



Modélisation OPC UA XiMulator

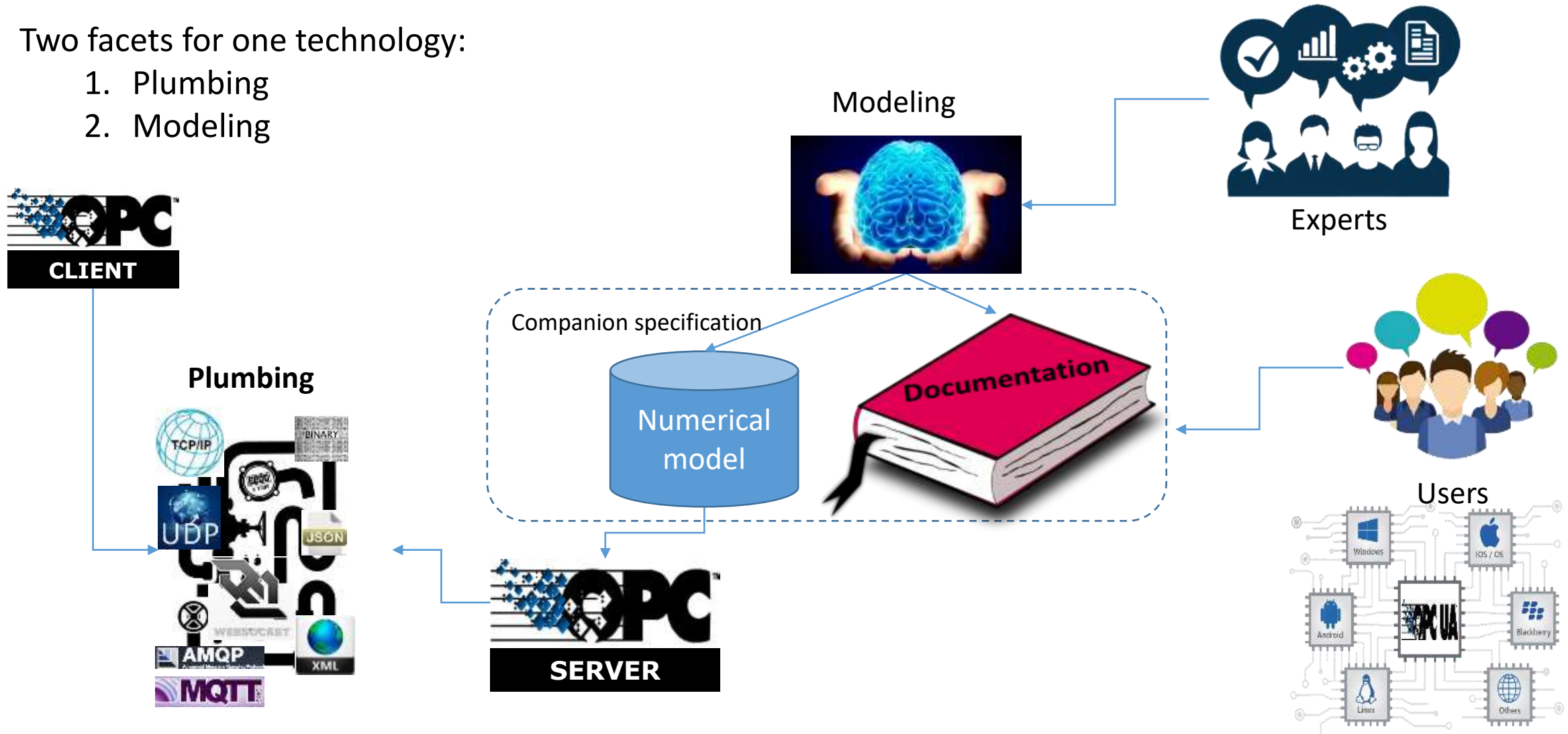


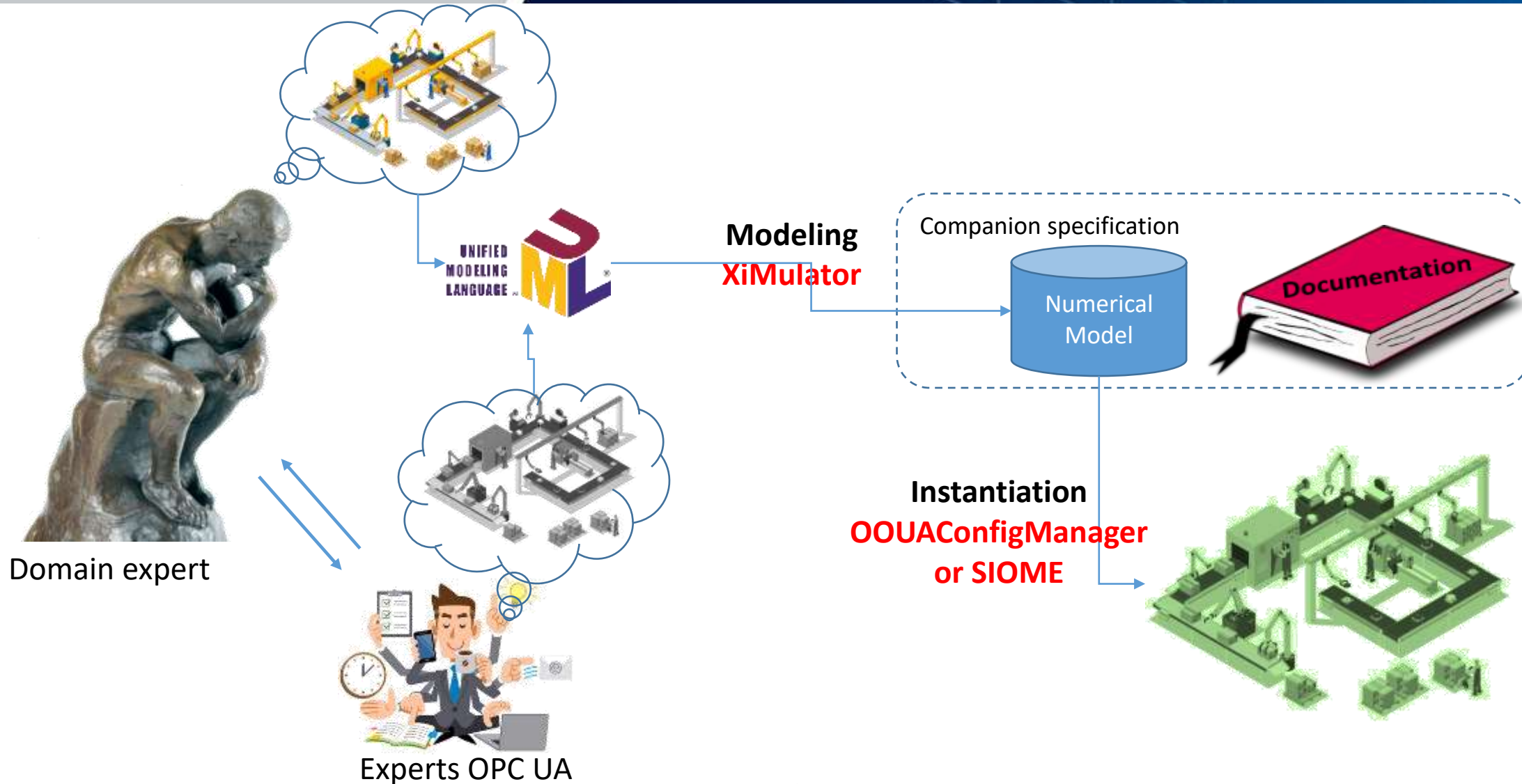
Michel Condemine

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- Directeur de **4CE Industry**
- Leader du projet OpenOpcUa
- MichelC@4CE-Industry.com

Two facets for one technology:

