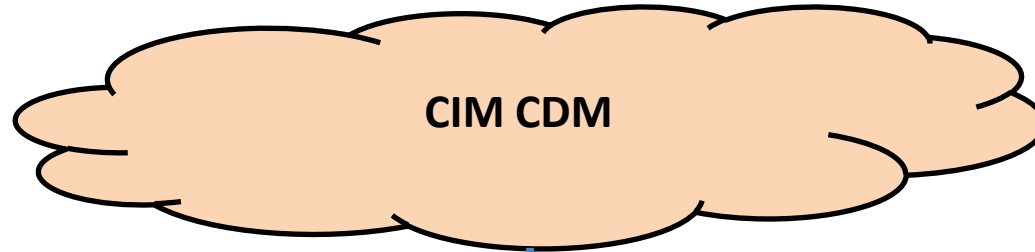


Tools and TC 57 Framework

Jean-Luc Sanson

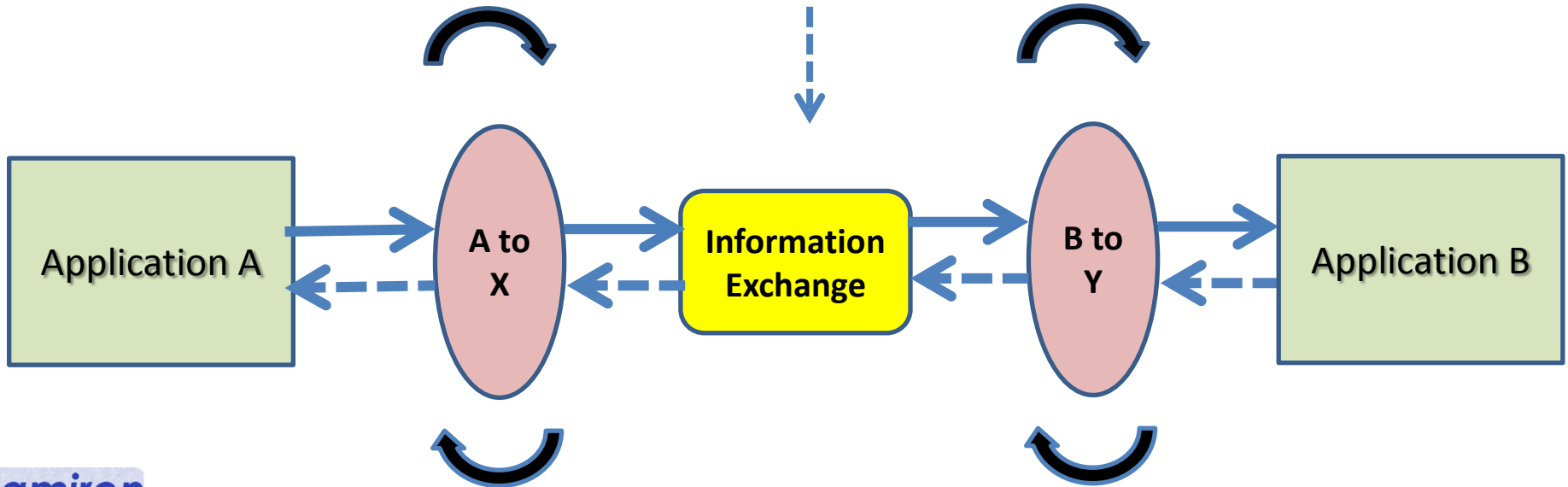
Zamiren



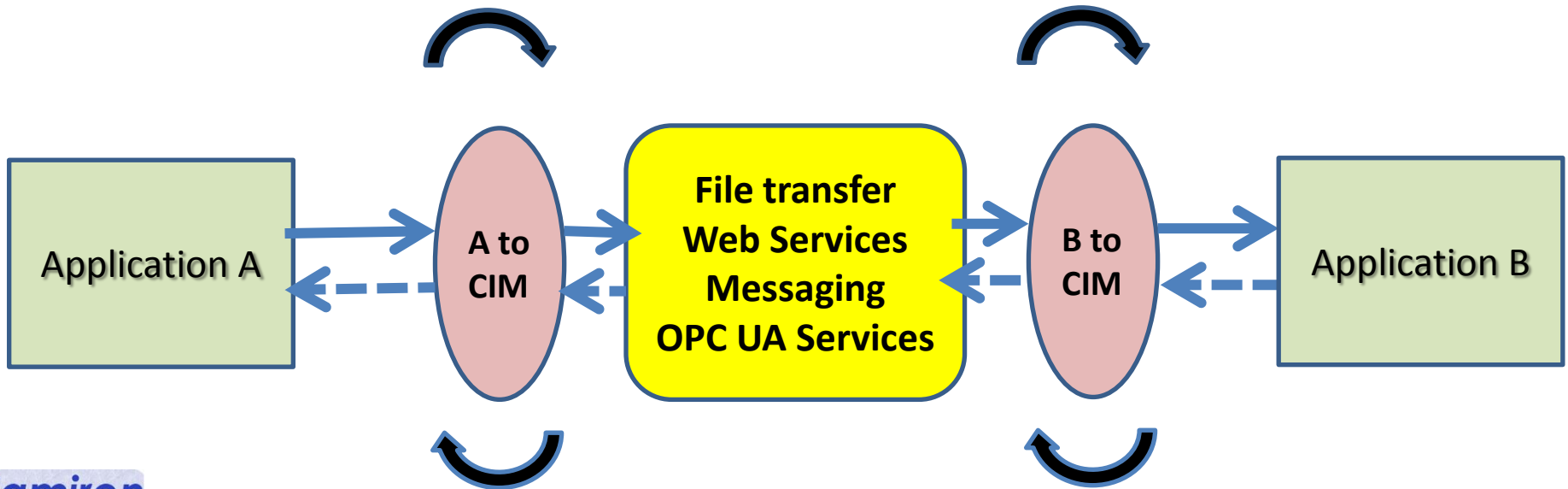
What is it about?



