



framatome



CapellaDay
MUNICH 2019

CAPELLA DEPLOYMENT

a feedback from Framatome

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16/09/2019

I. INTRODUCTION

II. INDUSTRIALIZATION

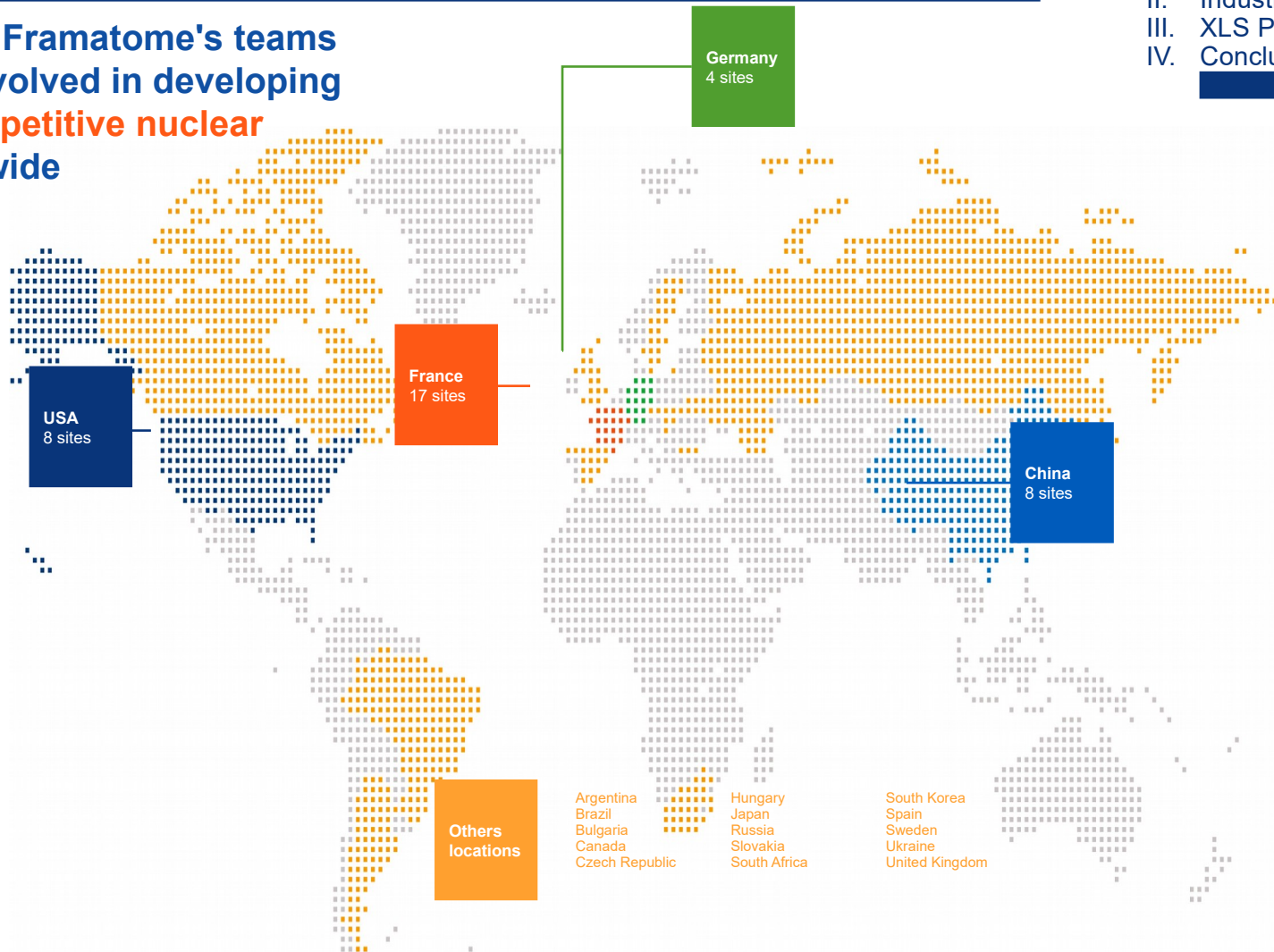
III. XLS Pivot

IV. CONCLUSION

Framatome

- I. Introduction
- II. Industrialization
- III. XLS Pivot
- IV. Conclusion

- For 60 years, Framatome's teams have been involved in developing **safe and competitive nuclear power** worldwide



- 14 000 employees working on more than 250 reactors worldwide at 53 locations in 20 countries

Capella is...

OPEN SOURCE

1. Free license
2. Support issues
3. Extensible software

STANDALONE

1. Application that is not part of a bundle
2. Installation is not required
3. Application **not supervised** by the IT

Download from...

INTERNET

1. Download a **version** of from **POLARSYS** web site
2. Unzip in a folder
3. Launch Capella

INTRANET

1. Download a **version** of from **intranet location** or **colleagues**
2. Unzip in a folder
3. Launch Capella

Manual Activity



- ❖ What about **massive** deployment?
- ❖ How to manage **version** efficiently?



