PAPYRUS IN SDOS

Eclipse / Papyrus / Gendoc

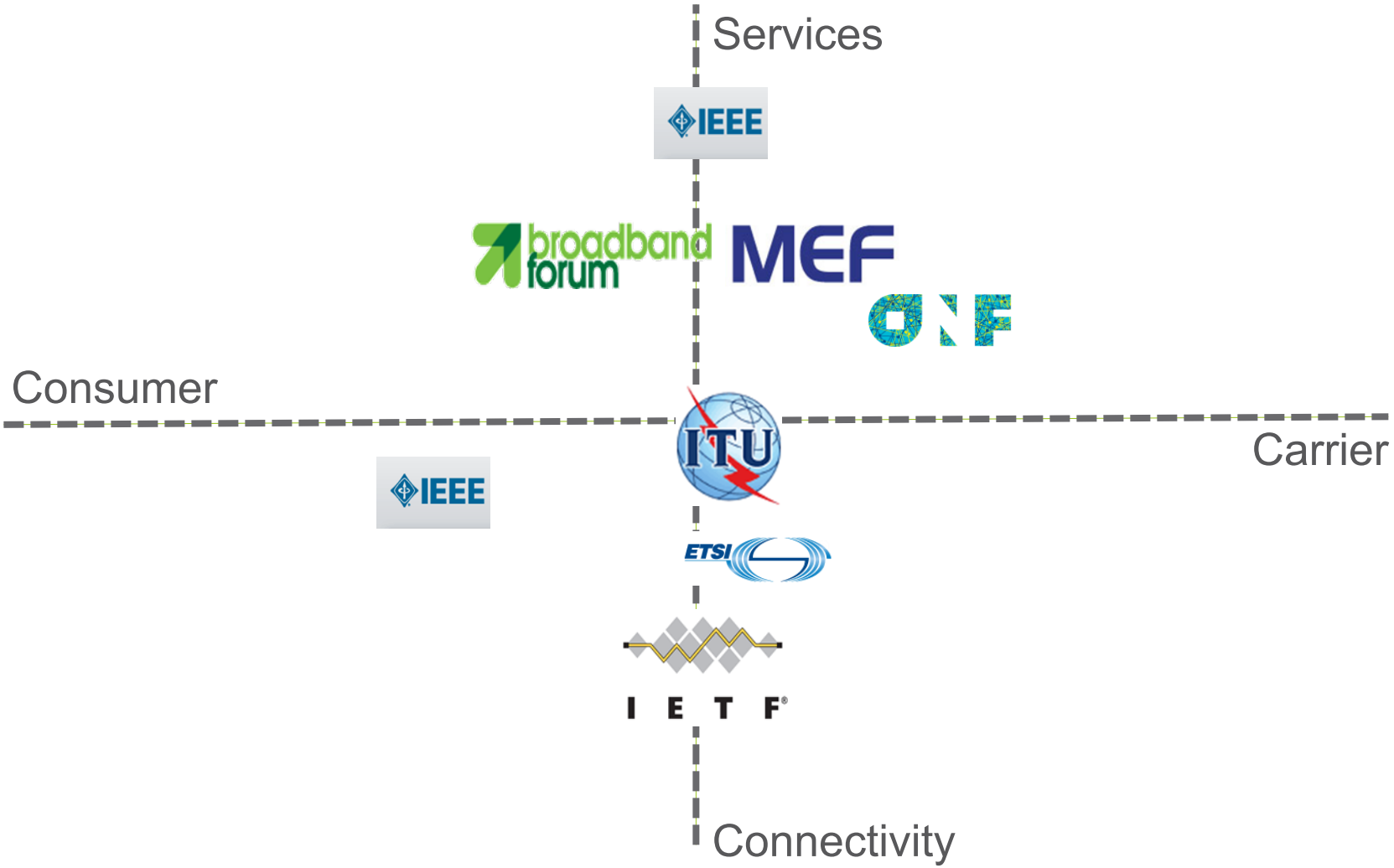
PURPOSE

- Traditional Standards Setting Organizations are evolving
  - Software Definition and Virtualization are driving working methods
  - Tooling is changing
- Provide an overview of how Papyrus and Gendoc are being used

AGENDA

- SDO Landscape
- Example of how MEF is reacting
- Example of ONF Conventions
- Provide pointers to open source work that is using Papyrus
- Overview of some of the issues that are under discussion