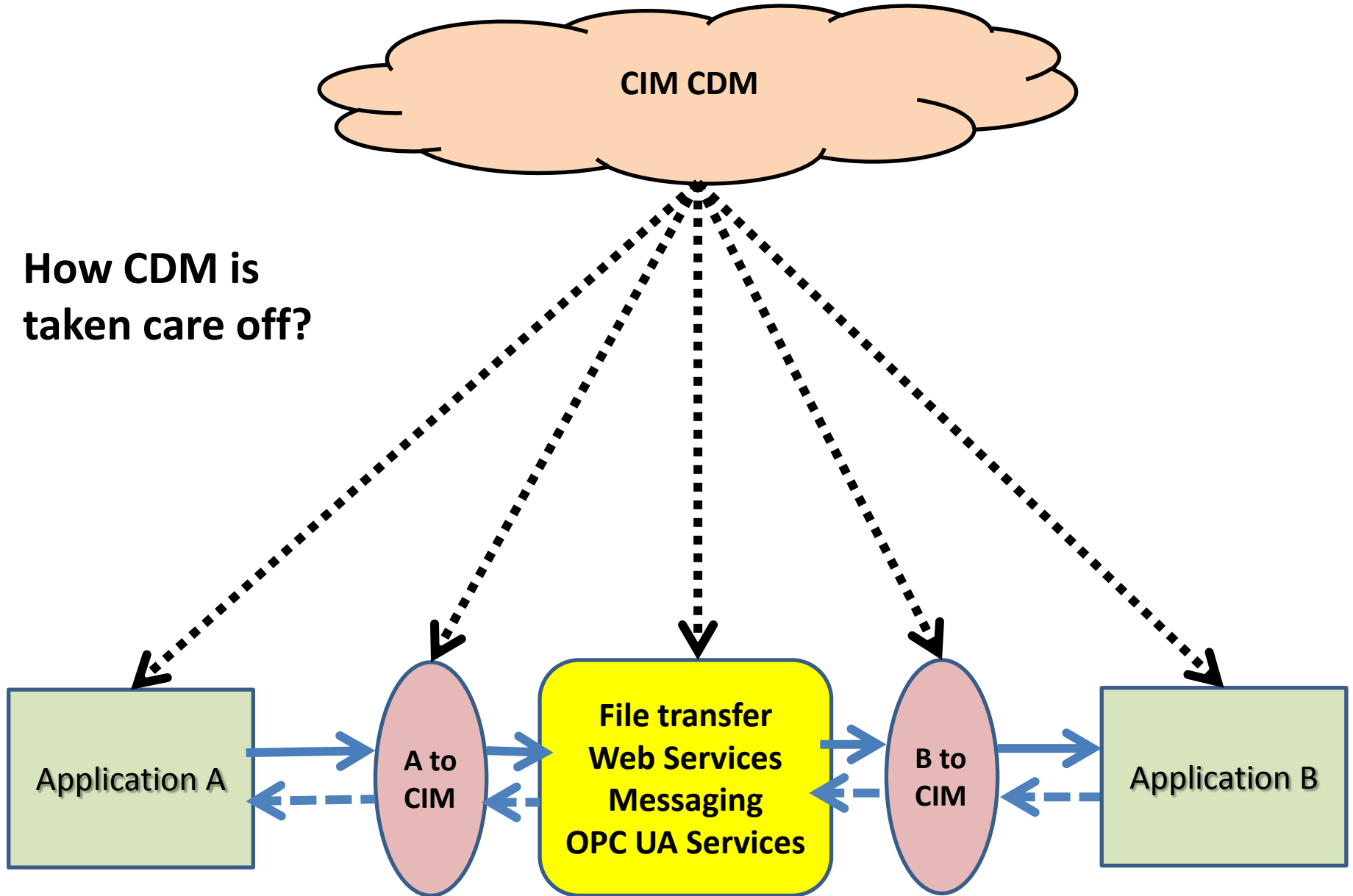
?