INDUSTRIALIZATION

**Towards a centralized
management of Capella**

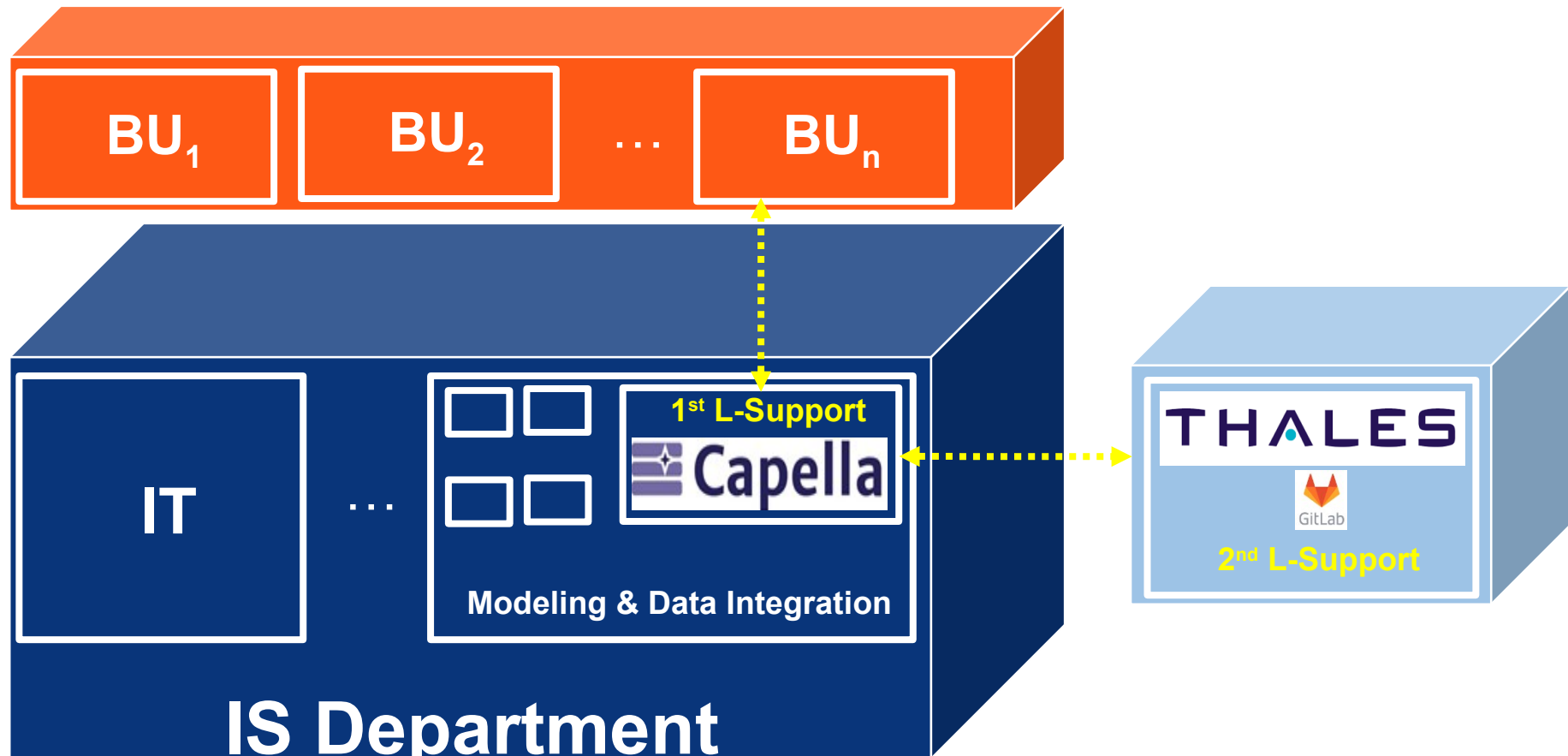


Industrialization is **a method to...**

[Minich et al.2009]

- ❖ Automate of manuals tasks
- ❖ Increase efficiency and quality
- ❖ Reduce cost
- ❖ Implement standardized and high productive methods

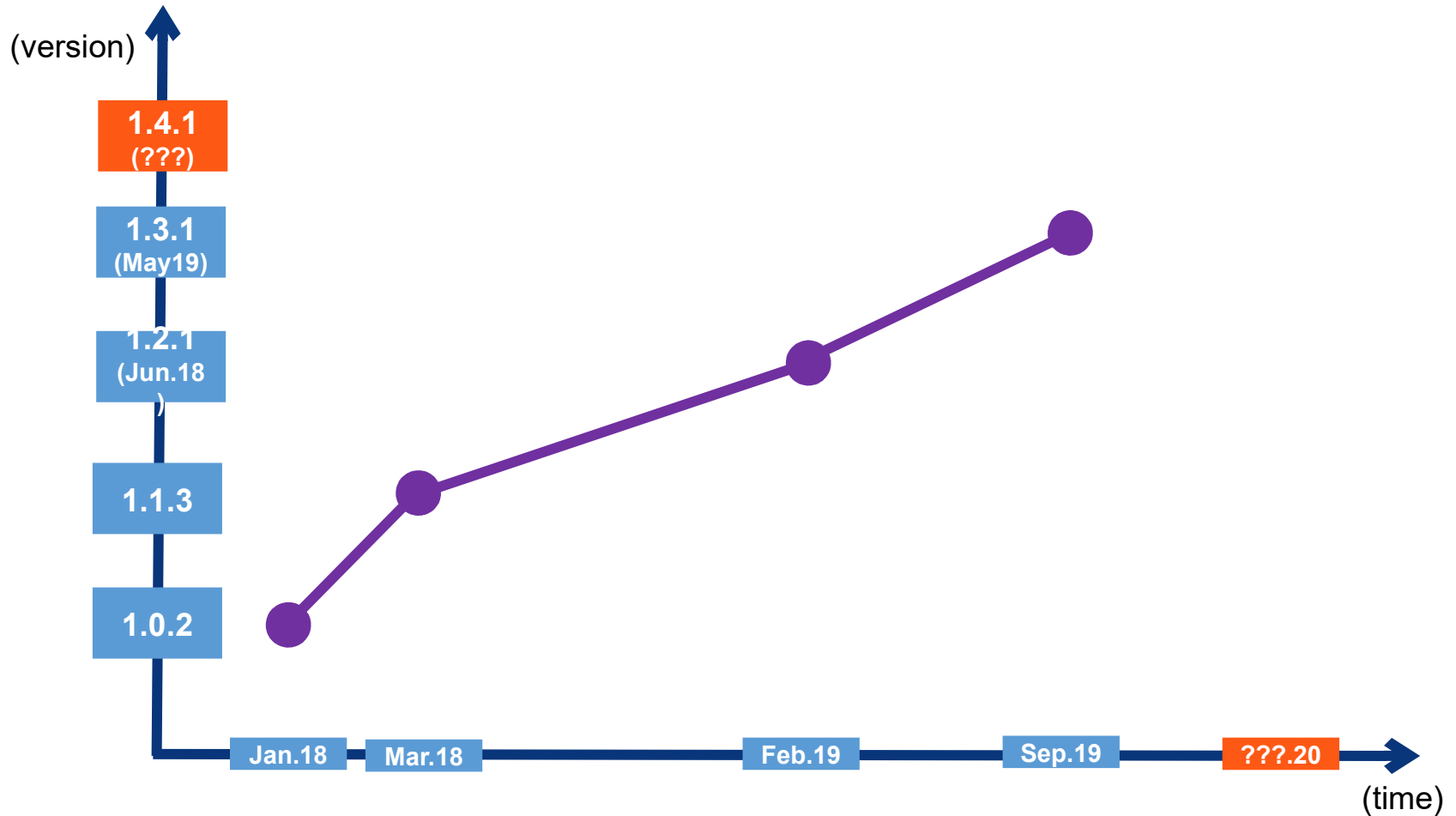
Systems Engineer **focus on business...**



