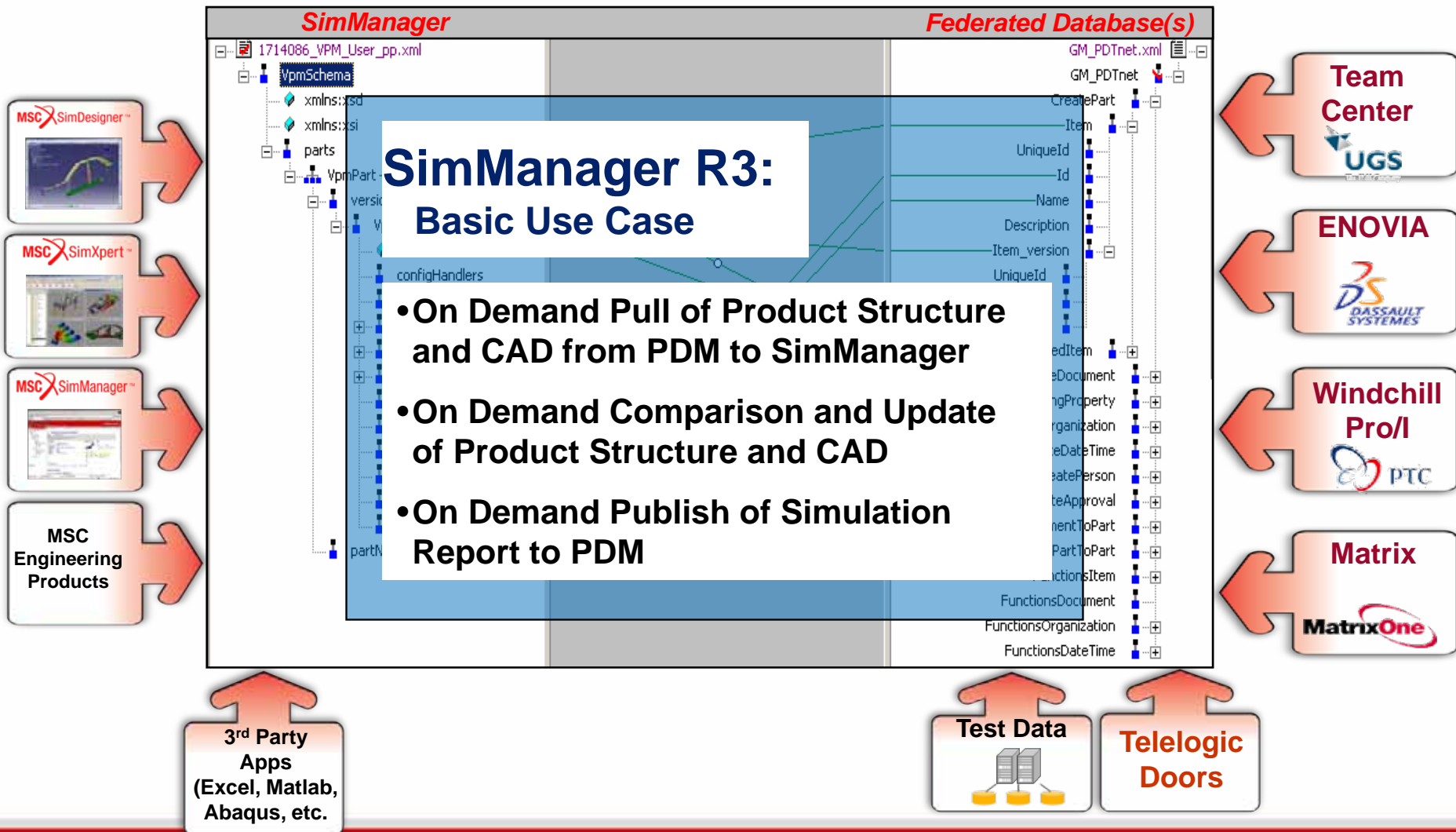
## MSC.Software and PROSTEP AG Announce the Industry's Most Robust Enterprise Access to Simulation Information

### Enterprise Simulation Leader to Introduce SimManager Enterprise Connect(TM) Powered by PROSTEP OpenPDM

Newsire SANTA ANA, Calif., Oct. 12 /PRNewswire-FirstCall/ -- MSC.Software (Nasdaq: MSCS), the leading global provider of enterprise simulation solutions including simulation software and services, today announced that the company has extended their partnership with PROSTEP, the leading PLM product data integration specialist, to offer SimManager Enterprise Connect. This new product will allow users to connect MSC SimManager to other enterprise PLM-solutions (including Enovia, TeamCenter, Windchill, MatrixOne, SAP), and Requirements Management (including Telelogic Doors).