SDO LANDSCAPE



HOW SDOS ARE EVOLVING

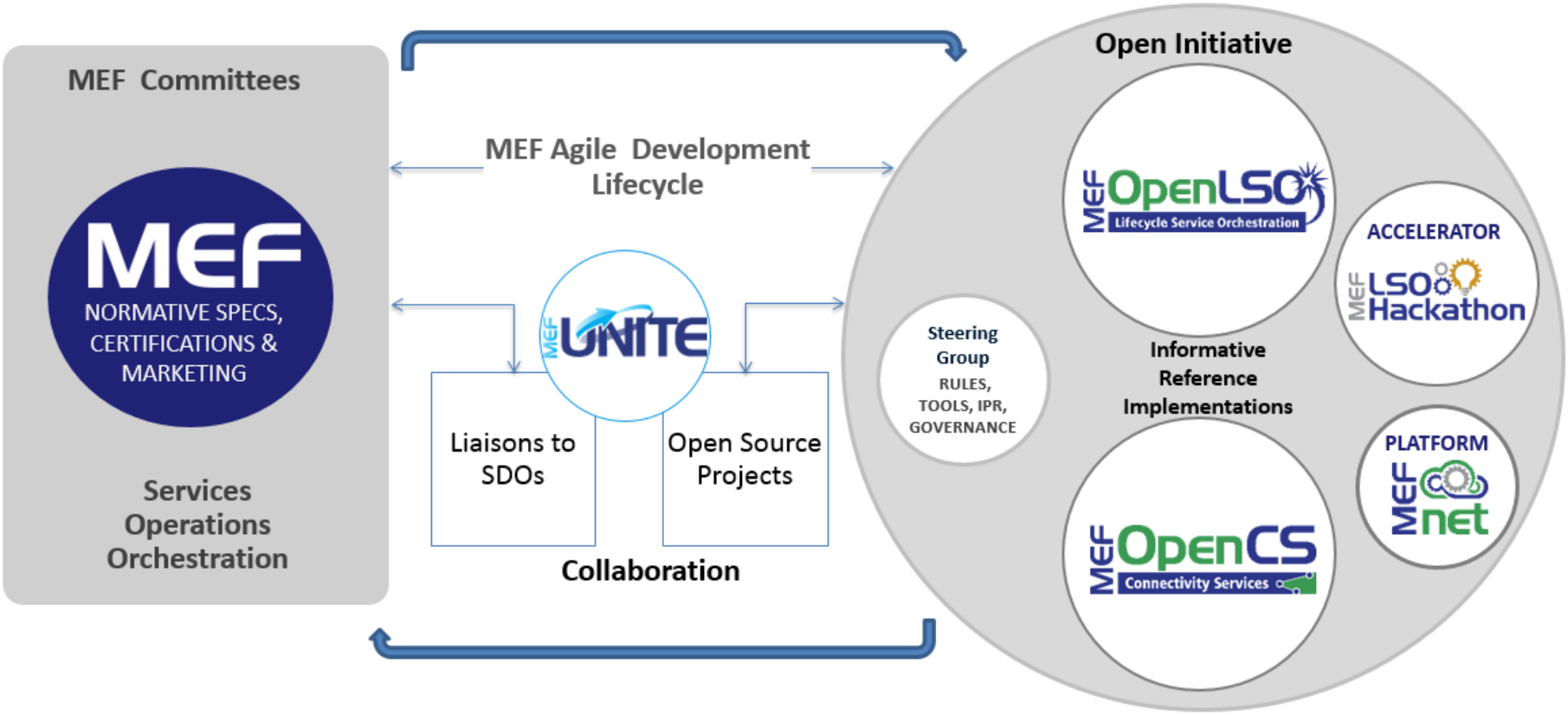
- Need for Speed
  - The traditional working methods take too long
  - Communication with other groups hindered by IPR/Copyright/ Bylaws
- Interaction with Open Source Community
  - Open Source doesn't work with "liaisons"

- One item that is changing… Introduction of tooling that has traditionally been used in software development