Upgrading

- I. About
- II. **Industrialization**
- III. XLS Pivot
- IV. Conclusion

Under control...



Two Capella, **Two goals...**

UAT

- ❖ For **key** users
- ❖ To validate new features
- ❖ Manage sand box projects



PROD

- ❖ For (**key**) users
- ❖ Consume **validated** features
- ❖ Manage real word projects



1st L-Support **handles...**

PACKAGING

1. 1st L-Support download a version a Capella from POLARSYS web site
2. 1st L-Support creates a package to deploy Capella for the **key users**
3. 1st L-Support creates a package to deploy Capella for the user

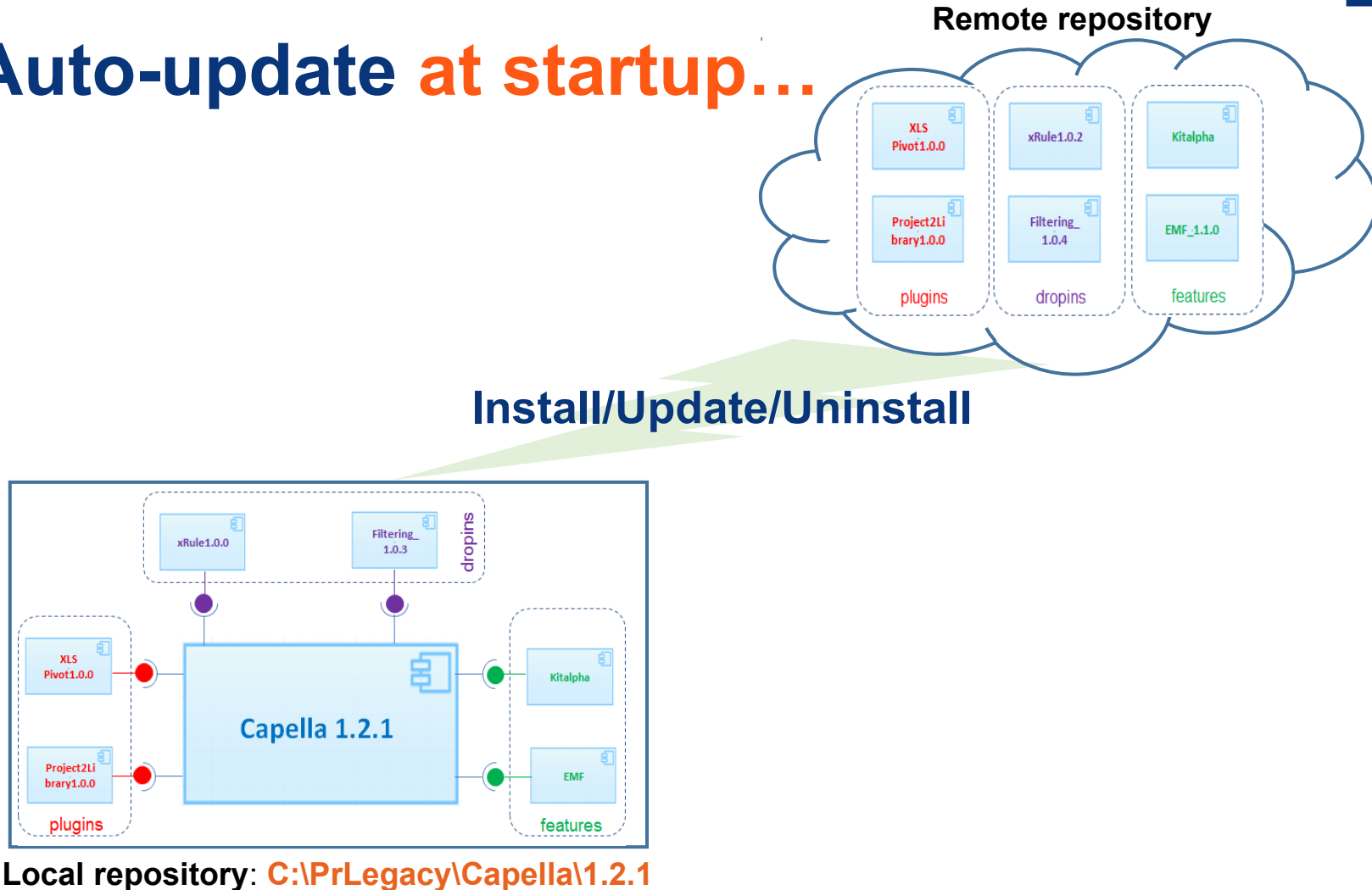
DEPLOYMENT

1. The **User** send an installation request with to 1st L-Support
2. The **1st L-Support** use the package to deploy Capella for the **user**
3. A **shortcut to launch Capella** is created on the user's desktop

Releases Management

- I. About
- II. **Industrialization**
- III. XLS Pivot
- IV. Conclusion

Auto-update **at startup...**



Helps to manage...