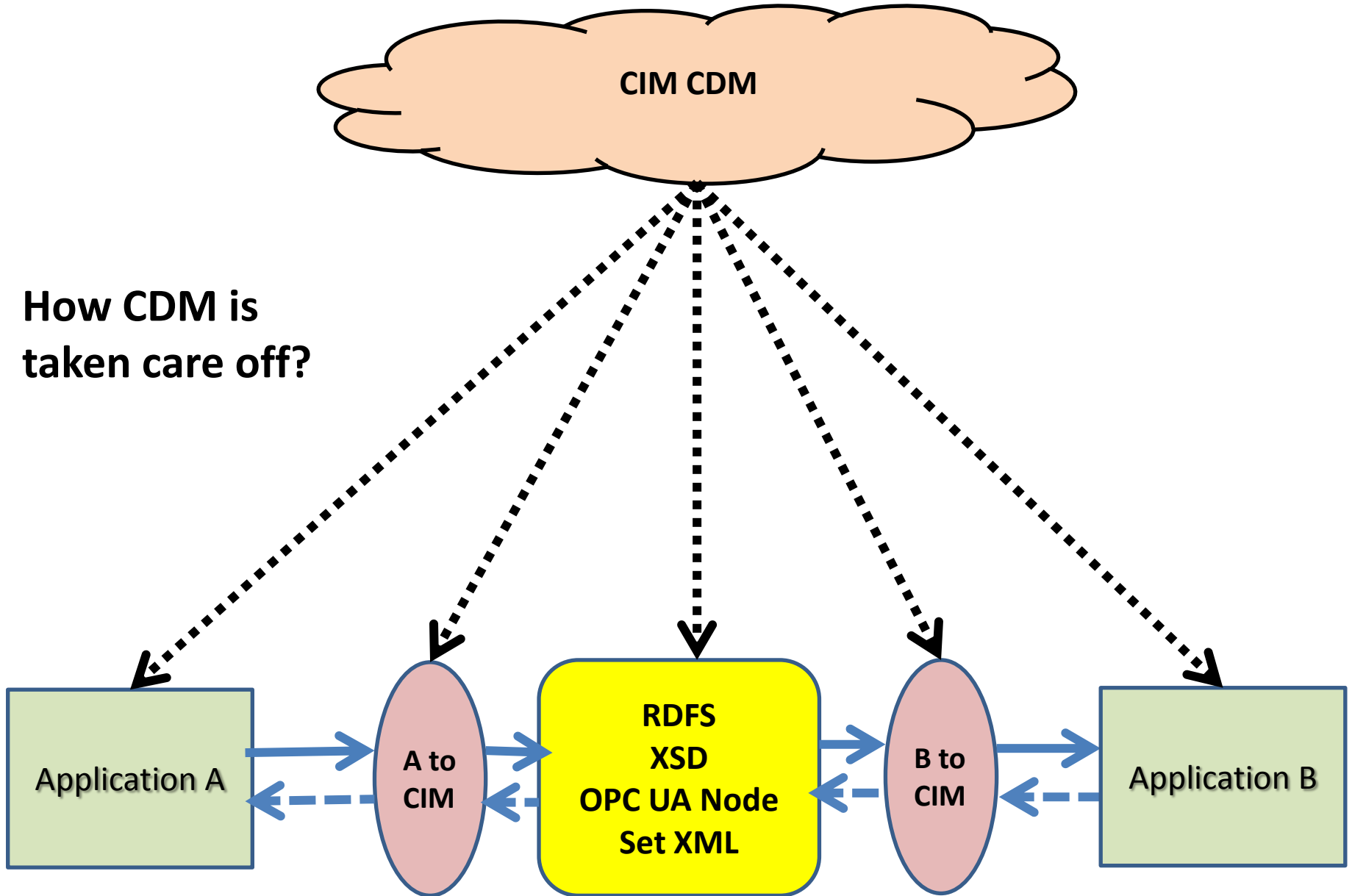
Information Exchange Technologies



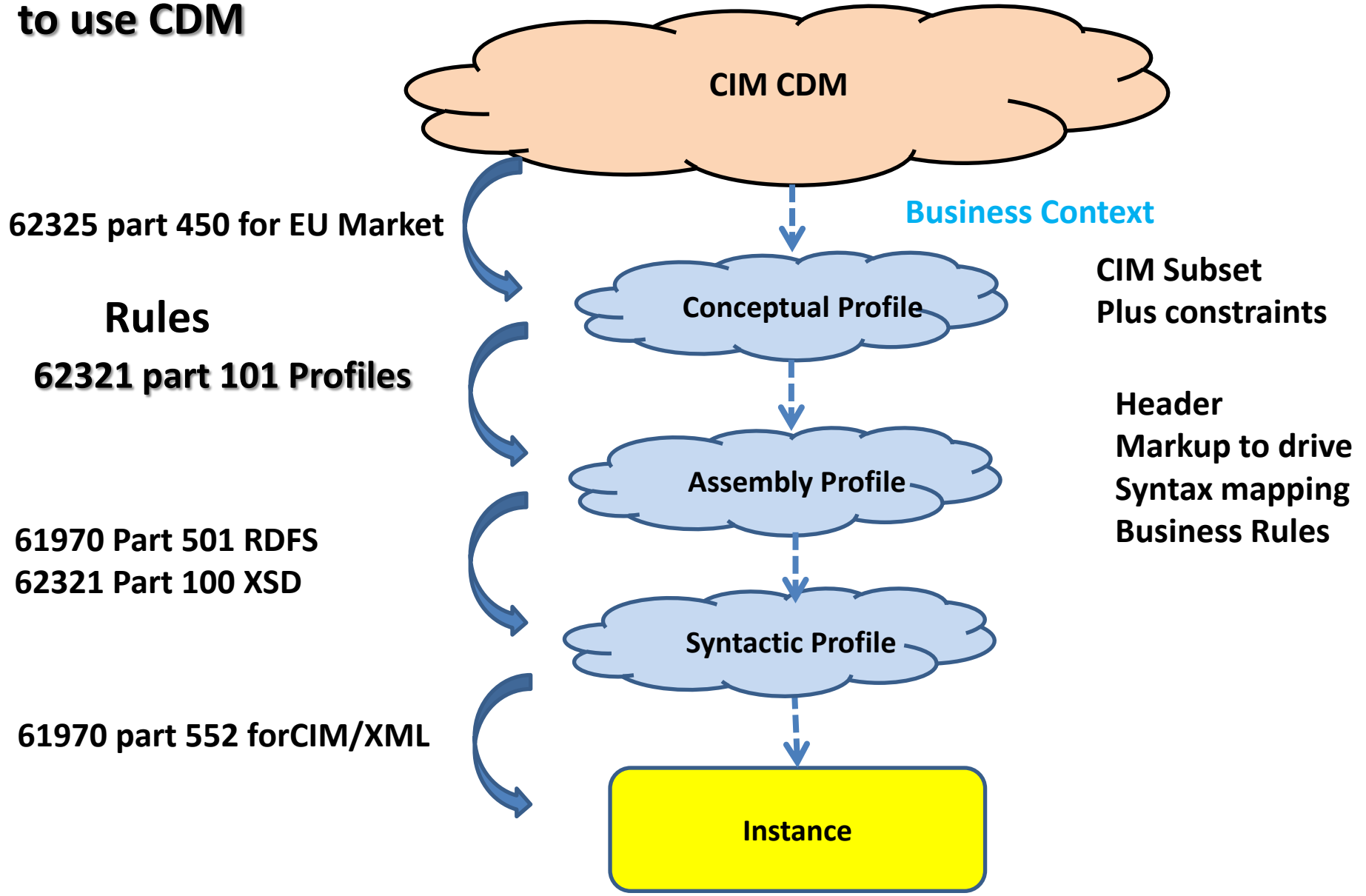
How CDM is taken care off?

