



INTEROPERABILITY TEST "CIM FOR SYSTEM DEVELOPMENT AND OPERATIONS" 2010

APPENDIX C: TEST RECORD FORMS

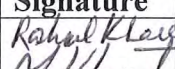
PART 1

1.1 TEST RECORD FORM TEMPLATES

1.1.1 TOOL SUMMARY FORM (PER TOOL)

[illegible]

- Test cases (3 to 8, 11 to 14, 17 to 26, 28 to 31) related to Power flow, Short-circuit analysis, Dynamics, and Incremental are not currently part of ABB CIM Explorer software tested in this ENTSO-E IOP.

Date	Vendor: ABB		ENTSO-E	
	Name	Signature	Name	Signature
16-JUL-10	Rahul Khare		Chavdar Ivanov	
	Mostafa Khadem			

1.1.2 SINGLE TEST RECORD FORM

Test No: 1_1	Tool: ABB MMS CIMExplorer	Score: Pass
Test files per MAS\NL_MAS		
Import		Export
1. ENTSOE_16_NL_TP.xml		1. -n/a-
2. ENTSOE_16_NL_SV.xml		2.
3. ENTSOE_16_NL_EQ.xml		3.
4. ENTSOE_16_NL_DY.xml		4.
5.		5.
Comments/Results/Issues:		
1. Copy the official test files in the data folder. 2. Verify the entsoe.xsd file exists in the profile folder. 3. Run CIMSchemaBuilder.exe to generate sql scripts to create empty schema. 4. Run the sql scripts to create data structure in ENTSOE16_3 schema. 5. Verify that data structure in ENTSOE16_3 matches against ENTSOE_2010_CIM_14v15-Equipment.html, and is empty. 6. Edit script ParseCIM_Test1.bat to include the test input files. 7. Run ParseCIM_Test1.bat that runs CIM2ORA application to load the CIM/XML input test files in the ENTSOE16_3 schema. Note – The Load flow calculation is not implemented in this tool (since MMS model is based on operational data, and ENTSO-E model is a planning model)		

ACLineSegment

A wire or combination of wires, with consistent electrical characteristics, building a single electrical system, used

- [R4.5] and [R4.7] are satisfied by navigation to ConnectivityNode and Substation
- Each ACLineSegment is required to have an association to a BaseVoltage. The association to Line is not required.
- Using the "memberOf_EquipmentContainer" association, an ACLineSegment can only be contained by
- Attributes b0ch, g0ch, gch, r0, and x0 are for short circuit only and are not required.

Native Members

b0ch	0..1	Susceptance	Zero sequence shunt (charging)
bch	1..1	Susceptance	Positive sequence shunt (charging)
g0ch	0..1	Conductance	Zero sequence shunt (charging)
gch	0..1	Conductance	Positive sequence shunt (charging)
r	1..1	Resistance	Positive sequence series resistance
r0	0..1	Resistance	Zero sequence series resistance
x	1..1	Reactance	Positive sequence series reactance
x0	0..1	Reactance	Zero sequence series reactance
BaseVoltage	1..1	BaseVoltage	Use association to ConductingEquipment

Inherited Members

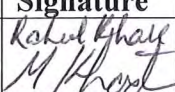
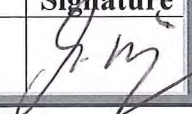
length	0..1	Length	see Conductor
BaseVoltage	0..1	BaseVoltage	see ConductingEquipment
aggregate	0..1	boolean	see Equipment
EquipmentContainer	0..1	EquipmentContainer	see Equipment
aliasName	0..1	string	see IdentifiedObject
description	0..1	string	see IdentifiedObject
name	1..1	string	see IdentifiedObject
pathName	0..1	string	see IdentifiedObject

ACLINSEMENT: Created: 7/12/2010 4:23:31 AM Last DDL: 7/12/2010 4:23:43 AM

Columns Indexes Constraints Triggers Data Scripts Grants Synonyms Partitions Subpartitions Stats/Size Referential Used By Audit

Column Name	ID	Pk	Null?	Data Type	Default	Histogram	Encryption Alg	Salt
INDX	1		Y	INTEGER		No		☐
ID	2	1	N	VARCHAR2 (256 Byte)		No		☐
NAME	3		Y	VARCHAR2 (256 Byte)		No		☐
BASEVOLTAGE	4		Y	VARCHAR2 (256 Byte)		No		☐
EQUIPMENTCONTAINER	5		Y	VARCHAR2 (256 Byte)		No		☐
R	6		Y	FLOAT		No		☐
X	7		Y	FLOAT		No		☐
BCH	8		Y	FLOAT		No		☐
GCH	9		Y	FLOAT		No		☐
RO	10		Y	FLOAT		No		☐
XO	11		Y	FLOAT		No		☐
BOCH	12		Y	FLOAT		No		☐
GOCH	13		Y	FLOAT		No		☐
AGGREGATE	14		Y	VARCHAR2 (5 Byte)		No		☐
LENGTH	15		Y	FLOAT		No		☐
ALIASNAME	16		Y	VARCHAR2 (256 Byte)		No		☐
PATHNAME	17		Y	VARCHAR2 (256 Byte)		No		☐
DESCRIPTION	18		Y	VARCHAR2 (256 Byte)		No		☐

Supplementary files:

Date	Vendor ABB MMS		Test witness Michael Rotzinger, swissgrid	
12 Jul 2010	Name	Signature	Name	Signature
	Rahul Khare Mostafa Khadem		Michael Rotzinger	

1.1.3 SINGLE TEST RECORD FORM

Test No: 2_1	Tool: ABB MMS CIM Explorer	Score: Pass
Test files (imported in Test 1_1)		
Import		Export
1. ENTOSSE_16_3 schema		1. ENTOSSE-E_16_NL_EQ_BM_12JUL15h.xml
2.		2. ENTOSSE-E_16_NL_TP_BM_12JUL15h.xml
3.		3. ENTOSSE-E_16_NL_SV_BM_12JUL15h.xml

4.	4. ENTSO-E_16_NL_Merged_BM_12JUL15h.xml
5.	5.