VERSIONING

1. Share project a server
2. Project available for collaborative work
3. Rescue approach if your computer fails



CAPELLA MIGRATION

1. Installation of the new version Capella
2. **Synchronization** with users to commit and migrate projects
3. Uninstallation of the old version of Capella

Most used...

Requirements Viewpoint
Contact: **Thales** | License: EPL

XHTML Documentation Generation

Contact: **Thales** | License: EPL

Basic Price Viewpoint
Contact: **Thales** | License: EPL

Basic Mass Viewpoint

Contact: **Thales** | License: EPL



M2Doc

Contact: **Obeo** | License: EPL

Basic Performance Viewpoint
Contact: **Thales** | License: EPL

Filtering

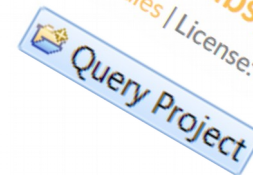
Contact: **Thales** | License: EPL

System to Subsystem Transition
Contact: **Thales** | License: EPL

pure::variants

Property Values Management Tools (PVMT)

Contact: **Thales** | License: EPL





XLS PIVOT

a **generic** approach for data
exchange between Capella and Excel

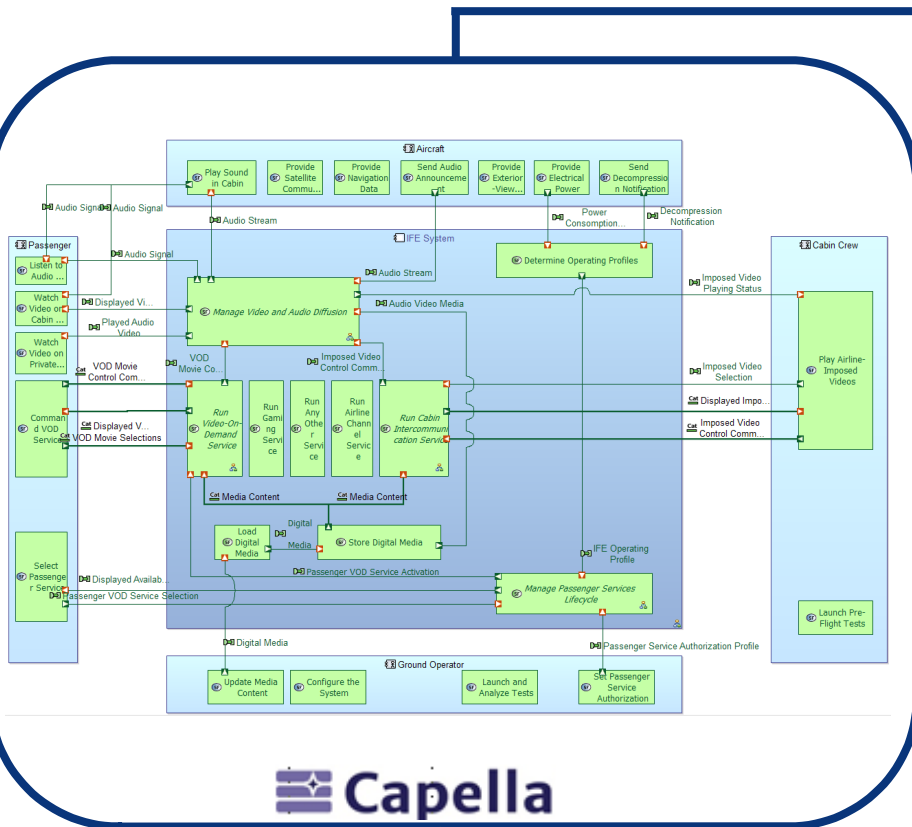


Context

- I. About
- II. Industrialization
- III. **XLS Pivot**
- IV. Conclusion

Data exchange...

export



Capella

	A	B	C	D	E	F
1	Import Option	name	parent[SystemFunction]	parent[SystemFunctionPkg]	allocatedTo[System]	allocatedTo[Actor]
2	UPDATE	Root System Function		System Functions		
3	UPDATE	Perform Cabin Management Activities	Root System Function			
4	UPDATE	Play Airline-Imposed Videos	Perform Cabin Management Activities			Cabin Crew
5	UPDATE	Launch Pre-Flight Tests	Perform Cabin Management Activities			Cabin Crew
6	UPDATE	Entertain with IFE System	Root System Function			
7	UPDATE	Watch Video on Private Screen	Entertain with IFE System			Passenger
8	UPDATE	Watch Video on Cabin Screen	Entertain with IFE System			Passenger
9	UPDATE	Select Passenger Service	Entertain with IFE System			Passenger
10	UPDATE	Command VOD Service	Entertain with IFE System			Passenger
11	UPDATE	Listen to Audio Announcement	Entertain with IFE System			
12	UPDATE	Provide Aircraft Information, Commands and Means	Root System Function			
13	UPDATE	Provide Satellite Communication Means	Provide Aircraft Information, Commands and Means			Aircraft
14	UPDATE	Provide Navigation Data	Provide Aircraft Information, Commands and Means			Aircraft
15	UPDATE	Provide Electrical Power	Provide Aircraft Information, Commands and Means			Aircraft
16	UPDATE	Provide Exterior-View Videos	Provide Aircraft Information, Commands and Means			Aircraft
17	UPDATE	Send Audio Announcement	Provide Aircraft Information, Commands and Means			Aircraft
18	UPDATE	Play Sound in Cabin	Provide Aircraft Information, Commands and Means			Aircraft
19	UPDATE	Send Decompression Notification	Provide Aircraft Information, Commands and Means			Aircraft
20	UPDATE	Perform Maintenance, Configuration and Test Operations	Root System Function			
21	UPDATE	Update Media Content	Perform Maintenance, Configuration and Test Operations			Ground Operator
22	UPDATE	Configure the System	Perform Maintenance, Configuration and Test Operations			Ground Operator
23	UPDATE	Launch and Analyze Tests	Perform Maintenance, Configuration and Test Operations			Ground Operator
24	UPDATE	Set Passenger Service Authorization	Perform Maintenance, Configuration and Test Operations			Ground Operator
25	UPDATE	IFE System	Root System Function			
26	UPDATE	Provide Access to Digital Media	IFE System			
27	UPDATE	Store Digital Media	Provide Access to Digital Media		IFE System	
28	UPDATE	Load Digital Media	Provide Access to Digital Media		IFE System	
29	UPDATE	Store Digital Media 2	Provide Access to Digital Media		IFE System	
30	UPDATE	Load Digital Media 2	Provide Access to Digital Media		IFE System	
31	UPDATE	Manage Passenger Services Lifecycle	IFE System			
32	UPDATE	Determine Service Availability	Manage Passenger Services Lifecycle		IFE System	



import

We need, We expect...