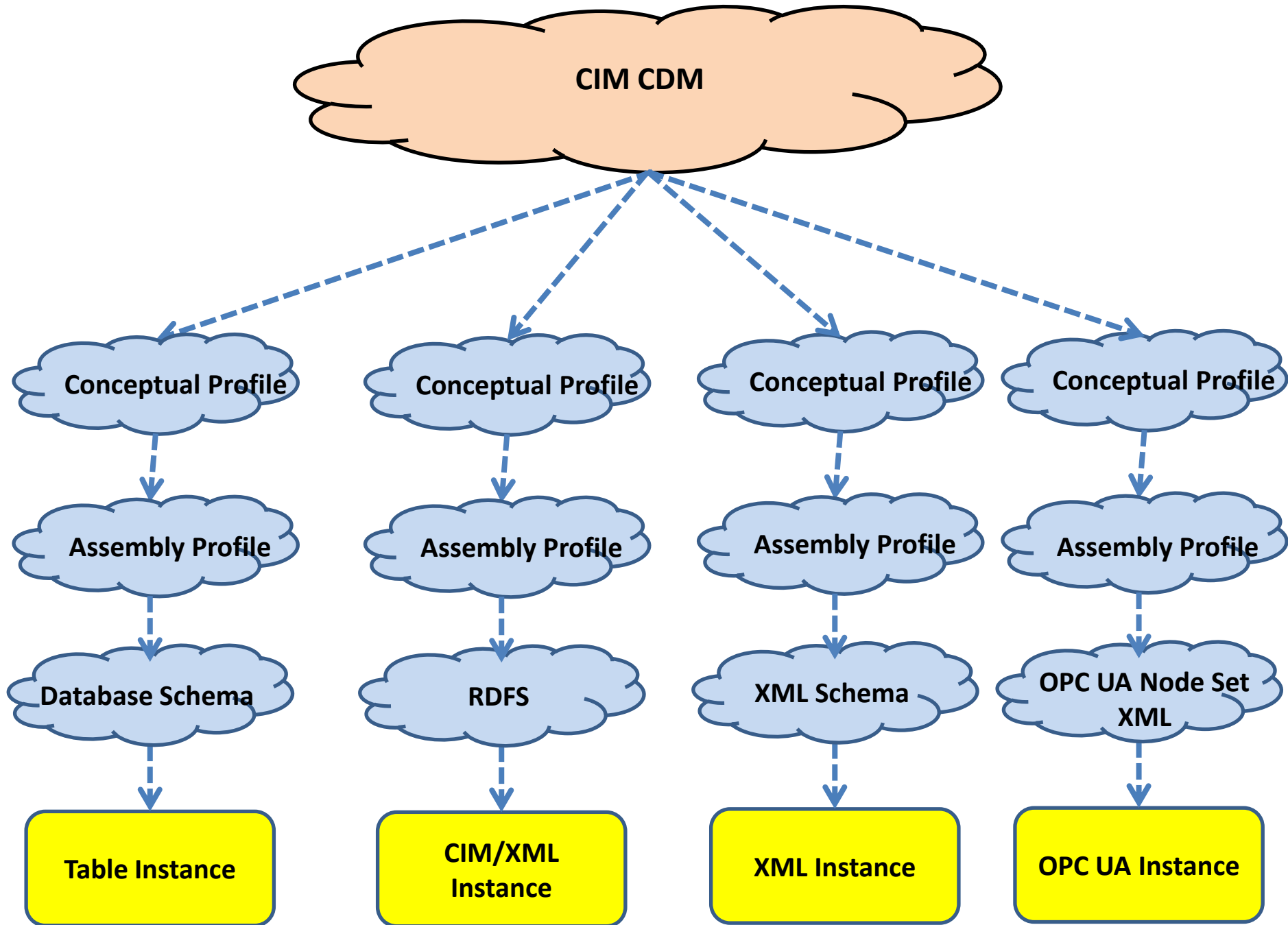


How CDM is taken care off?