# SimManager "Enterprise Connect"

Powered by OpenPDM



# Demonstration (AVI)



- We start with an Engineering user inside of VPM
- The user selects a top level assembly to export to MSC
- Next, the user fires up the PROSTEP Client in order to apply some specialized filters (this is not a requirement, and can be fully automated)
- Finally the Simulation user starts MSC and can browse the product structure from VPM.
- This can be implemented in an “unmanned mode” as well as push or pull modes.

**Start Movie**



Environment : VPMENV

Simple query: With

OPDM\_23121

Search Now

 Parts

#	Part Number	Ver	Description	Type	Eng Ch	Date	Res
1	OPDM_23121	---	ASSY_Entire_Sedan_20	part	1	2007-03-23-14.50.41.000000	VPM
2	OPDM_23121	--1	Configurable Car	part	1	2007-03-26-09.35.07.000000	VPM
3	OPDM_23121	--2	Configurable Car	part	1	2007-03-26-09.36.00.000000	VPM

Open  Parts  with  Graph 

Select lines Start With

Welcome to Virtual Product Model Access

Result

 Replace  Clear Add object

1

/ 3

# SimManager – Import from VPM

Automotive OEM

# SimManager – Import from VPM

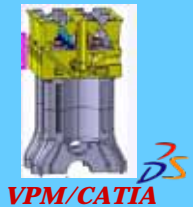


## VPM/SDM integration

PDM

Mechanical Design

VPM



VPM/CATIA



CAD Designer

selection of SDM relevant data

**OPENPDM**

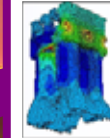
- Product structure transfer request by user or time based trigger*
- Data / CATIA file export. Merge of all marked data*
- Versioning of changed data based on delta calculation*
- CAA CATProduct generation*

only changed data is imported, already imported data is referenced

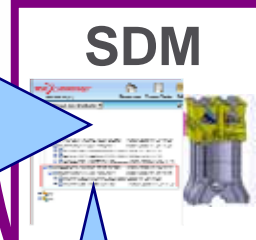
SDM

MSC SOFTWARE

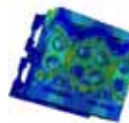
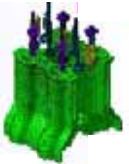
Meshing