Operations

- ❖ Create
- ❖ Read
- ❖ Update
- ❖ ~~Delete~~



Constraints

- ❖ Name Conflict
- ❖ Text-based



Reporting

- ❖ Explain operations
- ❖ Errors Management

Implements a **generic approach...**

CAPELLA

- ❖ instead of developing **importer/exporter** for each type of object
- ❖ to minimize effort to adapt **XLS Pivot** when Capella model change
- ❖ import/export **template file** generated on the fly by the user



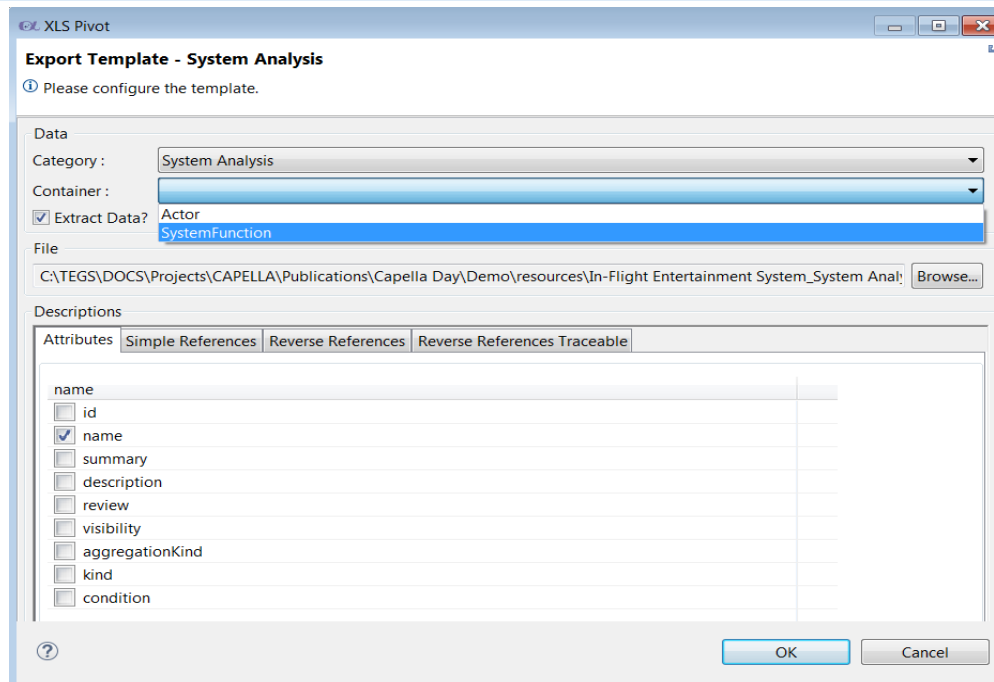
EXCEL

- ❖ is just and import/export format
- ❖ no VBA script in Excel files

To enable/disable...

CLASS

- ❖ To import/export **instead of enabling all Capella classes**
- ❖ **To include** for import/export of object of another class



Basic Property

- I. About
- II. Industrialization
- III. **XLS Pivot**
- IV. Conclusion

■ Attribute: **STRING**, **INTEGER**, etc.



■ Simple EReference: **ENUM**



	B	C
1	name	status
2	Root System Function	
3	Perform Cabin Management Activities	TO BE REVIEWED
4	Play Airline-Imposed Videos	
5	Launch Pre-Flight Tests	
6	Entertain with IFE System	
7	Watch Video on Private Screen	
8	Watch Video on Cabin Screen	
9	Select Passenger Service	
10	Command VOD Service	
11	Listen to Audio Announcement	
12	Provide Aircraft Information, Commands and Means	
13	Provide Satellite Communication Means	
14	Provide Navigation Data	