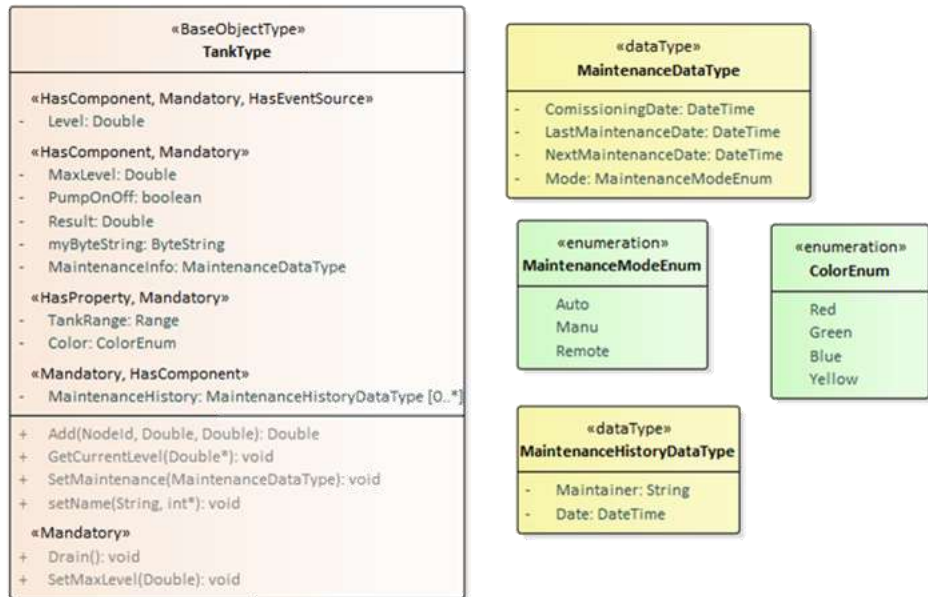
1. Plumbing
2. Modeling



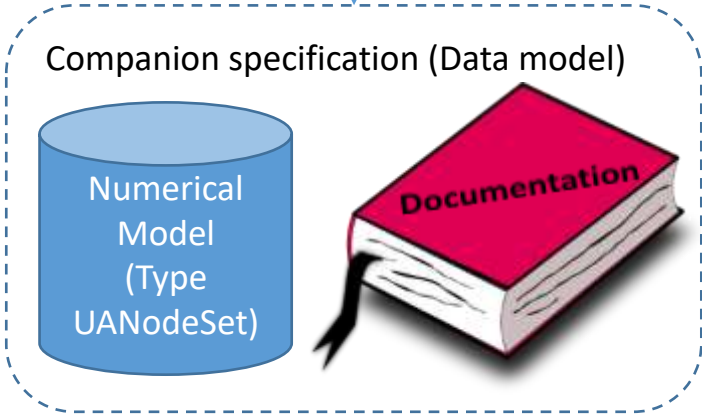




Logical model



Model and doc generation
(XiMulator)

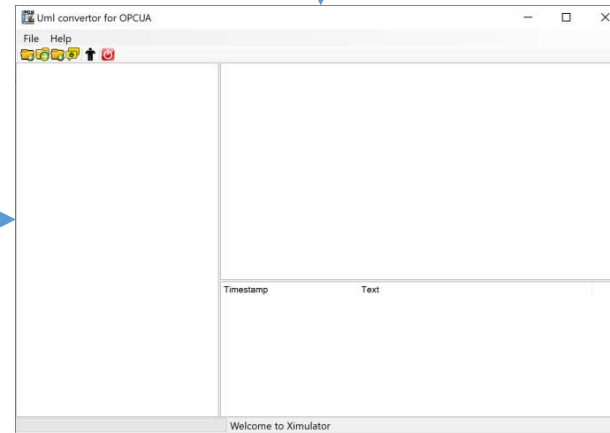
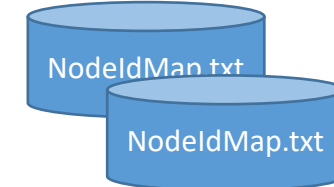
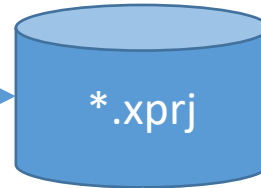