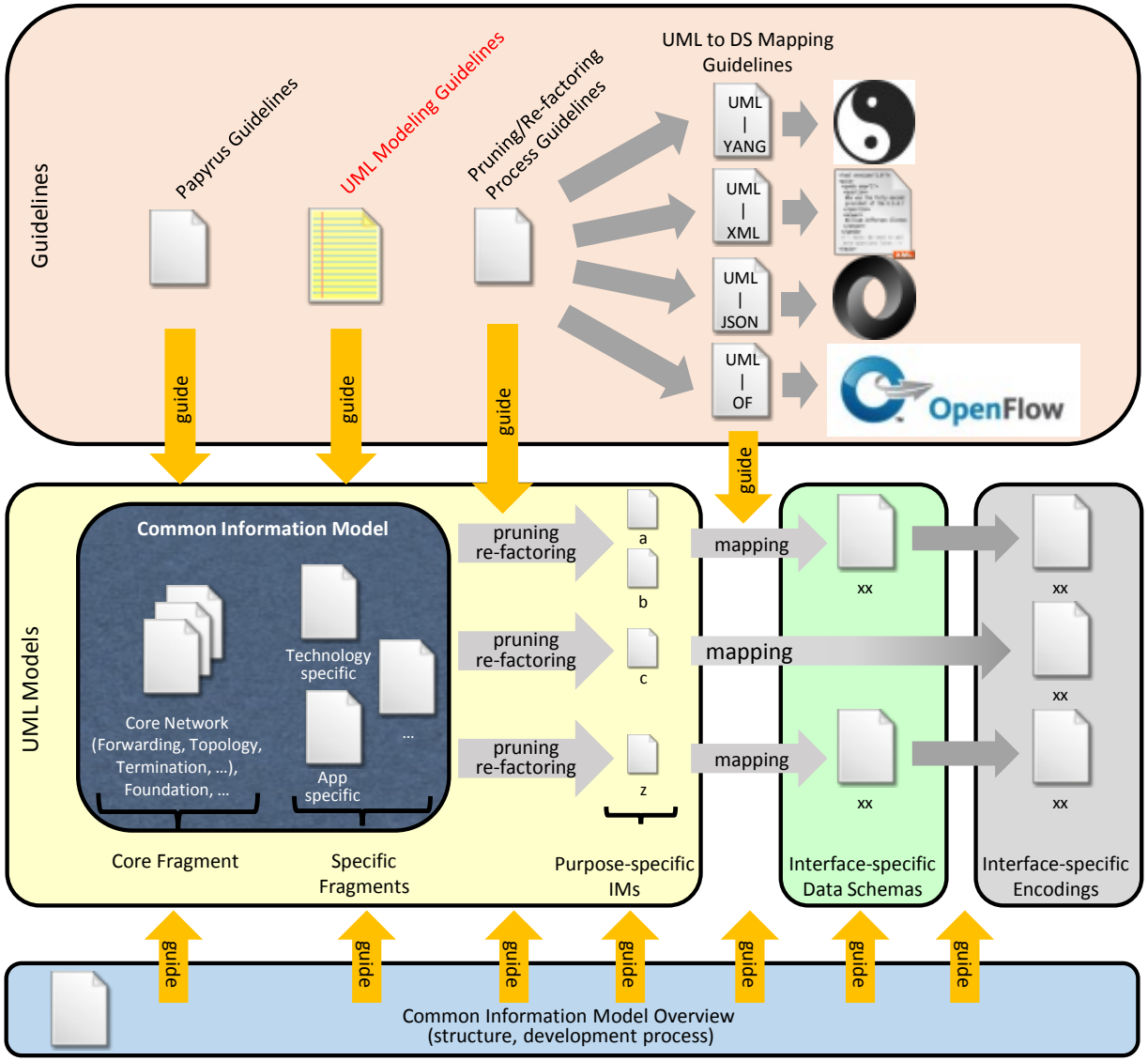
TOOLING

- Basic tools that are showing up
- Revision Control System
  - Like GIT
- Bug tracking
  - Jira
- Wiki
  - Various tools (some include blogs etc)
- Development Environment Framework
  - Like Eclipse
- Information Modeling tool
  - Papyrus
- Automatic Documentation Generation
  - Gendoc

MEF EXAMPLE


MEF Committees
MEF
NORMATIVE SPECS, CERTIFICATIONS & MARKETING
Services
Operations
Orchestration
MEF Agile Development Lifecycle
MEF UNITE
Liaisons to SDOs
Open Source Projects
Collaboration
Open Initiative
MEF OpenLSO
Lifecycle Service Orchestration
ACCELERATOR
MEF LSO Hackathon
Steering Group
RULES, TOOLS, IPR, GOVERNANCE
Informative Reference Implementations
PLATFORM
MEF net
MEF OpenCS
Connectivity Services

ONF EXAMPLE


Guidelines
Papyrus Guidelines
UML Modeling Guidelines
Pruning/Re-factoring Process Guidelines
UML to DS Mapping Guidelines
UML | YANG
UML | XML
UML | JSON
UML | OF
OpenFlow
guide
UML Models
Common Information Model
Technology specific
Core Network (Forwarding, Topology, Termination, ...), Foundation, ...
App specific
...
pruning re-factoring
a
b
c
z
mapping
xx
Core Fragment
Specific Fragments
Purpose-specific IMs
Interface-specific Data Schemas
Interface-specific Encodings
Common Information Model Overview (structure, development process)

OPEN SOURCE

- OpenNetworkingFoundation
  - EAGLE-Open-Model-Profile-and-Tools
- Profile
  - Stereotypes for each artefact in the meta-model
- Guidelines
  - Papyrus
  - UML
  - Modeling – how to prune and refactor and extend
- UML-YANG tools
  - xmi2yang
- JSON tools

IISOMI

- Informal Inter-SDO OPEN Model Initiative
  - Basically, modelers discuss
  - Drive coordination through each SDO's normal process
  - Melds Open Source Tooling with standard SDO process
  - Avoids multi-SDO issues

PAPYRUS

- Conventions and Guidelines
  - Installation Help
  - Creating Projects
  - Importing Models
  - Using GitHub
  - Organizing Files
  - Adding Classes/Properties/Data Types/Stereotypes
  - Using Fragments
  - Known Issues

- https://github.com/OpenNetworkingFoundation/EAGLE-Open-Model-Profile-and-Tools/tree/UmlTools/Papyrus

GENDOC EXAMPLE

IV Appendix IV (informative): ITU-T G.874.1 Information Model

This informative annex contains the result of the generation of the ITU-T Information model using gendoc.