Comments/Results/Issues:

1. Run ORA2CIM.exe to generate CIM/XML output files from the ENTOS_16_3 schema.
2. Validated these generated files using CIMSpy (see attached screen-shots). Noticed that the validation errors existed in the original CIM/XML files.
3. Re-import the generated XML files (shown above in the export) using CIMExplorer (in ENTOS_16_4 schema) and export the files again. The new file names are:
 - ReExport_ENTSO-E_16_NL_EQ_BM_12JUL15h.xml
 - ReExport_ENTSO-E_16_NL_TP_BM_12JUL15h.xml
 - ReExport_ENTSO-E_16_NL_SV_BM_12JUL15h.xml
 - ReExport_ENTSO-E_16_NL_Merged_BM_12JUL15h.xml
4. Compare the first and second set of exported files using CIMDesk. It was noted that all files are same except that blank space was truncated in the re-export.

[ENTSOE_16_NL_EQ] Validation Results (Power Flow)			
Errors: 3 Warnings: 22 Alerts: 19 Display: Errors and Warnings ▼			
Type	Class	Recurrence	Description
Error	Terminal	5/32	The Terminal contains an invalid value for Association Terminal.ConnectivityNode. The referenced object doesn't exist.
Error	ControlArea	1/1	Missing required Attribute ControlArea.type for all ControlAreas.
Error	RatioTapChanger	2/2	Missing required Attribute RatioTapChanger.tcucControlMode for all RatioTapChangers.
Warning	ConnectivityNode	5/5	Class ConnectivityNode is undeclared in the profile. No further validation performed.
Warning	OperatingParticipant	1/1	Class OperatingParticipant is undeclared in the profile. No further validation performed.
Warning	OperatingShare	16/16	Class OperatingShare is undeclared in the profile. No further validation performed.
Warning	Zone	1/1	Class Zone is undeclared in the profile. No further validation performed.
Warning	BaseVoltage	3/3	Property BaseVoltage.isDC is undeclared for Class BaseVoltage in the profile.
Warning	ConformLoad	3/3	Property PowerSystemResource.Zones is undeclared for Class ConformLoad in the profile.
Warning	HydroGeneratingUnit	3/3	Property Equipment.normallyInService is undeclared for Class HydroGeneratingUnit in the profile.
Warning	HydroGeneratingUnit	3/3	Property GeneratingUnit.highControlLimit is undeclared for Class HydroGeneratingUnit in the profile.
Warning	HydroGeneratingUnit	3/3	Property GeneratingUnit.lowControlLimit is undeclared for Class

[ENTSO-E_16_NL_EQ_BM_12JUL15h] Validation Results (Power Flow)

Errors: 2 Warnings: 0 Alerts: 20 Display: **Errors and Warnings** ▼

Type	Class	Recurrence	Description
Error	ControlArea	1/1	Missing required Attribute ControlArea.type for all ControlAreas.
Error	RatioTapChanger	2/2	Missing required Attribute RatioTapChanger.tcUControlMode for all RatioTapChangers.

- Incrementals
- ReExport_ENTSO-E_16_NL_EQ_BM_12JUL15h_against_ENTSO-E_16_NL_EQ_BM_12JUL15h_1
 - Added [0]
 - Deleted [0]
 - Updated [3]
 - _1b8e9db26a5711dfa90800059a3c7800
 - _1b8e9db86a5711dfa90800059a3c7800
 - _1b8e9dc06a5711dfa90800059a3c7800

Start Server Shutdown Server Edit

Model Explorer Model Catalog

- CIM Models
 - ReExport_ENTSO-E_16_NL_TP_BM_12JUL15h
 - ENTSO-E_16_NL_TP_BM_12JUL15h
 - Terminal [32]
 - TopologicalNode [5]
 - FullModel [1]
 - Incrementals

[ENTSO-E_16_NL_TP_BM_12JUL15h] Summary

Version: <http://iec.ch/TC57/2009/CIM-schema-cim14#> Type: Topology

Source: C:\ABB\Exporter\IOP\ENTSO-E_16_NL_TP_BM_12JUL15h.xml Loaded at: Mon Jul 12 06:43:22

Class	# of Objects	Description
Terminal	32	An electrical connection point to a piece of conducting equipment. Terminals are connected at physical connection points called "connectivity nodes".
TopologicalNode	5	For a detailed substation model a TopologicalNode is a set of connectivity nodes that, in the current network state, are connected together through any type of closed switches, including jumpers. Topological nodes changes as the current network state changes (i.e., switches, breakers, etc. change state). For a planning model switch statuses are not used to form TopologicalNodes. Instead they are manually created or deleted in a model builder tool. TopologicalNodes maintained this way are also called "busses".
FullModel	1	

Message from webpage

Two models are identical.

OK

Model Explorer Model Catalog

- CIM Models
 - ENTSO-E_16_NL_SV_BM_12JUL15h
 - ReExport_ENTSO-E_16_NL_SV_BM_12JUL15h
 - SvInjection [5]
 - SvPowerFlow [6]
 - SvShuntCompensatorSections [1]
 - SvTapStep [1]
 - SvVoltage [10]
 - FullModel [1]
 - Incrementals

[ENTSO-E_16_NL_SV_BM_12JUL15h] Summary

Version: <http://iec.ch/TC57/2009/CIM-schema-cim14#> Type: State Variable

Source: C:\ABB\Exporter\IOP\ReExport_ENTSO-E_16_NL_SV_BM_12JUL15h.xml Loaded at: Mon Jul 12 06:45:18

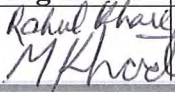
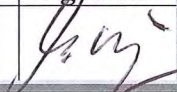
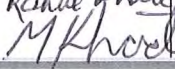
Class	# of Objects	Description
SvInjection	5	Injection state variable.
SvPowerFlow	6	State variable for power flow.
SvShuntCompensatorSections	1	State variable for the number of sections in service for a shunt compensator.
SvTapStep	1	State variable for transformer tap step. This class is to be used for taps of LTC (load tap changing) transformers, not fixed tap transformers. Normally a profile specifies only one of the attributes "position" or "tapRatio".
SvVoltage	10	State variable for voltage.
FullModel	1	

Message from webpage

Two models are identical.