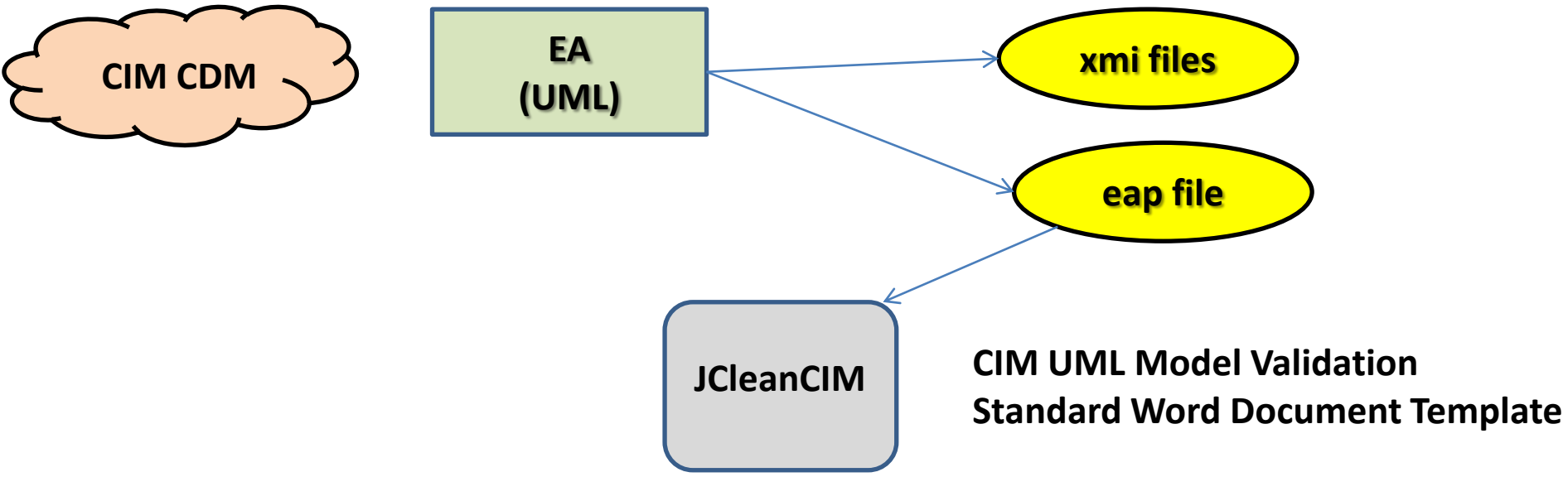


METHODOLOGY to use CDM

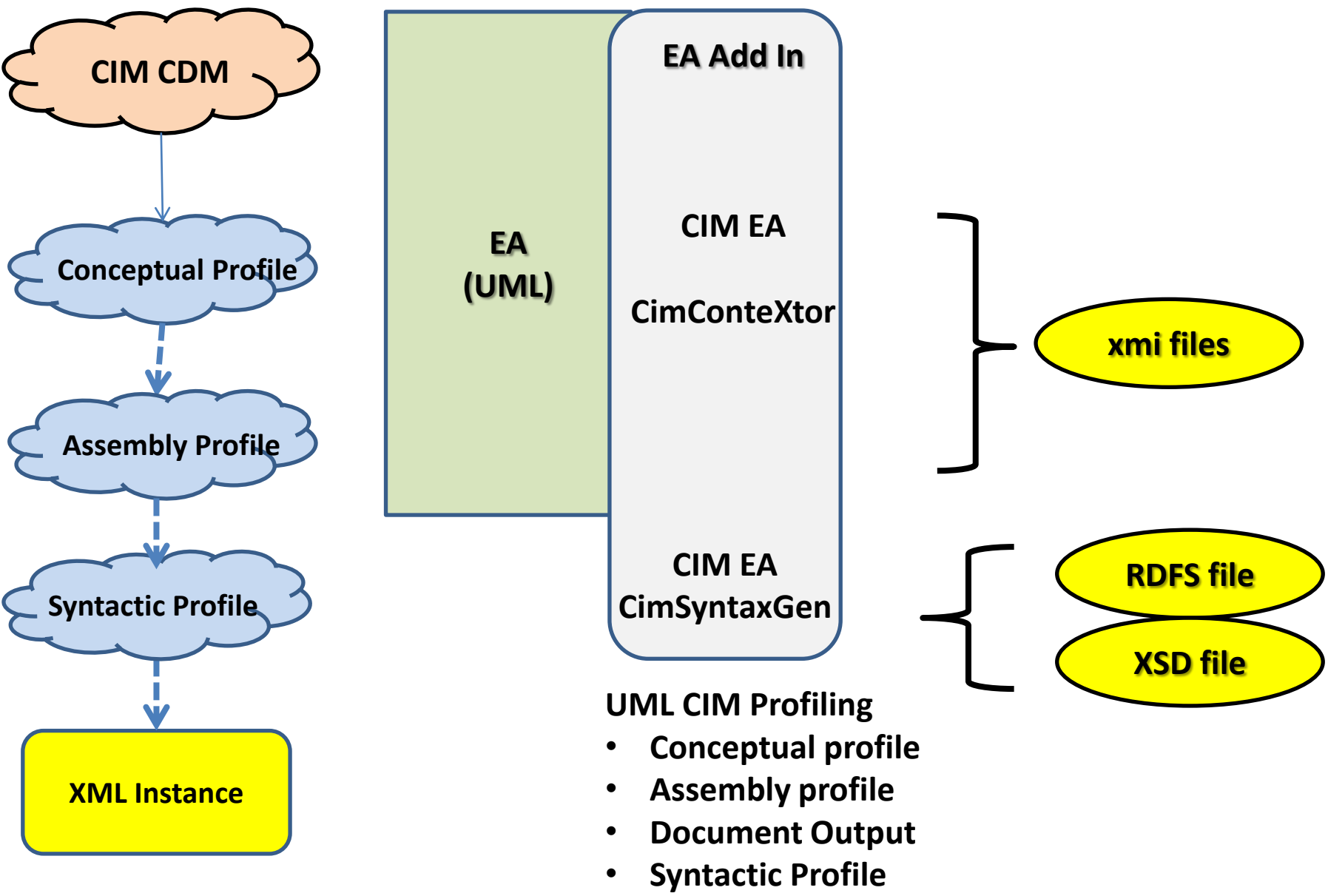




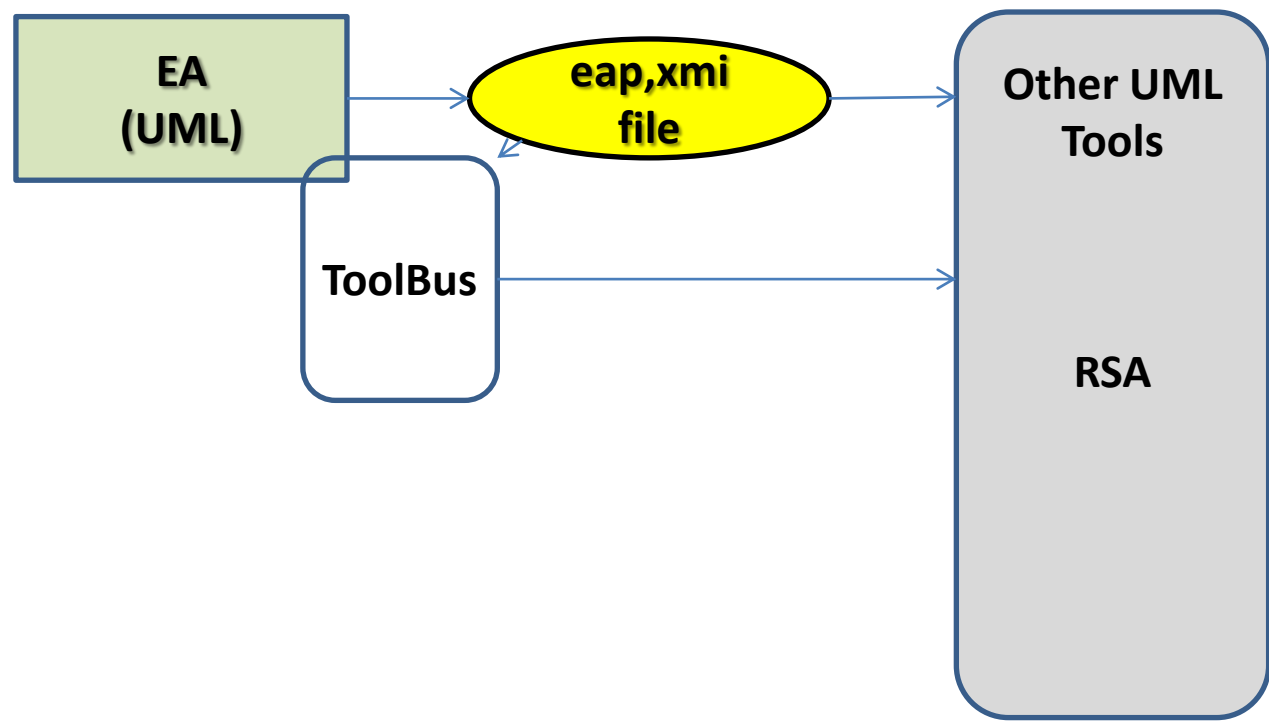
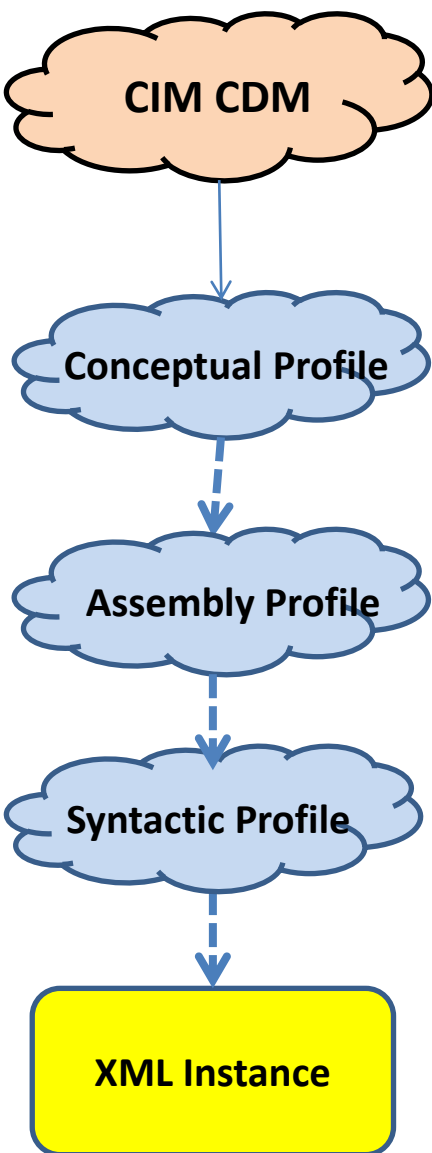
Tools for methodology