XiMulator

- **XiMulator – UML to NodeSet et Doc**
- **Xmi - Uml Generator = XiMulator**

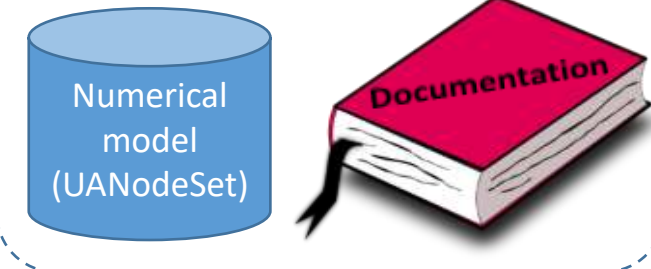
Configuration file

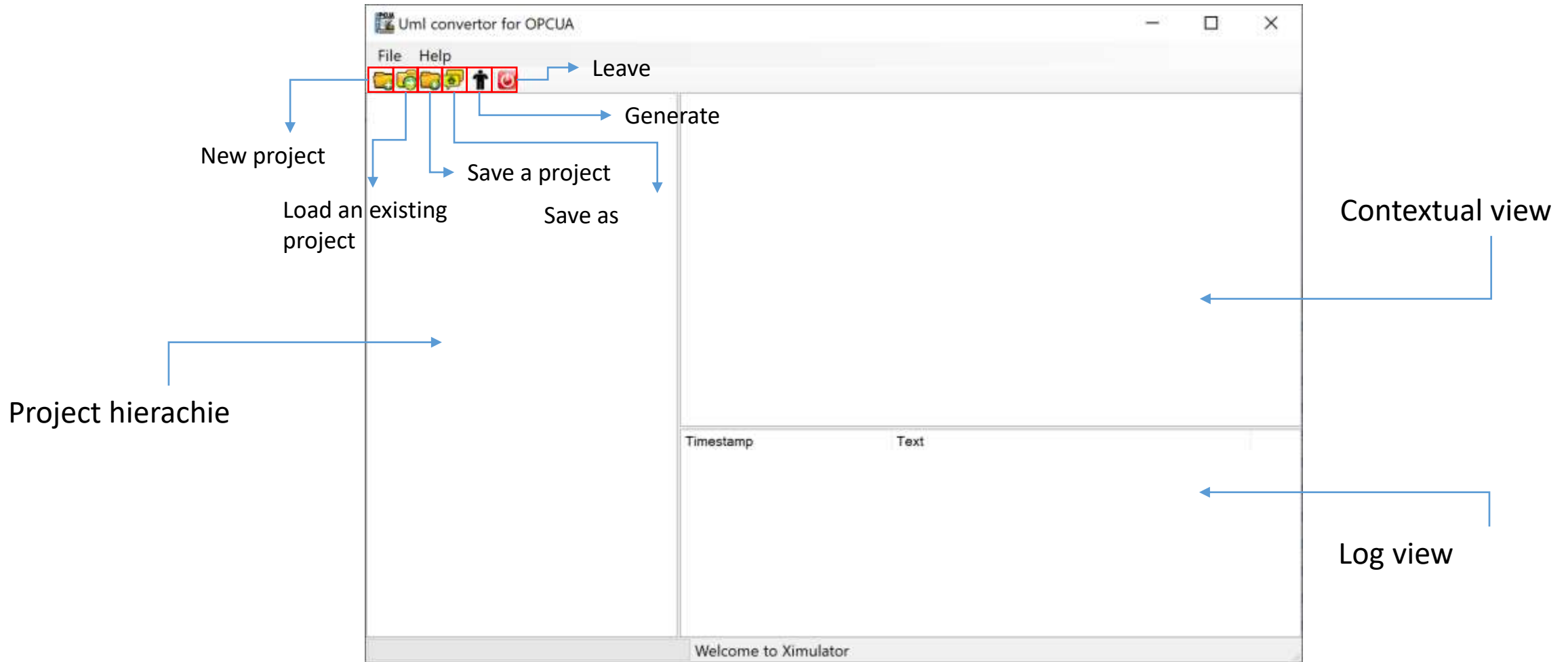


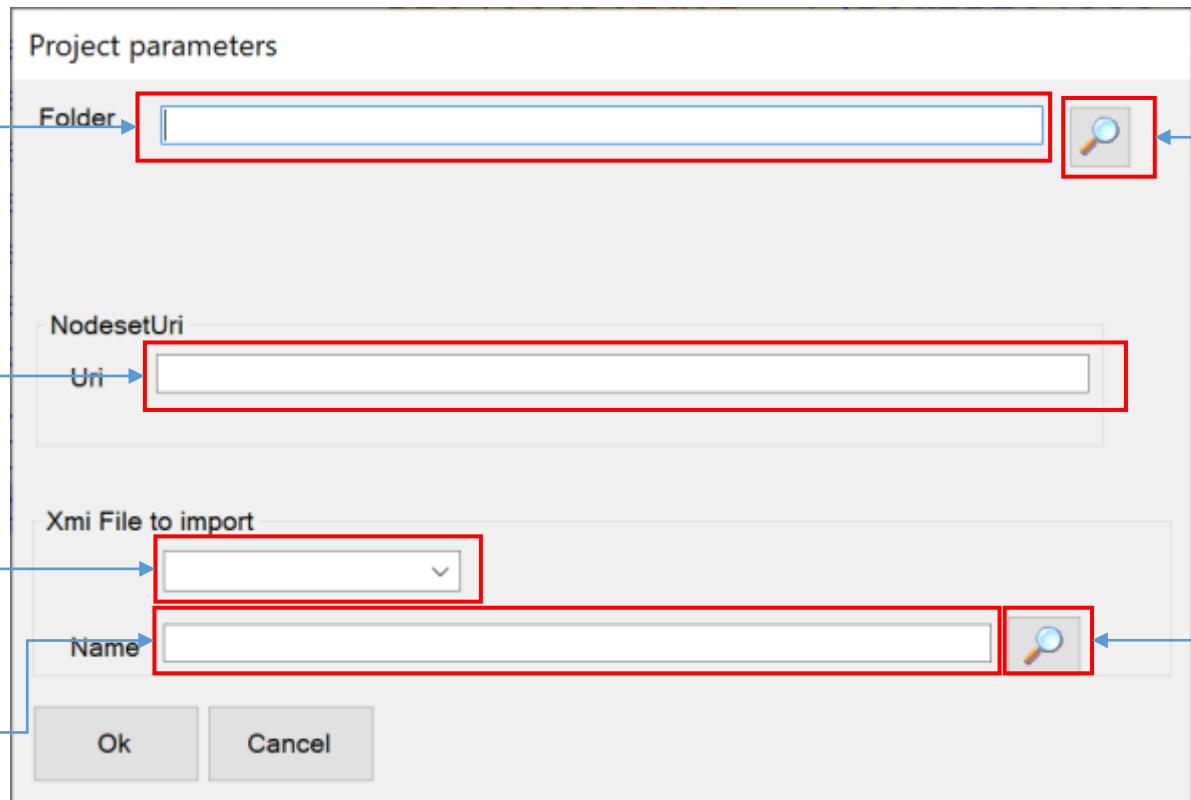
- XiMulator is independant of the modeling tool.
- You can use your prefer UML modeler.
- XiMulator create types Nodeset and documentation.

- XiMulator is based on Xmi 2.5 file.
- XiMulator can generate from fragmented package and/or existing Nodeset file.
- XiMulator allows Nodeset import.