OK

Supplementary files:

Date	Vendor ABB MMS		Test witness Michael Rotzinger, swissgrid		
12 Jul 2010	Name	Signature	Name	Signature	
	Rahul Khare		Michael Rotzinger		
	Mostafa Khadem				

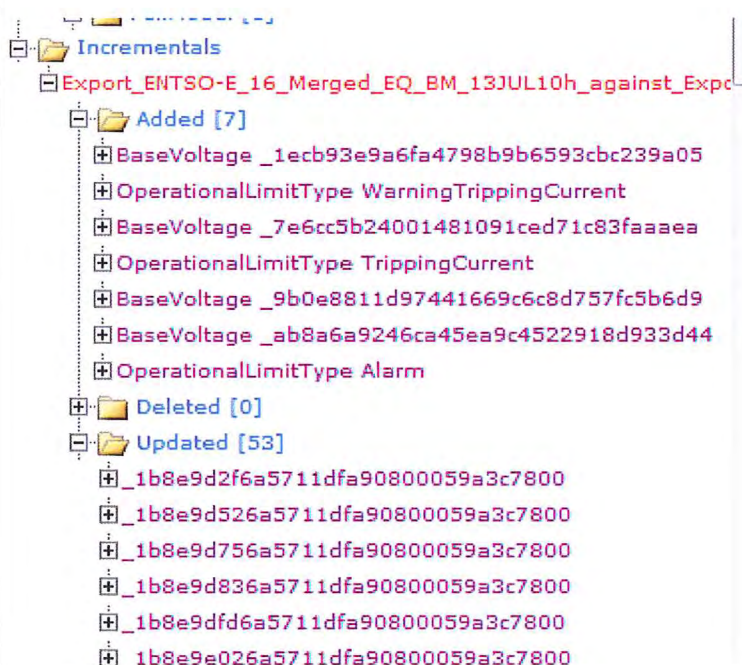
1.1.4 SINGLE TEST RECORD FORM

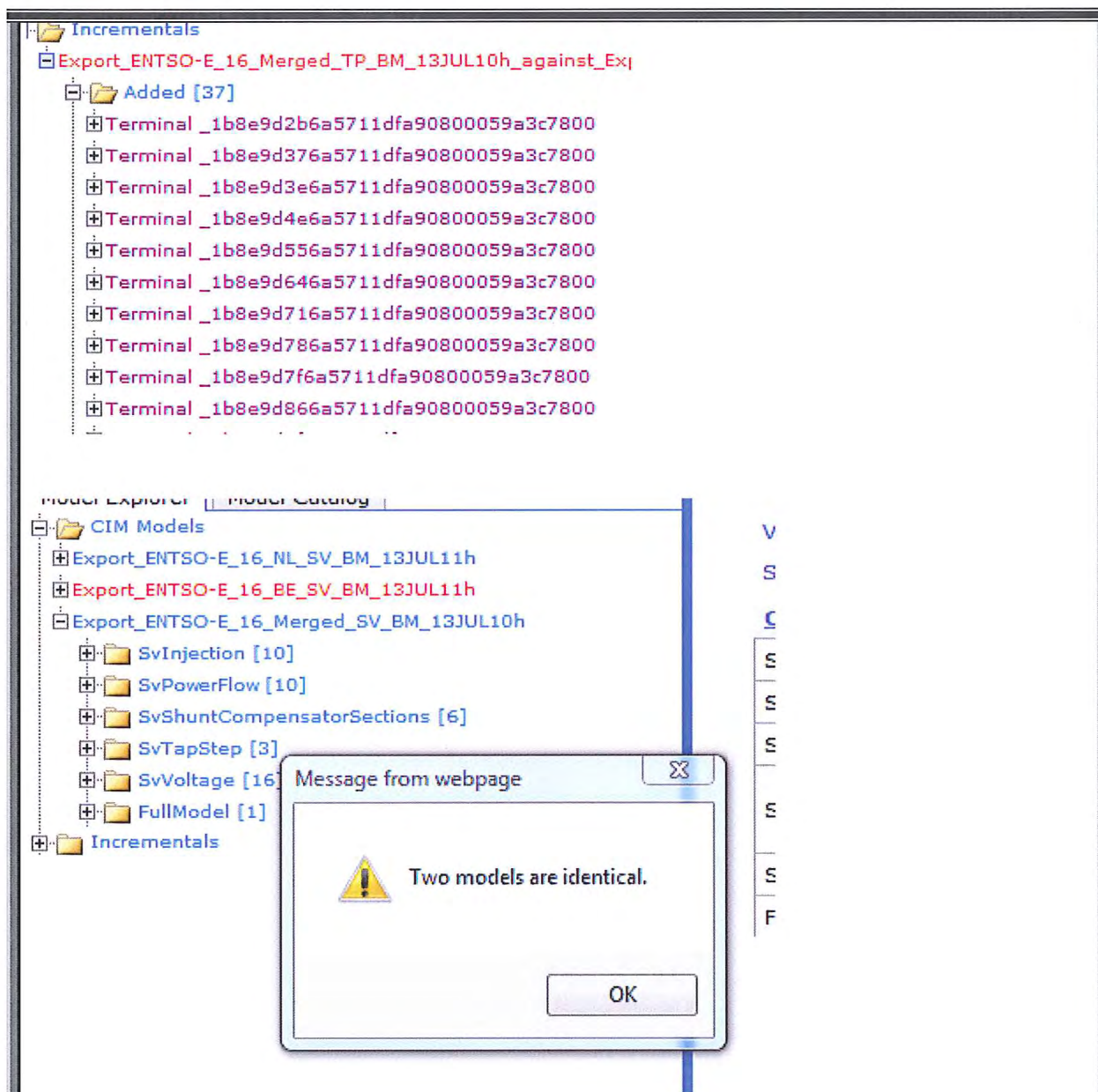
Test No: 9_1	Tool: ABB MMS CIMExplorer	Score: Pass with Errors
Test files ENTSO-E 16 model\per_MAS		
Import	Export	
1. ENTSOE_16_EU_EQ.xml, ENTSOE_16_EU_TP.xml	1. Export_ENTSO-E_16_Merged_EQ_BM_13JUL10h.xml Export_ENTSO-E_16_Merged_TP_BM_13JUL10h.xml Export_ENTSO-E_16_Merged_SV_BM_13JUL10h.xml Export_ENTSO-E_16_Merged_Merged_BM_13JUL10h.xml	
2. ENTSOE_16_BE_EQ.xml ENTSOE_16_BE_TP.xml ENTSOE_16_BE_SV.xml	2. Export_ENTSO-E_16_EU_EQ_BM_13JUL11h.xml Export_ENTSO-E_16_EU_TP_BM_13JUL11h.xml Export_ENTSO-E_16_EU_SV_BM_13JUL11h.xml Export_ENTSO-E_16_EU_Merged_BM_13JUL11h.xml	
3. ENTSOE_16_NL_EQ.xml ENTSOE_16_NL_TP.xml ENTSOE_16_NL_SV.xml	3. Export_ENTSO-E_16_BE_EQ_BM_13JUL11h.xml Export_ENTSO-E_16_BE_TP_BM_13JUL11h.xml Export_ENTSO-E_16_BE_SV_BM_13JUL11h.xml Export_ENTSO-E_16_BE_Merged_BM_13JUL11h.xml	
4.	4. Export_ENTSO-E_16_NL_EQ_BM_13JUL11h.xml Export_ENTSO-E_16_NL_TP_BM_13JUL11h.xml Export_ENTSO-E_16_NL_SV_BM_13JUL11h.xml Export_ENTSO-E_16_NL_Merged_BM_13JUL11h.xml	
5.		
Comments/Results/Issues:		