TO BE DISCUSSED ▼

DRAFT
TO BE REVIEWED
TO BE DISCUSSED
REWORK NECESSARY
UNDER REWORK
REVIEWED
TODO_STEPHANE
TODO_VEIT

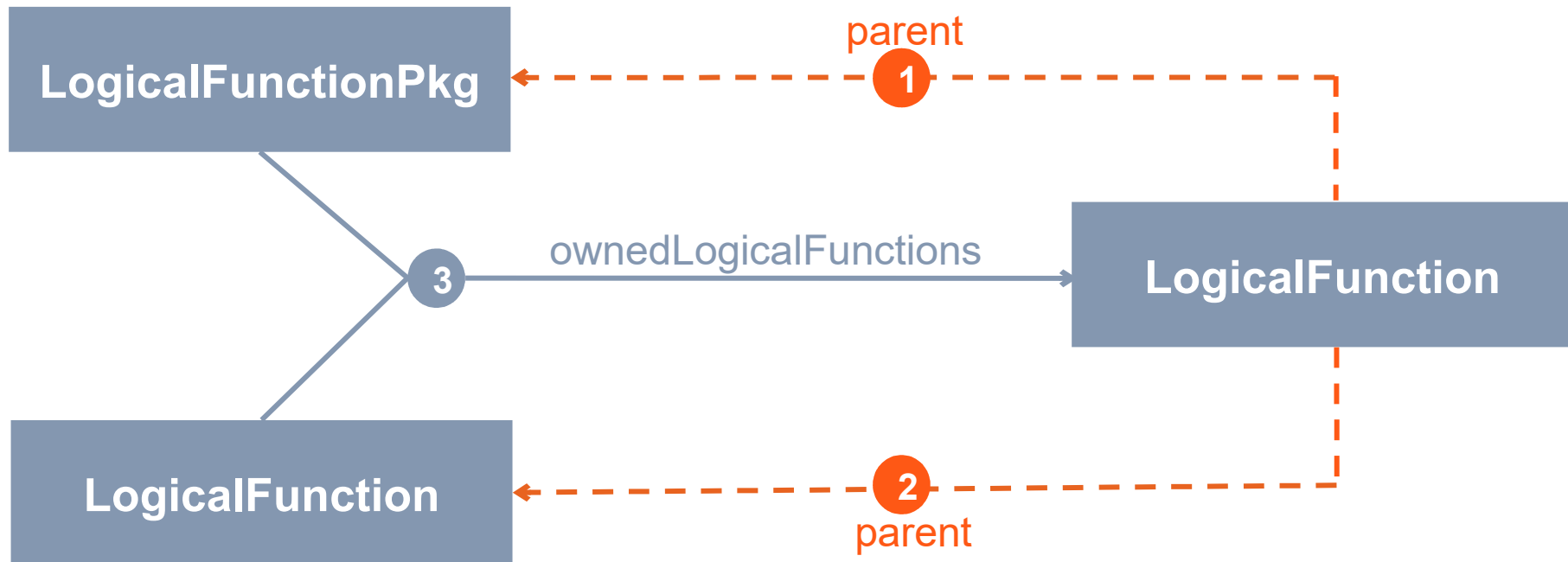
SystemFunction



For Excel file

- ❖ Auto-generation of Simple EReference

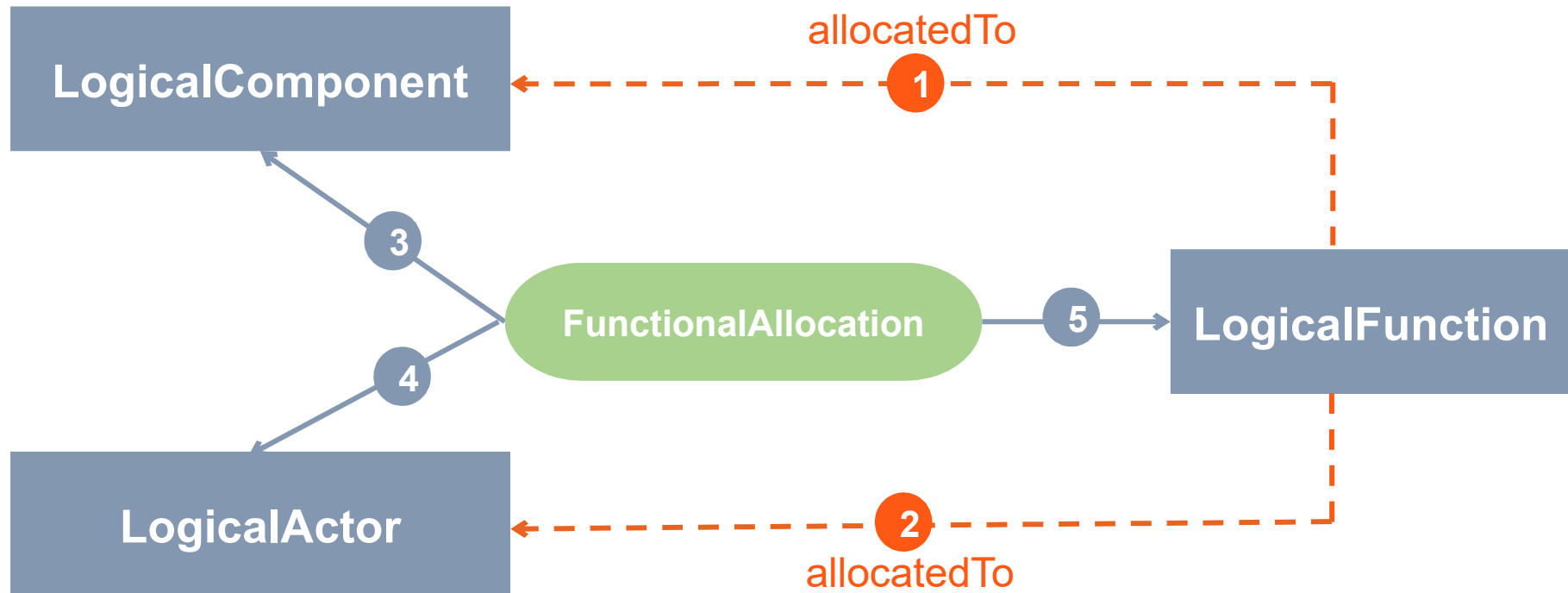
■ User Experience (1,2) vs Legacy Implementation (3)



For Excel file

- ❖ How to identify the class referenced by the **parent** property?

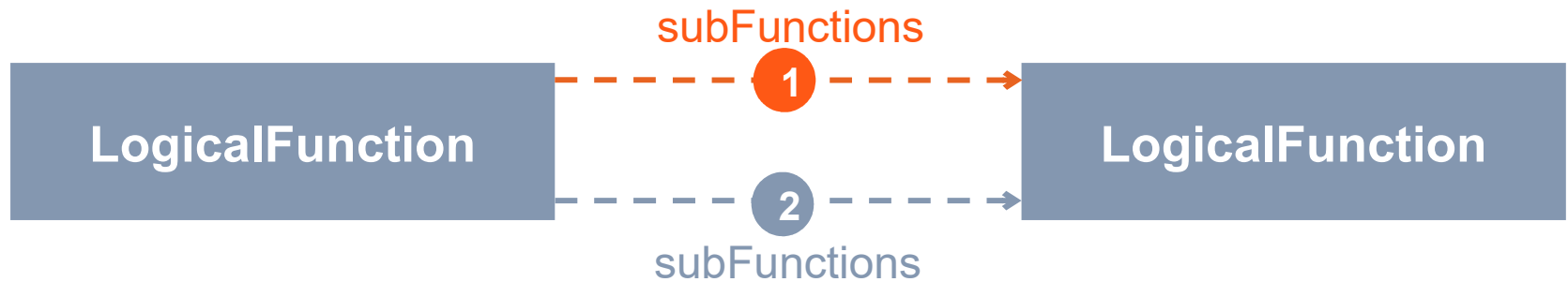
■ User Experience (1,2) vs Legacy Implementation (3,4,5)



For Excel file

- ❖ How to identify the class referenced by **allocatedTo** property?