UML Tools and methodology

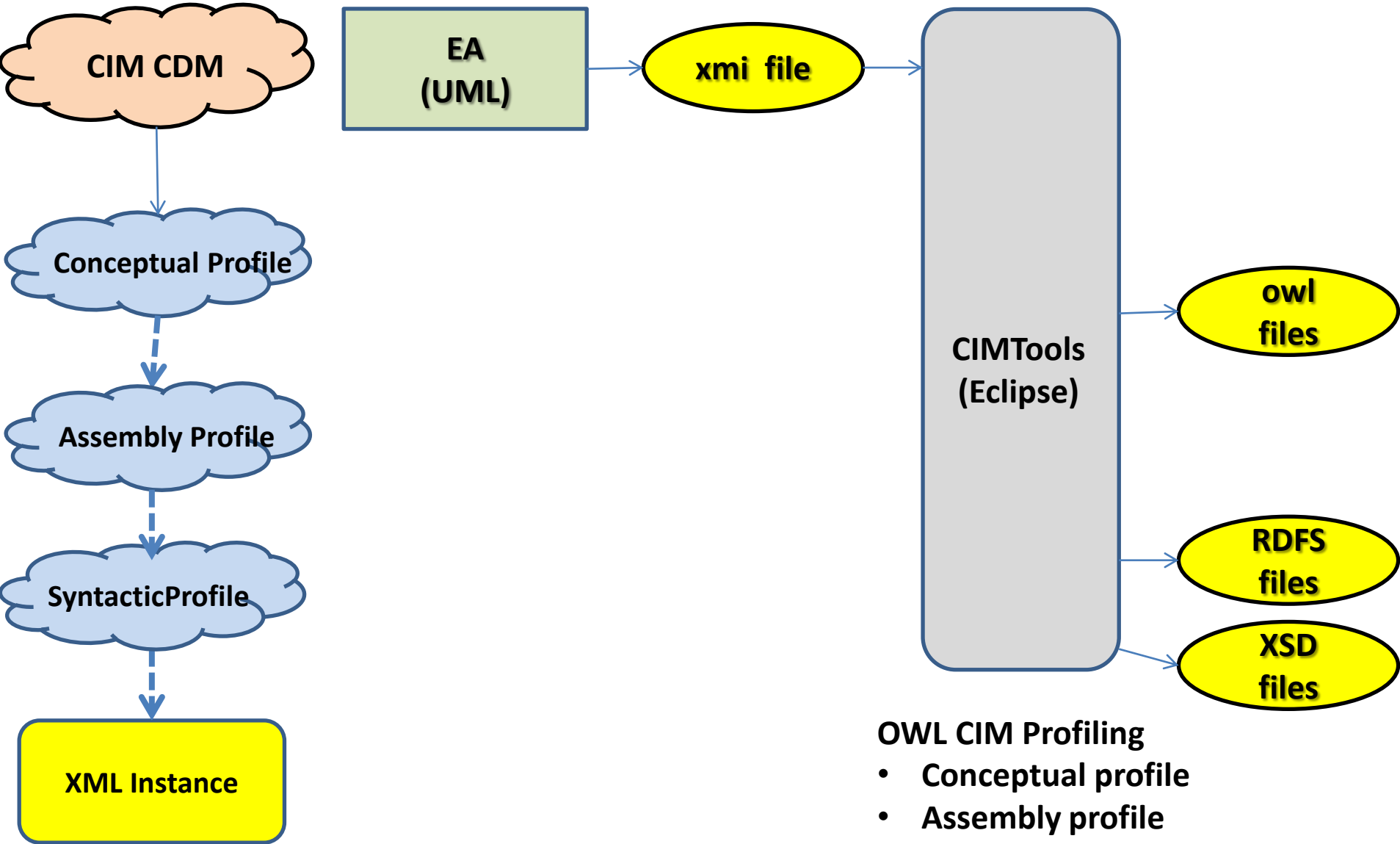


UML Tools and methodology



- UML CIM Profiling**
- Conceptual profile
 - Assembly profile
 - Document Output
 - Syntactic Profile

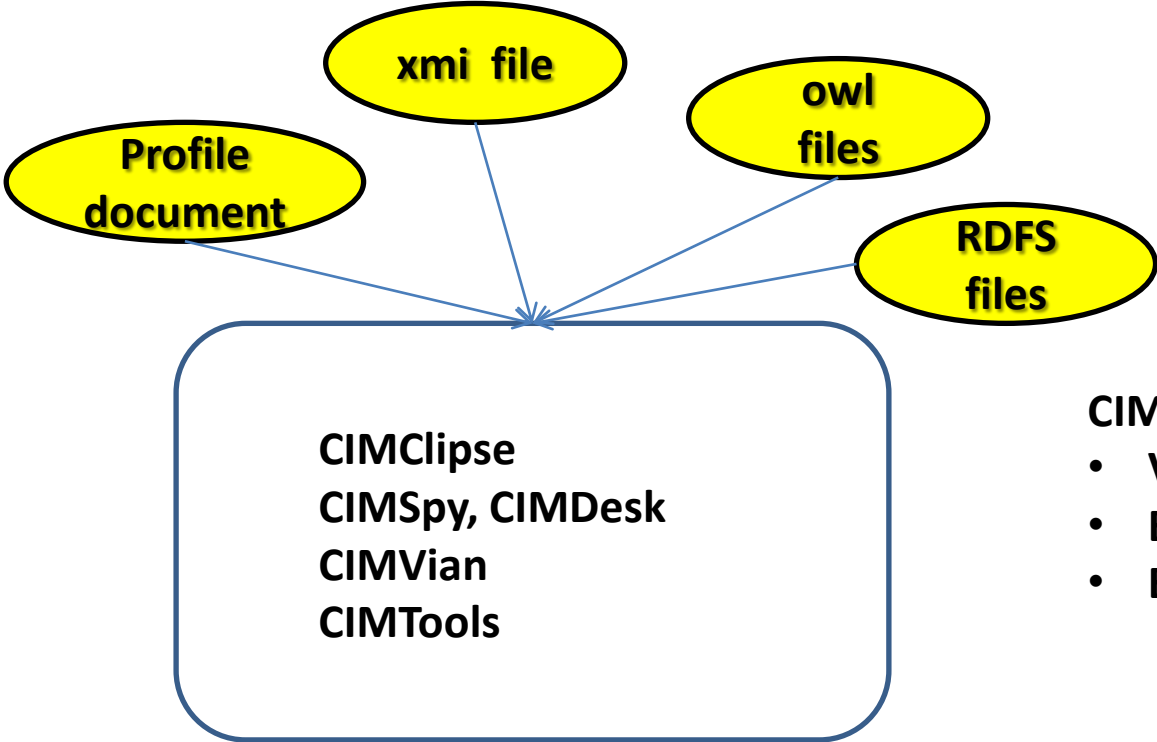
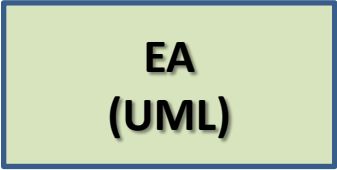
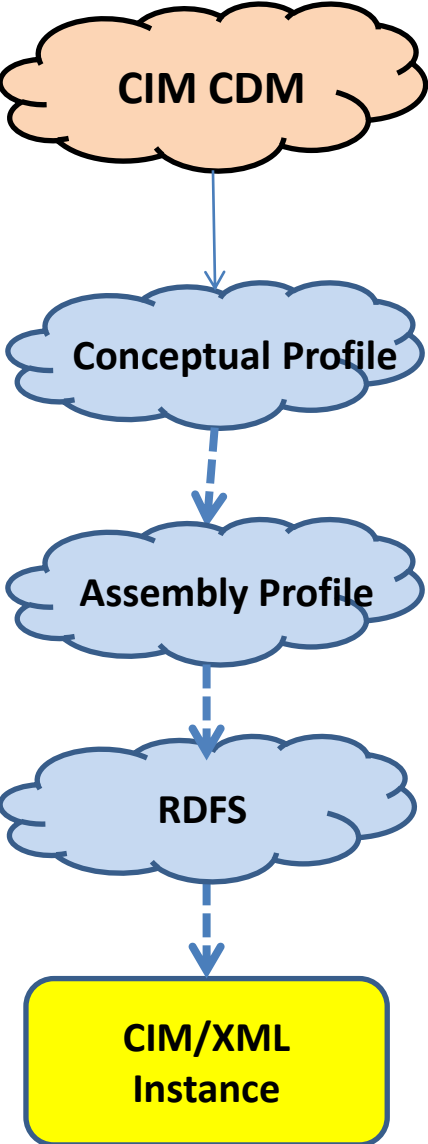
OWL Tools and Methodology