1. Verify that mas_config.txt file exists in the mas folder. Also verify the order of loading the input CIM/XML files i.e. Boundary MAS files, followed by MAS areas A and B. 2. Verify that all the input MAS files are present in the folders specified in the configuration. 3. Run CIM2ORA application (with -c option) and generate output CSV files. Load them in schema ENTSOE16_5. 4. Run ORA2CIM application to generate merged output files (see Export, Item 1). 5. Also, run CIM Importer and Exporter applications to import EU, BE and NL MAS, and export the files (see Export, Item 2-4). 6. Using CIMDesk, merge the EU, BE and NL Equipment files (files Export_ENTSO-E_16_EU_EQ_BM_13JUL11h.xml, Export_ENTSO-E_16_BE_EQ_BM_13JUL11h.xml, Export_ENTSO-E_16_NL_EQ_BM_13JUL11h.xml), and compare against the Merged Equipment file (Export_ENTSO-E_16_Merged_EQ_BM_13JUL10h.xml). (see snapshot below) Issue to be discussed – It was observed that there is some duplicate data in BaseVoltage and OperationLimitType class in the merged EQ file. Should only distinct data in these classes be preserved? 7. Using CIMDesk, merge the EU, BE and NL Topology files (files Export_ENTSO-E_16_EU_TP_BM_13JUL11h.xml, Export_ENTSO-E_16_BE_TP_BM_13JUL11h.xml, Export_ENTSO-E_16_NL_TP_BM_13JUL11h.xml), and compare against the Merged Topology file (Export_ENTSO-E_16_Merged_TP_BM_13JUL10h.xml). (see snapshot below) Note – CIMDesk merged the Terminals. However ABB MMS CIMExporter doesn't merge Terminals. 8. Using CIMDesk, merge the EU, BE and NL State Variable files (files Export_ENTSO-		