■ User Experience (1) vs Legacy Implementation (2)



Forbidden...

to avoid overlapping with **Reverse EReference**

Useful for disambiguation...

Objects with the same name

<Object_Name>@<Object_Id>

Boundary objects

<Owner_Name>[<Boundary_Object_Name>]

	B	C	D
1	name	source	target
2	Digital Media@56fc8021-e30e-44ae-9d5e-f776874ea5a9	Load Digital Media [FOP 1@8204bf11-857f-41a2-8322-76f507e66926]	Store Digital Media[FIP 1@41706e91-df75-4ae4-b6a7-c6f3aea01325]
3	Service Availability	Determine Service Availability[FOP 1@7fdc1a1d-fdc3-45f9-bd24-8daf808cae98]	Handle Service Activation Requests[FIP 4@d720121f-6907-4266-8af7-7ae5928e01f8]
4	VOD Movie Status	Manage Passenger Service Interruptions[FOP 3@4e21b270-bd09-4fcd-87c8-b72eb8c3825f]	Broadcast Audio Video Streams[FIP 1@0bf85ea8-1d8f-43b3-8c8a-dd04d921eb6f]
5	VOD Movie	Broadcast Audio Video Streams[FOP 4@1a86cf04-6b46-47af-a28c-efcaf981ff58]	Manage Passenger Service Interruptions[FIP 3@bdb71b4e-fb16-4af0-87ca-03775716f71c]
6	Available VOD Movies List	Store Digital Media[FOP1@5a47aa37-e709-4ad9-94d4-d37b6adcfc8b]	Retrieve VOD Movie Data[FIP1@b7b76a14-6bb6-45a5-8d27-94fdaca71bed]
7	Displayed VOD Movies List	Retrieve VOD Movie Data[FOP1@042c3342-a428-4d59-996e-7c0d3f729f1a]	Command VOD Service[FIP1@81e69d4d-36cf-4b98-a61d-806d2bdb384e]
8	Available Languages	Store Digital Media[FOP1@8f3bc1a6-d7c3-4ce5-ac9b-5863f632ad89]	Retrieve VOD Movie Data[FIP2@e2366cc3-835e-45d2-89cf-c82f93edd26f]
9	Movie Cover	Store Digital Media[FOP1@ed1b8881-5247-497e-a05f-26fd58edb4c0]	Retrieve VOD Movie Data[FIP3@41b33ff4-b487-4311-b1b7-26184d766070]
10	Displayed Available Languages	Retrieve VOD Movie Data[FOP2@26c4a754-d576-46ce-812c-622b5de544bf]	Command VOD Service[FIP2@4ccf7302-dae8-4e61-bb53-336ec6b8a6aa]
11	Displayed Movie Description	Retrieve VOD Movie Data[FOP1@434e8728-2fd9-43d3-9413-8007c8a026b4]	Command VOD Service[FIP1@c8671941-47ef-49dc-92b9-d55234f2fb31]
12	Available Airline Video List	Store Digital Media[FOP2@0db6dc4a-07e3-4739-9f41-3d920f8c9a1f]	Manage Imposed Video Selections[FIP1@c16ff8c0-05ae-4591-82a8-478aaf6ec043]
13	Displayed Imposed Videos List	Manage Imposed Video Selections[FOP1@6b424ace-11b0-48bc-ba7c-bcafc5f9aab5]	Play Airline-Imposed Videos[FIP1@bd1fed2c-d331-4b92-9eed-ff5db97debff]
14	Played Audio Video	Broadcast Audio Video Streams[FOP1@6e7508dd-ef4d-4419-92bb-c2396201bfdb]	Watch Video on Private Screen[FIP1@4140cda0-39e5-42fc-a312-e72bf83eec77]
15	Passenger VOD Service Selection	Select Passenger Service[FOP1@841c77e2-381e-4594-a0a3-96add7a5f55e]	Handle Service Activation Requests[FIP1@ee142c62-9963-4665-bb40-2bb282ea2263]

Reporting

- I. About
- II. Industrialization
- III. **XLS Pivot**
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What was done...

	A	B	C	D	E	F
1	import status	name	status	parent[SystemFunction]	allocatedTo[System]*	allocatedTo[Actor]*
2	UPDATED	Perform Cabin Management Activities	TO BE REVIEWED	Root System Function		
3	SKIPPED	Play Airline-Imposed Videos		Perform Cabin Management Activities		Cabin Crew
4	SKIPPED	Launch Pre-Flight Tests		Perform Cabin Management Activities		Cabin Crew
5	UPDATED	Entertain with IFE System	TO BE DISCUSSED	Root System Function		
6	SKIPPED	Command VOD Service		Entertain with IFE System		Passenger
7	UPDATED	Listen to Audio Announcement	REVIEWED	Entertain with IFE System		Passenger
8	SKIPPED	IFE System		Root System Function		
9	ERROR	Provide Access to Digital Media 2		IFE System 3	SystemFunction with name [IFE System 3] not found!	
10	CREATED	Store Digital Media 2	UNDER REWORK	Provide Access to Digital Media		
11	CREATED	Load Digital Media 2		Provide Access to Digital Media		
12	CREATED	Manage Passenger Services Lifecycle 2		IFE System		
13	CREATED	Determine Service Availability 2	DRAFT	Manage Passenger Services Lifecycle	IFE System	
14	ERROR	Handle Service Activation Requests 2	DRAFT	Manage Passenger Services Lifecycle	IFE System 4	
15						

SystemFunction

XLS Pivot in action...