SDM

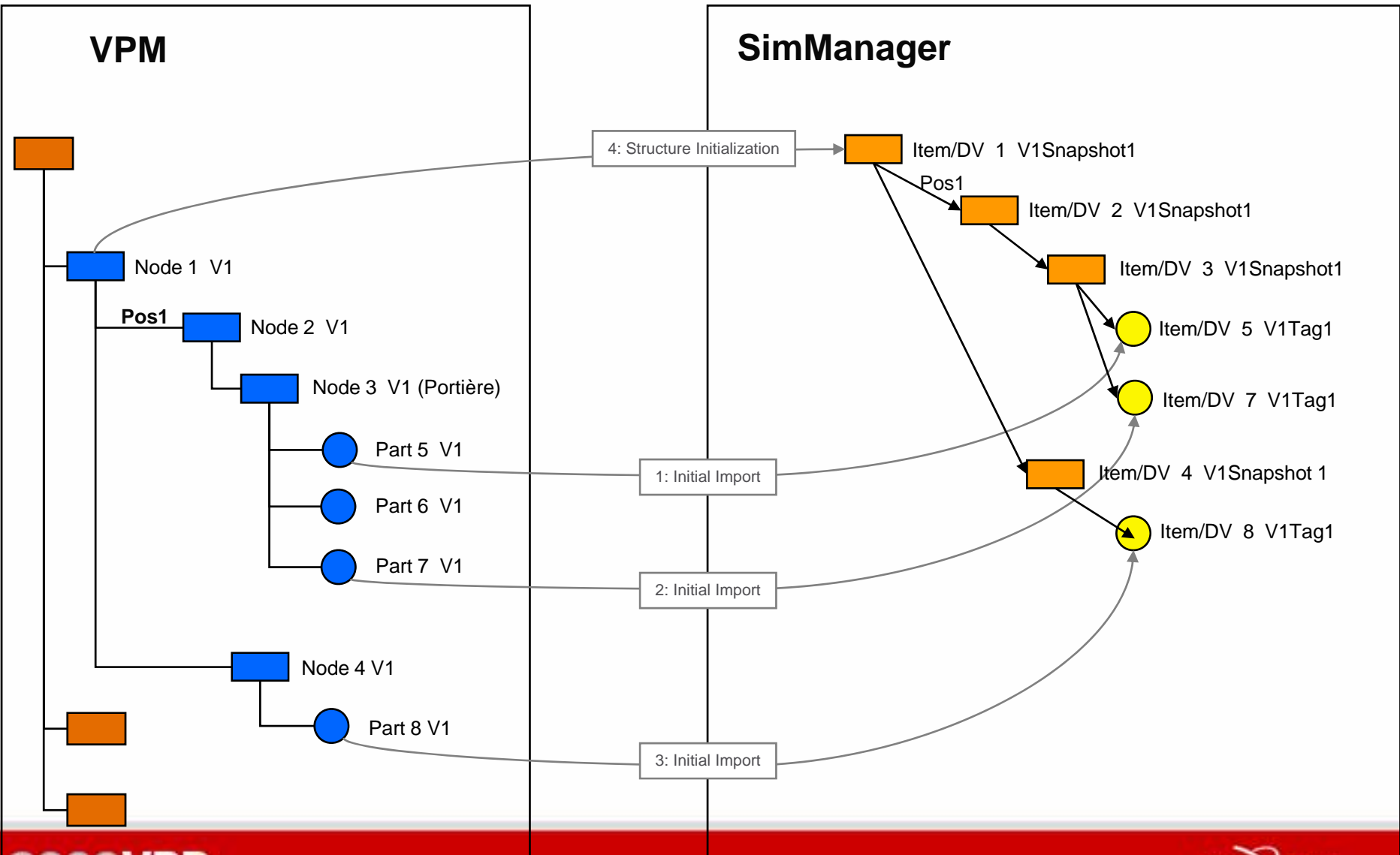


Thermo

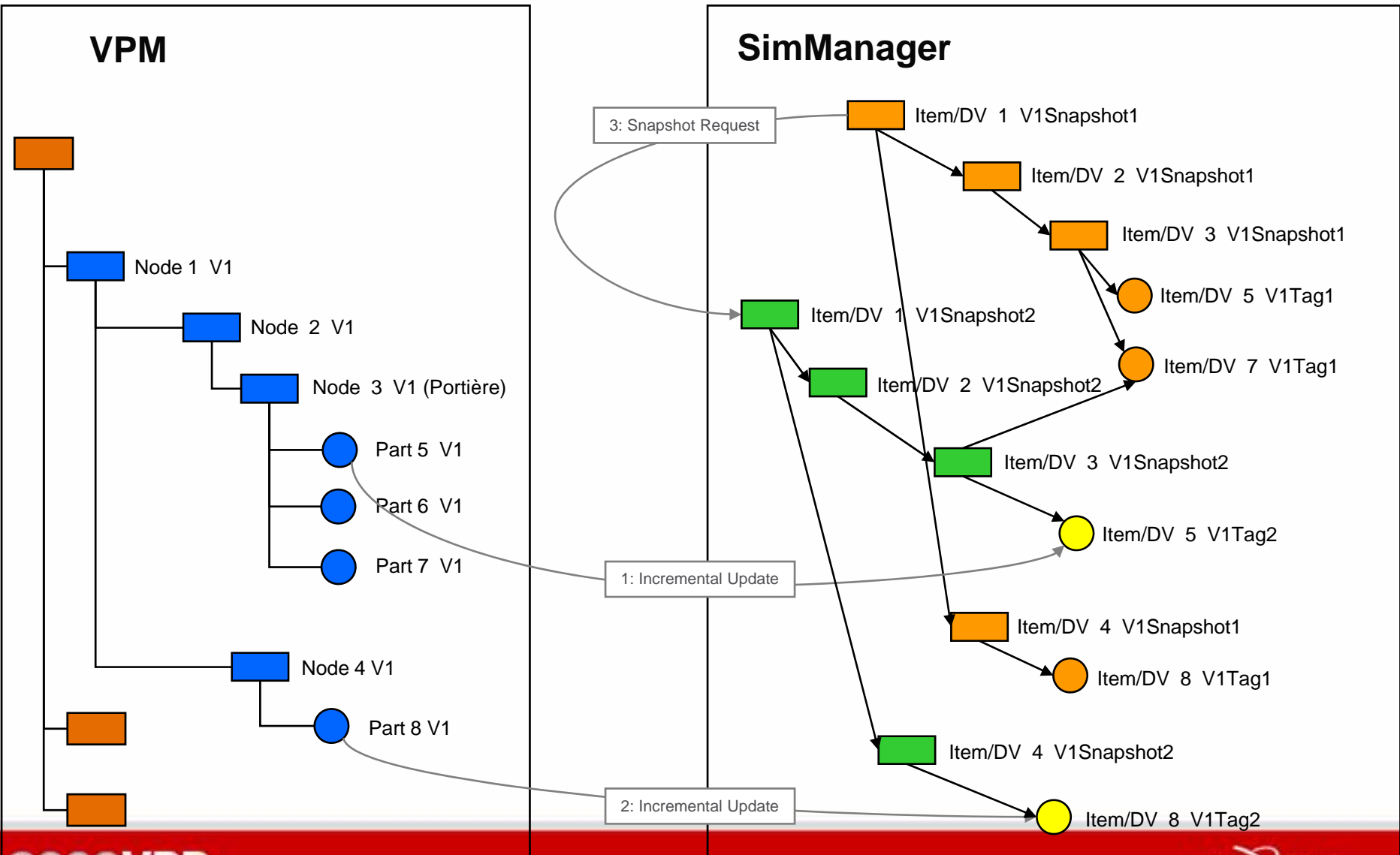


Thermo  
mechanical

# Initialization (first snapshot)



# Delta Structure Update – Snapshot2 integrate the future



# Project Summary and Results



- **VPM 1.6 PTF8 / CATIA V5 R17 SP4**
  - Several car platforms, up to 35 levels of product structure
  - One system used by production, one by preproduction
  - Scope: design
- **MSC SimManager 3.1**
  - Multiple simulation projects per car platform.
  - One system used by production, one by preproduction
  - Scope: simulation of whole cars or subassemblies (e.g. a door)
- **PROSTEP OpenPDM 2009**
  - PROSTEP Base Application
  - VPM Connector
  - MSC Connector
  - PROSTEP Persistence Module
- **Effort**
  - 3 Months to Design, Configure, Deploy and Test
- **Results**
  - Reduced Cycle Time
  - Reduced Error Rates
  - 500 leaf parts and 17000 assembly nodes forming up to 35 assembly levels.
  - The CATProduct generation for 17000 assembly nodes was tested to be done in maximum 2 hours.
- **Next Steps for this customer**
  - Integration of additional PDM systems
  - Expand Integration to backend (legacy) systems

# Conclusion / Take Aways



- Existing Commercial Technology
- Based upon Flexible ISO Standards
- Integration Platform for Enterprise Scalability
- Bi-Directional and Multi-System Support
- BPEL Workflow Processes
- SOA Based
- Rapid Deployment