OWL CIM Profiling

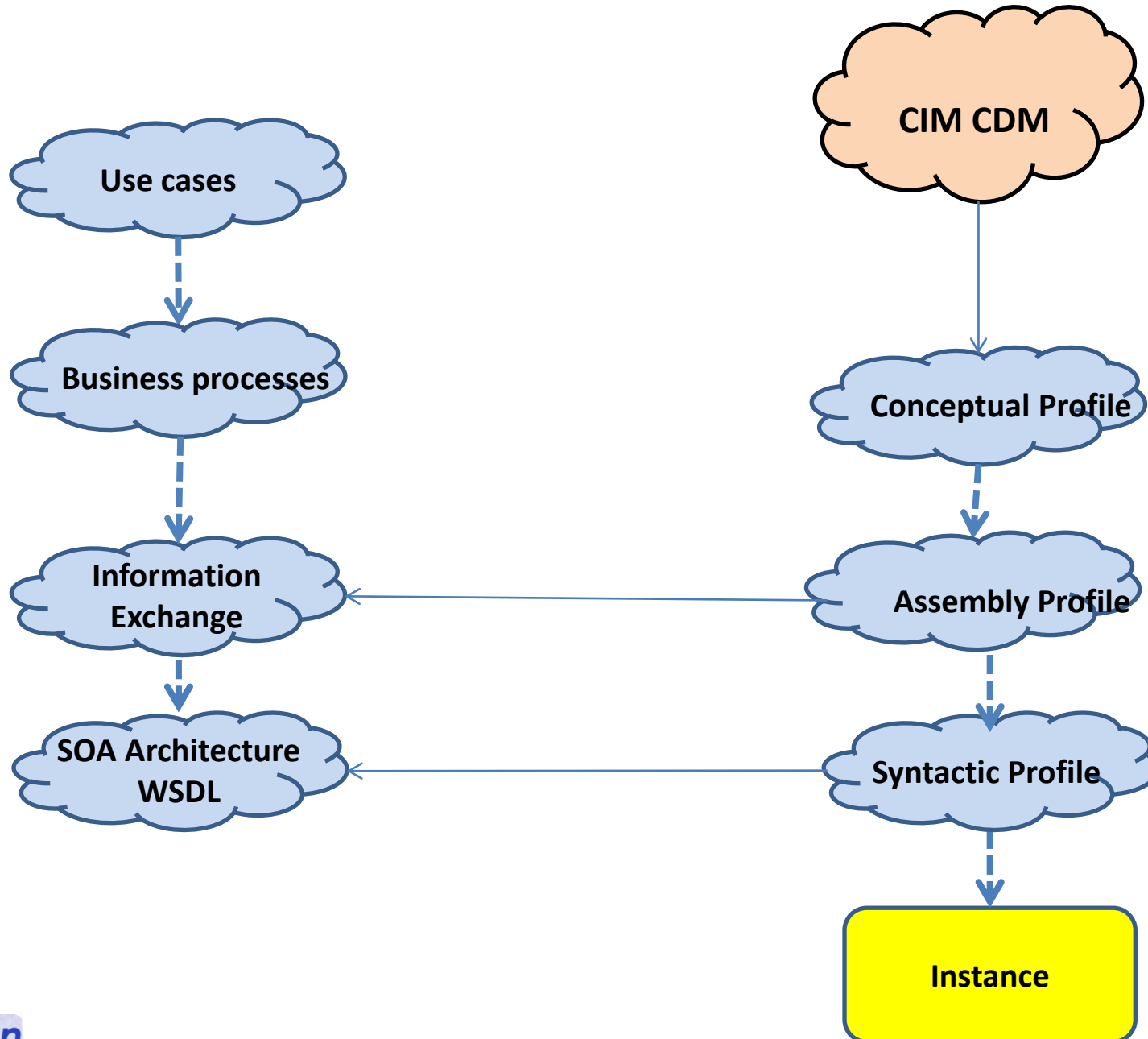
- Conceptual profile
- Assembly profile
- Document Output
- Syntactic Profile

Instance validation...



- CIM/XML
- Validation
 - Browsing
 - Editing

Use case scope



Excerpt from Cyril Effantin (EDF) survey

| Name | Supplier | Purpose | Platform | Description | Source | Actively maintained | Links | | |
|------------------------------------|---|---|-----------------------------|---|------------------------------------|---------------------|---|--|--|
| Enterprise Architect (EA) | Sparx Systems | UML model management and maintenance | | Visual modeling platform used to manage/maintain the CIM model and design artifacts, such as activity/sequence diagrams, profiles, message definitions. - comprehensive UML analysis and design tool - modeling for business, software, systems - full traceability from requirements to deployment - scalable, team-based repository - enterprise frameworks, BPMN, many third party add-ins available | Licensed for fee from Sparx System | Yes | http://www.sparxsystems.com.au | | |
| Rational Software Architect | IBM | UML model management and maintenance | Eclipse | Single tool platform to create, maintain, and govern industry information model-based message definitions and implementation code needed to process the message data | Licensed for fee from IBM | Yes | http://www.ibm.com/developerworks/rational/products/rsase | | |
| Eclipse | Eclipse consortium of companies. (Originally IBM) | Platform and modeling environment for developing Java-based plugins | | Eclipse is: - An Integrated Development Environment (IDE) for Java providing tooling to manage workspaces; to build, launch and debug applications; to share artifacts with a team and to version code; and to easily customize the programming experience - A platform because it is not a finished application per se but is designed to be extended indefinitely with more and more sophisticated tooling built as plug-ins | Eclipse Public License | Yes | http://www.eclipse.org | | |
| CIM EA | Xtensible Solutions | CIM modeling and design | Enterprise Architect Add-in | CIM EA extends Enterprise Architect to provide a single environment in which users can manage the IEC Common Information Model (CIM), CIM Profiles, and CIM-based artifacts such as RDF and XSD message generation. With CIM EA, users can create and edit CIM Profiles as standard UML models and generate CIM-based artifacts from those models, all within Enterprise Architect. | Freeware | Yes | www.cimea.org | | |
| CIMValidator | EDF R&D | Validation of UML CIM profiles and UML message assembly | Enterprise Architect Add-in | Based on an enhanced TC57 modelling framework following UN/Cefact approach, CIMValidator enables to validate the UML Models for CIM profiles and UML CIM messages. This prototype was made firstable for ENTSO-e Market EDI needs when defining European CIM Market Extensions. This prototype is still under development and is evaluating with the integration of other functionalities such as : - CIMSync : synchronization of UML Models stack (profiles, messages) with the evolutions of the CIM - ENTSO-e XSD Builder : automate the generation of XSD models based on ENTSO-e market EDI needs. | To be updated | Yes | Contact cyril.effantin@edf.fr | | |