**Sample Model
Highlights
In-Flight Entertainment**

Let's look forward...

BACKLOG

- ❖ GUI for **Preference Model**
- ❖ **Alias Model** for more user-friendly property name
- ❖ Highlight updated values in the **reporting**
- ❖ Allow user to define **order** for selected properties
- ❖ Performance issues



CONCLUSION



We may **suggest...**

COMMUNITY

System and **Software** Engineers together, **the way to go!**

IS Dpt. and Business **together...**

❖ xRule

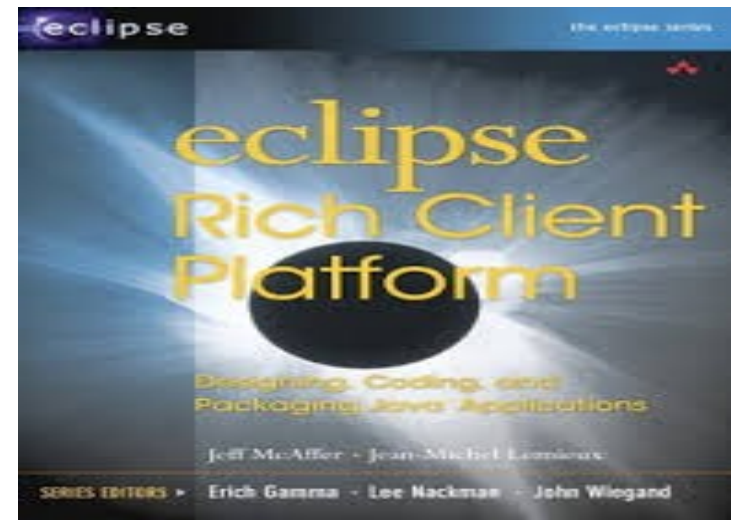
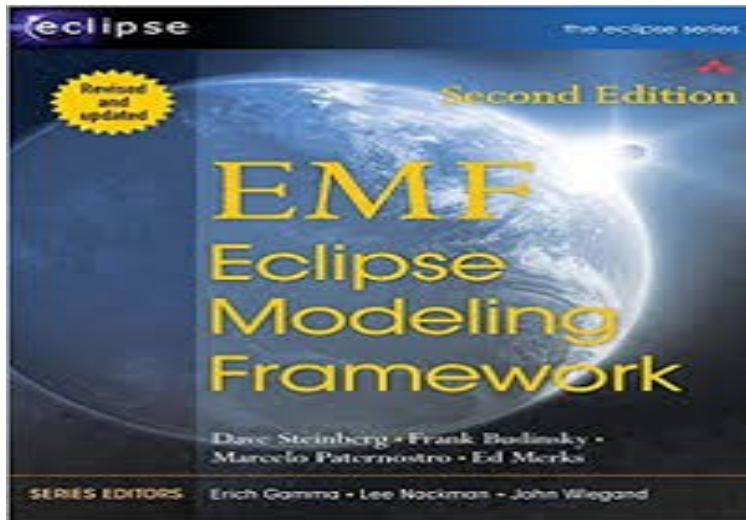
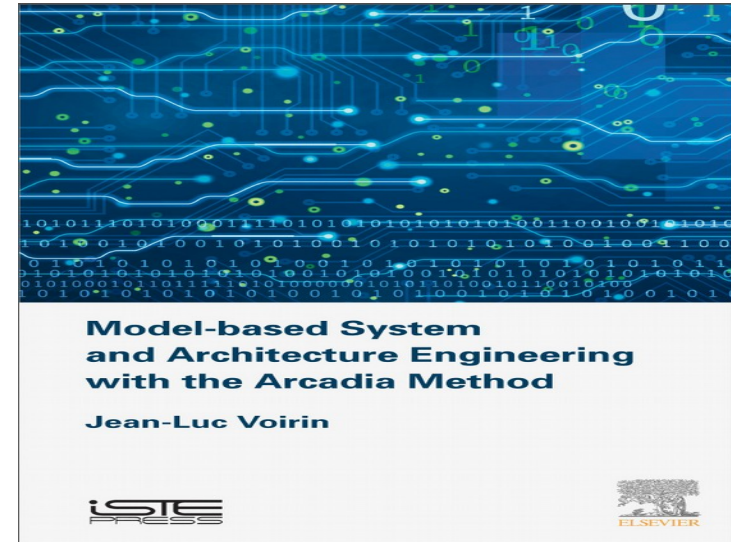
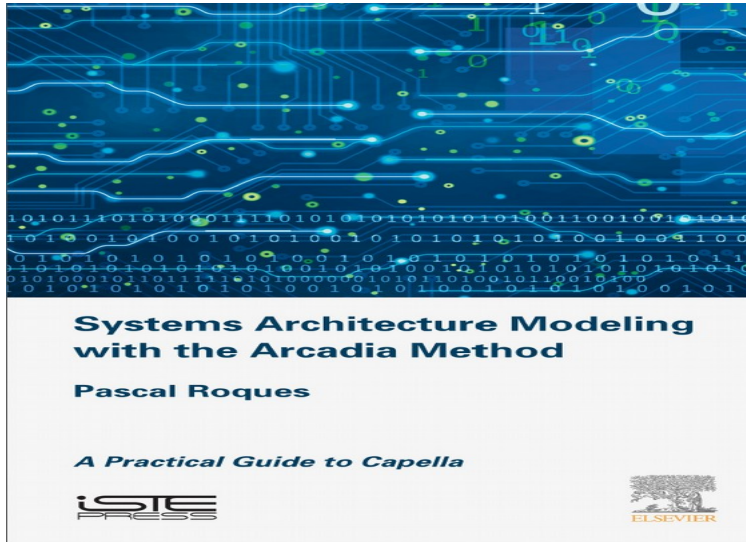
❖ Capella2Cradle

❖ Project2Library

❖ xRename

Bibliography

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Thank you!

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