E_16_EU_SV_BM_13JUL11h.xml, Export_ENTSO-E_16_BE_SV_BM_13JUL11h.xml, Export_ENTSO-E_16_NL_SV_BM_13JUL11h.xml), and compare against the Merged State Variables file (Export_ENTSO-E_16_Merged_SV_BM_13JUL10h.xml). (see snapshot below)

9. Validate the output merged files (Export_ENTSO-E_16_Merged_EQ_BM_13JUL10h.xml, Export_ENTSO-E_16_Merged_TP_BM_13JUL10h.xml, Export_ENTSO-E_16_Merged_SV_BM_13JUL10h.xml, Export_ENTSO-E_16_Merged_Merged_BM_13JUL10h.xml) using CIMSpy.

Note – The exported CIM/XML files (bullet 5 of the test procedure) by the vendor contain merged EQ and merged TP files (not EQ and TP files per MAS).





Supplementary files:

Date	Vendor ABB MMS		Test witness Michael Rotzinger, swissgrid	
13 Jul 2010	Name	Signature	Name	Signature
	Rahul Khare	<i>Rahul Khare</i>	Michael Rotzinger	<i>Michael Rotzinger</i>
	Mostafa Khadem	<i>M. Khadem</i>		

1.1.5 SINGLE TEST RECORD FORM

Test No: 10_1	Tool: ABB MMS CIMExplorer	Score: Pass with Errors
Test files ENTSO-E 16 model exported by other Vendors		
Import	Export	
1. ENTSGE_16_EU_EQ.xml, ENTSGE_16_EU_TP.xml ENTSGE_16_BE_OD_14J10h_EQ.xml ENTSGE_16_BE_OD_14J10h_TP.xml ENTSGE_16_EU_OD_14J10h_SV.xml ENTSGE_16_NL_OD_14J10h_EQ.xml ENTSGE_16_NL_OD_14J10h_TP.xml	1. ReExport_Siemens_ENTSGE-E_16_DY_BM_14JUL16h.xml ReExport_Siemens_ENTSGE-E_16_EQ_BM_14JUL16h.xml ReExport_Siemens_ENTSGE-E_16_Merged_BM_14JUL16h.xml ReExport_Siemens_ENTSGE-E_16_SV_BM_14JUL16h.xml ReExport_Siemens_ENTSGE-E_16_TP_BM_14JUL16h.xml	
2. FGH_DE_EQ.xml FGH_DE_TP.xml FGH_DE_SV.xml	2. ReExport_FGH_ENTSGE-E_34_DY_BM_15JUL10h.xml ReExport_FGH_ENTSGE-E_34_EQ_BM_15JUL10h.xml ReExport_FGH_ENTSGE-E_34_Merged_BM_15JUL10h.xml ReExport_FGH_ENTSGE-E_34_SV_BM_15JUL10h.xml ReExport_FGH_ENTSGE-E_34_TP_BM_15JUL10h.xml	
3. eg_EntsoE_gel_EQ.xml eg_EntsoE_gel_TP.xml eg_EntsoE_gel_SV.xml	3. ReExport_GEPlanning_ENTSGE-E_262_DY_BM_15JUL13h.xml ReExport_GEPlanning_ENTSGE-E_262_EQ_BM_15JUL13h.xml ReExport_GEPlanning_ENTSGE-E_262_Merged_BM_15JUL13h.xml ReExport_GEPlanning_ENTSGE-E_262_SV_BM_15JUL13h.xml ReExport_GEPlanning_ENTSGE-E_262_TP_BM_15JUL13h.xml	
4.	4. Export_ENTSGE-E_21K_EQ_BM_13JUL16h.xml Export_ENTSGE-E_21K_Merged_BM_13JUL16h.xml Export_ENTSGE-E_21K_SV_BM_13JUL16h.xml Export_ENTSGE-E_21K_TP_BM_13JUL16h.xml	
5.	5. Export_ENTSGE-E_ABB40bus_BasicModel_EQ_BM_13JUL16h.xml Export_ENTSGE-E_ABB40bus_BasicModel_Merged_BM_13JUL16h.xml Export_ENTSGE-E_ABB40bus_BasicModel_SV_BM_13JUL16h.xml Export_ENTSGE-E_ABB40bus_BasicModel_TP_BM_13JUL16h.xml	
Comments/Results/Issues:		
1. Use exported file from Siemens (see input), run CIM2ORA application (with -c option) and generate output CSV files. Load them in schema ENTSGE16_9. 2. Run ORA2CIM application to generate merged output files (see Export, Item 1). 3. Verified that vendor has capability to import and export other vendor's model. 4. Noted that exported validated model has errors/warnings. However, the original models used as input also have validation errors/warnings.		

[ENTSOE_16_BE_OD_14J10h_EQ] Summary

Version: <http://iec.ch/TC57/2009/CIM-schema-cim14#>

Type: Equipment

Source: C:\ABB\Exporter\IOP\Test 10\from_Siemens\ENTSOE_16_BE_OD_14J10h_EQ.xml

Loaded at: Wed Jul 14 06:46:48

Class	# of Objects	Description
ACLineSegment	7	A wire or combination of wires, with consistent electrical characteristics, building a single electrical system, used to carry alternating current between points in the power system.
BaseVoltage	5	Defines a nominal base voltage which is referenced in the system.
BusbarSection	6	A conductor, or group of conductors, with negligible impedance, that serve to connect other conducting equipment within a single substation. Voltage measurements are typically obtained from VoltageTransformers that are connected to busbar sections. A bus bar section may have many physical terminals but for analysis is modelled with exactly one logical terminal.
ConformLoad	2	ConformLoad represent loads that follow a daily load change pattern where the pattern can be used to scale the load with a system load.
ConnectivityNode	6	Connectivity nodes are points where terminals of conducting equipment are connected together with zero impedance.
ControlArea	1	A control area is a grouping of generating units and/or loads and a cutset of tie lines (as terminals) which may be used for a variety of purposes including automatic generation control, powerflow solution area interchange control specification, and input to load forecasting. Note that any number of overlapping control area specifications can be superimposed on the physical model.
ControlAreaGeneratingUnit	2	A control area generating unit. This class is needed so that alternate control area definitions may include the same generating unit. Note only one instance within a control area should reference a specific generating unit.
CurrentLimit	39	Operational limit on current.
FossilFuel	2	The fossil fuel consumed by the non-nuclear thermal generating units, e.g., coal, oil, gas
GeographicalRegion	1	A geographical region of a power system network model.

[ENTSOE_16_NL_OD_14J10h_EQ] Summary

Version: <http://iec.ch/TC57/2009/CIM-schema-cim14#>

Type: Equipment

Source: C:\ABB\Exporter\IOP\Test 10\from_Siemens\ENTSOE_16_NL_OD_14J10h_EQ.xml

Loaded at: Wed Jul 14 06:31:32

Class	# of Objects	Description
ACLineSegment	5	A wire or combination of wires, with consistent electrical characteristics, building a single electrical system, used to carry alternating current between points in the power system.
BaseVoltage	3	Defines a nominal base voltage which is referenced in the system.
Breaker	2	A mechanical switching device capable of making, carrying, and breaking currents under normal circuit conditions and also making, carrying for a specified time, and breaking currents under specified abnormal circuit conditions e.g. those of short circuit.
BusbarSection	5	A conductor, or group of conductors, with negligible impedance, that serve to connect other conducting equipment within a single substation. Voltage measurements are typically obtained from VoltageTransformers that are connected to busbar sections. A bus bar section may have many physical terminals but for analysis is modelled with exactly one logical terminal.
ConformLoad	3	ConformLoad represent loads that follow a daily load change pattern where the pattern can be used to scale the load with a system load.
ConnectivityNode	5	Connectivity nodes are points where terminals of conducting equipment are connected together with zero impedance.
ControlArea	1	A control area is a grouping of generating units and/or loads and a cutset of tie lines (as terminals) which may be used for a variety of purposes including automatic generation control, powerflow solution area interchange control specification, and input to load forecasting. Note that any number of overlapping control area specifications can be superimposed on the physical model.
ControlAreaGeneratingUnit	3	A control area generating unit. This class is needed so that alternate control area definitions may include the same generating unit. Note only one instance within a control area should reference a specific generating unit.
CurrentLimit	39	Operational limit on current.
GeographicalRegion	1	A geographical region of a power system network model.