IV.1 Object Classes

Qualified Name: G.874.1_v2.11-model::Object Classes

IV.1.1 Classes

IV.1.1.1 DelayMeasurementCapability class

Qualified Name: G.874.1_v2.11-model::Object Classes::DelayMeasurementCapability
Description: Basic attribute: delayMeasurementRole
Description: Basic operations: configureDelayMeasurementRole, invokeOnDemandDelayMeasurement
Description: This object class provides the delay measurement function.
Abstract class
Applied Stereotypes:

Table 1 Attributes for Class DelayMeasurementCapability

Attribute Name	Type	Mult.	Description	Applied Stereotypes
delayMeasurementRole	DelayMeasurementRole	1	This attribute indicates that the object is able to act as the source of a delay measurement. It represents the value of MI_DM_Source in the source and sink atomic functions.	

IV.1.1.2 Gcc0TerminationPoint class

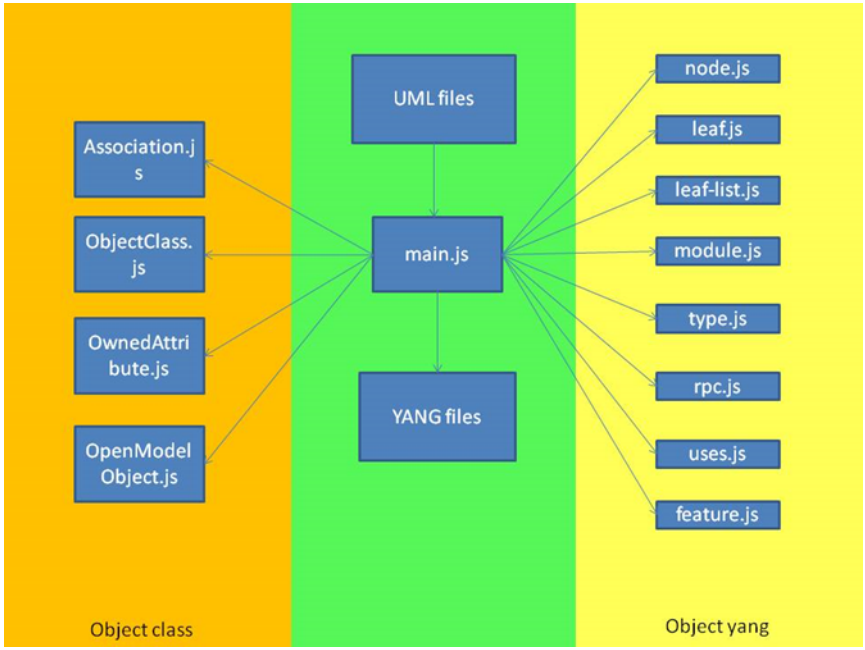
Qualified Name: G.874.1_v2.11-model::Object Classes::Gcc0TerminationPoint
Description: Basic attribute: application
Description: Abstract class for Gcc0TerminationPoint class family.
Abstract class
Applied Stereotypes:

Table 1 Attributes for Class Gcc0TerminationPoint

Attribute Name	Type	Mult.	Description	Applied Stereotypes
application	String	1	This attribute indicates the applications transported by the GCC channel. Example applications are ECC, (user data channel).	

AUTOMATIC YANG GENERATION

- Conventions and Tools for converting an Information Model in UML to YANG
- https://github.com/OpenNetworkingFoundation/EAGLE-Open-Model-Profile-and-Tools/tree/UmlYangTools



NON-TOOL ISSUE

- Biggest issue we have…
  - Getting unified models agreed
- There are 10+ organizations all writing information and data models in the transport network connectivity space
- All are working on some part of the solution (and some overlapping)
- Traditional Bylaws/Copyright/IPR issues are slowing sharing of information

ECLIPSE AND PAPYRUS PAIN (MARS)

- Multi-developer issues
- Upgrading (even within Mars) breaks diagram layout
- Relative pathname issue when cloning from GIT
- Changing of profile/stereotype causes all values to be lost
- “Redefined property” as well as the ”Subsetted property” are just lists, they don’t provide any context checking
  - A guideline has been created to create a copy of inherited attributes in order to redefine their characteristics.

ERICSSON