# Want to learn more ?

## 2009 PROSTEP - T3 (Third Thursday Training) Series

A comprehensive collection of free Webinars and optional Workshops designed to give your project a jump start in the right direction. These educational sessions cover basic and advanced concepts. Through these sessions, attendees will gain a better understanding of how their projects can be made more effective and achieved with less effort and fewer problems. By utilizing proven industry standards companies can build a robust platform for growth, affordability, and excellence.

### PROSTEP Inc. 2009 Webinar and Workshop Schedule

February-19	<a href="#"><u>Ready, Set, Migrate!</u></a>
March-19	<a href="#"><u>Federate Don't Replicate!</u></a>
April-16	<a href="#"><u>PDM Standards De-Mystified!</u></a>
May-21	<a href="#"><u>Dassault Integration &amp; Migration Secrets</u></a>
June-18	<a href="#"><u>PTC Integration &amp; Migration Made Easy</u></a>
July-16	<a href="#"><u>Siemens Integration &amp; Migration Strategies</u></a>
August-20	<a href="#"><u>ERP, LEGACY, and PDM Integrations simplified</u></a>
September-17	<a href="#"><u>Simulation Integration Reality!</u></a>
October-15	<a href="#"><u>Portal Power! Extended Enterprise PDM Exchange</u></a>
November-19	<a href="#"><u>Shipbuilding and Interoperability</u></a>
December-17	<a href="#"><u>Aerospace and Defense Secure Integration Strategies</u></a>



**Via the Web**

Visit [www.prostep.com](http://www.prostep.com) for registration

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