Version: <http://iec.ch/TC57/2009/CIM-schema-cim14#>

Type: Equipment

Source: C:\ABB\Exporter\IOP\Test 10\from_Siemens\ENTSOE_16_EU_EQ.xml

Loaded at: Wed Jul 14 06:23:54

Class	# of Objects	Description
BaseVoltage	2	Defines a nominal base voltage which is referenced in the system.
BusbarSection	5	A conductor, or group of conductors, with negligible impedance, that serve to connect other conducting equipment within a single substation. Voltage measurements are typically obtained from VoltageTransformers that are connected to busbar sections. A bus bar section may have many physical terminals but for analysis is modelled with exactly one logical terminal.
ConnectivityNode	5	Connectivity nodes are points where terminals of conducting equipment are connected together with zero impedance.
GeographicalRegion	1	A geographical region of a power system network model.
IEC61970CIMVersion	1	This is the IEC 61970 CIM version number assigned to this UML model file.
SubGeographicalRegion	1	A subset of a geographical region of a power system network model.
Substation	2	A collection of equipment for purposes other than generation or utilization, through which electric energy in bulk is passed for the purposes of switching or modifying its characteristics.
Terminal	5	An electrical connection point to a piece of conducting equipment. Terminals are connected at physical connection points called "connectivity nodes".
VoltageLevel	2	A collection of equipment at one common system voltage forming a switchgear. The equipment typically consist of breakers, busbars, instrumentation, control, regulation and protection devices as well as assemblies of all these.
FullModel	1	

Version: <http://iec.ch/TC57/2009/CIM-schema-cim14#>

Type: Equipment

Source: C:\ABB\Exporter\IOP\Test 10\ReExport_Siemens_ENTSO-E_16_EQ_BM_14JUL16h.xml

Loaded at: Wed Jul 14 06:19:17

Class	# of Objects	Description
ACLineSegment	12	A wire or combination of wires, with consistent electrical characteristics, building a single electrical system, used to carry alternating current between points in the power system.
BaseVoltage	10	Defines a nominal base voltage which is referenced in the system.
Breaker	2	A mechanical switching device capable of making, carrying, and breaking currents under normal circuit conditions and also making, carrying for a specified time, and breaking currents under specified abnormal circuit conditions e.g. those of short circuit.
BusbarSection	16	A conductor, or group of conductors, with negligible impedance, that serve to connect other conducting equipment within a single substation. Voltage measurements are typically obtained from VoltageTransformers that are connected to busbar sections. A bus bar section may have many physical terminals but for analysis is modelled with exactly one logical terminal.
ConformLoad	5	ConformLoad represent loads that follow a daily load change pattern where the pattern can be used to scale the load with a system load.
ControlArea	2	A control area is a grouping of generating units and/or loads and a cutset of tie lines (as terminals) which may be used for a variety of purposes including automatic generation control, powerflow solution area interchange control specification, and input to load forecasting. Note that any number of overlapping control area specifications can be superimposed on the physical model.
ControlAreaGeneratingUnit	5	A control area generating unit. This class is needed so that alternate control area definitions may include the same generating unit. Note only one instance within a control area should reference a specific generating unit.
CurrentLimit	78	Operational limit on current.
FossilFuel	2	The fossil fuel consumed by the non-nuclear thermal generating units, e.g., coal, oil, gas

[ReExport_GEPlanning_ENTSO-E_262_Merged_BM_15JUL13h] Validation Results (Power Flow)

Errors: 5 Warnings: 2 Alerts: 23 Display: **Errors and Warnings** ▼

Type	Class	Recurrence	Description
Error	Terminal	8/3188	Missing required Association Terminal.TopologicalNode.
Error	SeriesCompensator	1/1	Association Equipment.EquipmentContainer is set to the wrong type: cim:VoltageLevel, expecting Line.
Error	SvPowerFlow	930/930	The number of SvPowerFlow instances doesn't match the total number of EnergyConsumer and SynchronousMachine instances.
Error	SvVoltage	263/263	The number of SvVoltage instances doesn't match the number of TopologicalNode instances.
Warning	TopologicalNode	77/1260	Fewer than 2 Terminals are associated with TopologicalNode via Association Terminal.TopologicalNode, expecting at least 2.
Error	TopologicalNode	1260/1260	The string length of Attribute IdentifiedObject.name exceeds the maximum length: 2.
Warning	TopologicalNode	9/1260	The TopologicalNode is an island with all of the associated Terminals disconnected.

[eg_EntsoE_ge1_EQ] Validation Results (Power Flow)

Errors: 5 Warnings: 3 Alerts: 22 Display: **Errors and Warnings** ▼

Type	Class	Recurrence	Description
Error	Terminal	8/3188	Missing required Association Terminal.TopologicalNode.
Error	SeriesCompensator	1/1	Association Equipment.EquipmentContainer is set to the wrong type: cim:VoltageLevel, expecting Line.
Error	SvPowerFlow	930/930	The number of SvPowerFlow instances doesn't match the total number of EnergyConsumer and SynchronousMachine instances.
Error	SvVoltage	263/263	The number of SvVoltage instances doesn't match the number of TopologicalNode instances.
Warning	TopologicalNode	77/1260	Fewer than 2 Terminals are associated with TopologicalNode via Association Terminal.TopologicalNode, expecting at least 2.
Warning	TopologicalIsland	4/4	Class TopologicalIsland is undeclared in the profile. No further validation performed.
Error	TopologicalNode	1260/1260	The string length of Attribute IdentifiedObject.name exceeds the maximum length: 2.
Warning	TopologicalNode	9/1260	The TopologicalNode is an island with all of the associated Terminals disconnected.