Excerpt from Cyril Effantin (EDF) survey

| Name | Supplier | Purpose | Platform | Description | Source | Actively maintained | Links | | |
|---------------------|----------------------------------|---|---|--|-------------------------|------------------------------------|--|--|--|
| CIMBench | BTC and EWE, Germany | Develop and generate CIM-based XML schema for message payloads | Dedicated software | Used for: - development of CIM-based XML schema - exploring the CIM - comparing CIM models | BTC | ? | Contact wolfram.krause(at)ewe.de or ralf.walther(at)btc-ag.com | | |
| CIMCLipse | Supelec and EDF, France | Umbrella name for tools used for CIM-related tasks on Eclipse or its plugins | Eclipse | Available tools include: - Integration of the CIM into the OMG modelling stack (Systems, model, meta model, meta meta model).... In order to bring MDE (model driven engineering) to CIM inside Eclipse. - CIM UML/Ecore models compatible with the UML/Ecore layers of Eclipse - A tool to check that a network model instance file conforms to a profile using OCL - Tools to work with Rose MDL files inside Eclipse - ATL transformations used for promoting CIM UML to CIM Ecore, and other utilities | Open Source | Yes | http://www.di.supelec.fr/software/cimclipse | | |
| CimConteXtor | Andre Maizener | CIM UML model-based tool to transform UML model to message schemas | Enterprise Architect Add-in | Follows UN/CEFACT methodology with layering from information model to contexts to create RDFS, XSD, and HTML for message/file schemas | Freeware | Yes | http://www.cimcontextor.net | | |
| CIMinEA | Tatjana Kostic & Kendall Demaree | Create IEC document content, validation, Rose migration, and model merge | Enterprise Architect | Primarily used by IEC to create IEC-compliant standards documents from the CIM UML | Open Source Freeware | No - being replaced with JCleanCIM | http://www.cimcontextor.net CIMinEA | | |
| CIMPhony | Open Grid Systems | Support for RDF, profiles, validation, transformation, Web services, topological processing, geographical visualization | Java-based OAGi Bundles with Eclipse-based UI | Framework for loading and interpreting CIM data in-memory and various tools built on top of framework for using CIM data. Tools include: - CIM/RDF XML import, view, and edit - Export RDF XML - validate network models in RDF XML (ENTSO-E, CPSM, CDPSM) - Create Difference models for incremental updates - Conversion between different network model instances - Create Google Map views of models with embedded geographical data | Open Source | Yes | http://cimphony.org/cimphony | | |
| | | | | | | | | | |

| Name | Supplier | Purpose | Platform | Description | Source | Actively maintained | Links | | |
|------------------|---|--|--|---|--|---------------------|--|--|--|
| CIMSpy | Power Info | CIM/RDF/XML file browser, editor, and validator | SE - IE 5+ on PC EE - distributed Web-based application | CIMSpy Standard Edition (SE) is a stand-alone DHTML client application (no internet connection) used for browsing and limited validation of CIM/XML files based on RDF schema to support EPRI CIM IOP Tests. CIMSpy Enterprise Edition (EE) is a web-based | SE - Freeware under GNU public licenses | Yes | www.powerinfo.us/WebPages/opensource.html | | |
| CIMTool | Langdale Consultants | CIM profile and message schema creation and validation | Eclipse plug-in | Used to: * read and merge CIM and local UML models in XML form * browse models and check inconsistencies * generate equivalent OWL ontologies * create and edit profiles * generate XML schemas, OWL and RDFS ontologies for profiles * validate instances against profiles (including very large CIM/XML instances) | Open Source | Yes | www.cimtool.org/ | | |
| CIMvian | UISOL | CIM RDF/XML graphical browser and editor | ? | Tool to visualize and analyse CIM RDF schemas and CIM XML instance files. | Free license | ? | uisol.com/uisol/CIMvian/CIMvian.htm | | |
| crxcat | Available on CIMug Sharepoint METI group site | CIM/RDF/XML file concatenation tool | Java code on Eclipse | Single purpose tool to concatenate CIM/RDF/XML files for input into tools that require a single document as input. | Freeware | ? | crxcat | | |
| JCleanCim | Tatjana Kostic | CIM UML validation cleanup and documentation tool | Eclipse | Java application to create IEC standard compliant Word documents from UML model. Includes validation of UML model prior to auto-generating Word document. It is intended to be used in conjunction with CIMTool but not dependent on it (?) | Open Source | Yes | jCleanCim | | |
| MD3i | Xtensible Solutions | Methodology and tools to develop CIM-based ESM and generate design-time canonical data models. | Enterprise Architect Add-in | The MD3i Framework is an enterprise semantic modeling methodology combined with a set of design patterns, governance guidelines, industry standard models, and EIM best practices that Xtensible's customers use to establish and maintain a strategic EIM program. Used to: - create and maintain an Enterprise Semantic Model (ESM) based on the CIM - define contexts/profiles - auto-generate canonical models, including XML schemas for message payloads, power system network models, and data models/DDIs for data warehouses based on the ESM | No-cost license from Xtensible Solutions | Yes | xtensible.net/solutions/md3i-methodology | | |
| CIM Desk | Power Info | CIM/RDF/XML file browser, editor, and validator | SE - IE 5+ on PC EE - distributed Web-based application | CIMDesk is a special edition of CIMSpy built for the purpose of ENTSO-e network requirements. | | Yes | www.powerinfo.us/WebPages/opensource.html | | |

Conclusion

- **Methodology is the basis for CIM CDM use**
- **Standards are coming**
- **Already some tools**
- **But to make your applications aware of CIM, you might need to know some technologies**
 - xmi
 - rdfs
 - xsd
 - owl