Companion specification (Data Model)








Project parameters

Folder 

NodesetUri
Uri

Xmi File to import
Name 

Ok Cancel

Project folder

Select an URI folder your new Nodeset

Select the source modeler

Filename to import

Select a folder

Select the XMI file to transform



OPC UA XiMulator - Project

Input Nodeset

URI

XMI file

Output file

```
<Xmi2NodeSetProject Name="YourProject" Date="22/02/2021 12:22:57"  
ProjectFolder=".\\YourProject">  
  <FileNodeSet>Opc.Ua.NodeSet2.Part3.xml</FileNodeSet>  
  <FileNodeSet>Opc.Ua.NodeSet2.Part4.xml</FileNodeSet>  
  <FileNodeSet>Opc.Ua.NodeSet2.Part5.xml</FileNodeSet>  
  <NodeSetUri>http://OpenOpcUa.org/YourProject</NodeSetUri>  
  <FileXmi d2pl:Modeler="EA" xmlns:d2pl="ooua">YourProject_Exported.xml</FileXmi>  
  <FileTarget>  
    <Documentation>YourProject.doc</Documentation>  
    <OutFileNodeSet>Opc.Ua.NodeSet2.YourProject.xml</OutFileNodeSet>  
  </FileTarget>  
</Xmi2NodeSetProject>
```

OPC Foundation Nodeset and External Nodeset are dependencies for the current project

OPC Foundation Nodeset

External Nodeset

Output files

The screenshot shows the XiMulator interface for a project named 'SFM'. The left pane displays a file tree with a red box highlighting the 'NodeSet' folder and its contents, which are linked to the 'OPC Foundation Nodeset' and 'External Nodeset' labels. The right pane shows a table of nodes with the following structure:

NodeId	BrowseName	NodeClass
ns=4;i=4780	1:BPRInteractionMessageType	ObjectType
ns=4;i=4783	1:ProductionJobMasterType	ObjectType
ns=4;i=4788	1:SFMProductionLineType	ObjectType
ns=4;i=4799	1:BatchProductionType	ObjectType
ns=4;i=4807	1:MachineProductionJobType	ObjectType
ns=4;i=4810	1:ProductionJobReferenceType	ObjectType
ns=6;i=7737	Default Binary	Object
ns=6;i=7738	Default Binary	Object
ns=6;i=7739	Default Binary	Object
ns=6;i=7740	Default Binary	Object
ns=6;i=7741	Default Binary	Object
ns=6;i=7742	Default Binary	Object
ns=6;i=7743	Default Binary	Object
ns=6;i=7746	<ProductionJobMaster>	Object
ns=6;i=7750	productionLine	Object
ns=6;i=7752	<batchList>	Object
ns=6;i=7760	ProductionJobMaster	Object

Below the table, a 'Timestamp' and 'Text' log shows:

- 22/02/2021 14:39:19 New projet folder set: C:\Samples\EMotors\Model_Fe
- 22/02/2021 14:39:19 Load XML file: C:\Samples\EMotors\Model_Feb_202



OPC UA

XiMulator – Options de génération

ProjectConfigurationDialog

ProjectUri

Generation options

NodeSet Reinit NodeIdMap Max Loop
 Documentation Add Inherited Attributes

Default Modelling Rule

Mandatory Optional Model Version
 Auto

C:\Samples\Demo_OpenOpcUa\Demo_XiMulator\Demo04\TankType.txt



Why a NodeIdMap file?

NodeIdMap files allow to keep the same nodeId between several generations of the project.
Deleting this file will cause the nodes associated with the project to be recreated.

Format du fichier

```
tns,http://Demo01
6
ns=1;s=EAID_933BEF1E_DC86_47a0_A278_44D1E89B9EE3 → ns=1;i=1
ns=1;s=EAID_73120335_8529_4d4c_8856_024BD6912A6B → ns=1;i=2
ns=1;s=EAID_5AB2D65B_97A6_468f_8954_7A4467BA4714 → ns=1;i=3
ns=1;s=EAID_FC314556_C047_4826_9AFC_0269C48AC0B4 → ns=1;i=4
ns=1;s=EAID_2C4B8552_8EF9_46c9_9515_EF9BE34D015D → ns=1;i=5
```



Questions ?



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