[ReExport_FGH_ENTSO-E_34_Merged_BM_15JUL10h] Validation Results (Power Flow)

Errors: 6 Warnings: 2 Alerts: 24 Display: **Errors and Warnings** ▼

Type	Class	Recurrence	Description
Error	ReactiveCapabilityCurve	2/2	Missing required Attribute Curve.xUnit for all ReactiveCapabilityCurves.
Error	ReactiveCapabilityCurve	2/2	Missing required Attribute Curve.y1Unit for all ReactiveCapabilityCurves.
Error	ReactiveCapabilityCurve	2/2	Missing required Attribute Curve.y2Unit for all ReactiveCapabilityCurves.
Error	OperationalLimitSet	54/100	Missing required Association OperationalLimitSet.Equipment.
Error	RatioTapChanger	7/7	Attribute RatioTapChanger.tculControlMode is set to the invalid value: RatioTapChangerKind.volt, expecting one of the following enumerated values [TransformerControlMode.reactive, TransformerControlMode.volt].
Error	TopologicalNode	28/34	The string length of Attribute IdentifiedObject.name exceeds the maximum length: 2.
Warning	TransformerWinding	2/18	The value of Attribute TransformerWinding.r0 is less than lower limit: 0.
Warning	TransformerWinding	2/18	The rated voltage doesn't match the nominal voltage of the connected TopologicalNode.

[FGH_DE_EQ] Validation Results (Power Flow)

Errors: 6 Warnings: 4 Alerts: 23 Display: **Errors and Warnings** ▼

Type	Class	Recurrence	Description
Error	ReactiveCapabilityCurve	2/2	Missing required Attribute Curve.xUnit for all ReactiveCapabilityCurves.
Error	ReactiveCapabilityCurve	2/2	Missing required Attribute Curve.y1Unit for all ReactiveCapabilityCurves.
Error	ReactiveCapabilityCurve	2/2	Missing required Attribute Curve.y2Unit for all ReactiveCapabilityCurves.
Error	OperationalLimitSet	54/100	Missing required Association OperationalLimitSet.Equipment.
Error	RatioTapChanger	7/7	Attribute RatioTapChanger.tculControlMode is set to the invalid value: RatioTapChangerKind.volt, expecting one of the following enumerated values [TransformerControlMode.reactive, TransformerControlMode.volt].
Warning	BaseVoltage	7/7	Property BaseVoltage.isDC is undeclared for Class BaseVoltage in the profile.
Warning	BusbarSection	34/34	Property Equipment.aggregate is undeclared for Class BusbarSection in the profile.
Error	TopologicalNode	28/34	The string length of Attribute IdentifiedObject.name exceeds the maximum length: 2.
Warning	TransformerWinding	2/18	The value of Attribute TransformerWinding.r0 is less than lower limit: 0.
Warning	TransformerWinding	2/18	The rated voltage doesn't match the nominal voltage of the connected TopologicalNode.

[-] Export_ENTSO-E_21K_Merged_BM_13JUL16h

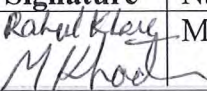
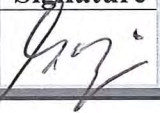
- [-] ALineSegment [24252]
- [-] BaseVoltage [43]
- [-] BusbarSection [21177]
- [-] ConformLoad [15756]
- [-] ControlArea [1]
- [-] ControlAreaGeneratingUnit [4832]
- [-] CurrentLimit [119916]
- [-] GeneratingUnit [4832]
- [-] LoadResponseCharacteristic [15756]
- [-] OperationalLimitSet [39972]
- [-] OperationalLimitType [3]
- [-] PowerTransformer [7860]
- [-] RatioTapChanger [9604]
- [-] RegulatingControl [5301]
- [-] ShuntCompensator [1248]
- [-] SubGeographicalRegion [1]
- [-] Substation [21177]
- [-] SvPowerFlow [20588]
- [-] SvShuntCompensatorSections [1248]
- [-] SvTapStep [4468]
- [-] SvVoltage [21177]
- [-] SynchronousMachine [4832]
- [-] Terminal [107237]
- [-] TopologicalNode [21177]
- [-] TransformerWinding [15720]
- [-] VoltageLevel [21177]

- [-] ENTISOE_21K_EQ
 - [+] ACLineSegment [24252]
 - [+] BasePower [1]
 - [+] BaseVoltage [43]
 - [+] BusbarSection [21177]
 - [+] ConformLoad [15756]
 - [+] ConformLoadGroup [15756]
 - [+] ConnectivityNode [21177]
 - [+] ControlArea [1]
 - [+] ControlAreaGeneratingUnit [4832]
 - [+] CurrentLimit [119916]
 - [+] GeneratingUnit [4832]
 - [+] IEC61970CIMVersion [1]
 - [+] LoadArea [1]
 - [+] LoadResponseCharacteristic [15756]
 - [+] OperatingParticipant [1]
 - [+] OperatingShare [52700]
 - [+] OperationalLimitSet [39972]
 - [+] OperationalLimitType [3]
 - [+] PowerTransformer [7860]
 - [+] RatioTapChanger [9604]
 - [+] RegulatingControl [5301]
 - [+] ShuntCompensator [1248]
 - [+] SubGeographicalRegion [1]
 - [+] SubLoadArea [1]
 - [+] Substation [21177]

Supplementary files:

Date	Vendor ABB MMS		Test witness Michael Rotzinger, swissgrid	
14 Jul 2010	Name	Signature	Name	Signature
	Rahul Khare	<i>Rahul Khare</i>	Michael Rotzinger	<i>Michael Rotzinger</i>
	Mostafa Khadem	<i>M Khadem</i>		

1.1.6 SINGLE TEST RECORD FORM

Test No: 15 1	Tool: ABB MMS CIMExplorer	Score: Pass																																																																			
Test files ENTSO-E 16 model\per_MAS																																																																					
Import 1. ENTSOE_16_EU_EQ.xml, ENTSOE_16_EU_TP.xml 2. ENTSOE_16_BE_EQ.xml ENTSOE_16_BE_TP.xml ENTSOE_16_BE_SV.xml ENTSOE_16_BE_DY.xml 3. ENTSOE_16_NL_EQ.xml ENTSOE_16_NL_TP.xml ENTSOE_16_NL_SV.xml ENTSOE_16_NL_DY.xml 4. 5.	Export 1. ENTSOE16_7 schema 2. 3. 4. 5.																																																																				
Comments/Results/Issues: 1. Verify that mas_config.txt file exists in the mas folder. Also verify the order of loading the input CIM/XML files i.e. Boundary MAS files, followed by MAS areas A and B (including the Dynamics file) 2. Verify that all the input MAS files are present in the folders specified in the configuration. 3. Run CIM2ORA application (with -c option) and generate output CSV files. Load them in schema ENTSOE16_7. 4. Connect to ENTSOE16_7 schema using DB connection tool (e.g. Toad) and verify that Dynamics data has been loaded.																																																																					
EXCAC4A: Created: 7/13/2010 5:16:40 AM Last DDL: 7/13/2010 5:16:49 AM <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr> <th>Columns</th><th>Indexes</th><th>Constraints</th><th>Triggers</th><th>Data</th><th>Scripts</th><th>Grants</th><th>Synonyms</th><th>Partitions</th><th>Subpartitions</th><th>Stats/Size</th><th>Referential</th><th>Used By</th><th>Auditing</th></tr> <tr> <td colspan="14"> ☐ Sort by Primary Key ☐ Desc ☐ Read Only <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th>INDX</th><th>ID</th><th>NAME</th><th>KA</th><th>KC</th><th>TA</th><th>TB</th><th>TC</th><th>TR</th><th>VIMAX</th><th>VIMIN</th><th>VRMAX</th><th>VRMIN</th></tr> </thead> <tbody> <tr> <td>1</td><td>E6FD28B0-ED34-43BC-AD16-44FF0C44F729</td><td>ESAC4A</td><td>200</td><td>0.05</td><td>0.07</td><td>8.5</td><td>1.8</td><td>0.01</td><td>0.1</td><td>-0.1</td><td>5</td><td>-4.65</td></tr> <tr> <td>2</td><td>D90C00BA-7D64-41B5-879F-006F05F8E55C</td><td>ESAC4A</td><td>250</td><td>0.05</td><td>0.07</td><td>8.5</td><td>1.8</td><td>0.01</td><td>0.1</td><td>-0.1</td><td>5</td><td>-4.65</td></tr> </tbody> </table> </td></tr> </table>			Columns	Indexes	Constraints	Triggers	Data	Scripts	Grants	Synonyms	Partitions	Subpartitions	Stats/Size	Referential	Used By	Auditing	☐ Sort by Primary Key ☐ Desc ☐ Read Only <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th>INDX</th><th>ID</th><th>NAME</th><th>KA</th><th>KC</th><th>TA</th><th>TB</th><th>TC</th><th>TR</th><th>VIMAX</th><th>VIMIN</th><th>VRMAX</th><th>VRMIN</th></tr> </thead> <tbody> <tr> <td>1</td><td>E6FD28B0-ED34-43BC-AD16-44FF0C44F729</td><td>ESAC4A</td><td>200</td><td>0.05</td><td>0.07</td><td>8.5</td><td>1.8</td><td>0.01</td><td>0.1</td><td>-0.1</td><td>5</td><td>-4.65</td></tr> <tr> <td>2</td><td>D90C00BA-7D64-41B5-879F-006F05F8E55C</td><td>ESAC4A</td><td>250</td><td>0.05</td><td>0.07</td><td>8.5</td><td>1.8</td><td>0.01</td><td>0.1</td><td>-0.1</td><td>5</td><td>-4.65</td></tr> </tbody> </table>														INDX	ID	NAME	KA	KC	TA	TB	TC	TR	VIMAX	VIMIN	VRMAX	VRMIN	1	E6FD28B0-ED34-43BC-AD16-44FF0C44F729	ESAC4A	200	0.05	0.07	8.5	1.8	0.01	0.1	-0.1	5	-4.65	2	D90C00BA-7D64-41B5-879F-006F05F8E55C	ESAC4A	250	0.05	0.07	8.5	1.8	0.01	0.1	-0.1	5	-4.65
Columns	Indexes	Constraints	Triggers	Data	Scripts	Grants	Synonyms	Partitions	Subpartitions	Stats/Size	Referential	Used By	Auditing																																																								
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Supplementary files:																																																																					
Date	Vendor ABB MMS	Test witness Michael Rotzinger, swissgrid																																																																			
13 Jul 2010	Name Rahul Khare Mostafa Khadem	Signature  Name Michael Rotzinger																																																																			
		Signature 																																																																			

1.1.7 SINGLE TEST RECORD FORM

Test No: 16_1	Tool: ABB MMS CIMExplorer	Score: <i>Pass with Error</i>
Test files ENTSO-E 16 model\per_MAS		
Import	Export	
1. ENTSOE16_7 schema	1. Export_ENTSO-E_16_MergedMAS_EQ_BM_14JUL10h.xml	
ENTSOE_16_EU_EQ.xml	Export_ENTSO-E_16_MergedMAS_TP_BM_14JUL10h.xml	
ENTSOE_16_EU_TP.xml	Export_ENTSO-E_16_MergedMAS_SV_BM_14JUL10h.xml	
ENTSOE_16_BE_EQ.xml	Export_ENTSO-E_16_MergedMAS_DY_BM_14JUL10h.xml	
ENTSOE_16_BE_TP.xml	Export_ENTSO-E_16_MergedMAS_Merged_BM_14JUL10h.xml	
ENTSOE_16_BE_SV.xml		
ENTSOE_16_BE_DY.xml		
ENTSOE_16_NL_EQ.xml		
ENTSOE_16_NL_TP.xml		
ENTSOE_16_NL_SV.xml		
ENTSOE_16_NL_DY.xml		
2.	2.	
3.	3.	
4.	4.	
5.		
Comments/Results/Issues:		
1. Run ORA2CIM application to generate the EQ, TP, SV, DY and Merged CIM/XML files from the ENTSOE16_7 schema. 2. Using CIMDesk, compare the original dynamic files ENTSOE_16_BE_DY.xml and ENTSOE_16_NL_DY.xml against the output file Export_ENTSO-E_16_MergedMAS_DY_BM_14JUL10h.xml. 3. Validated model Export_ENTSO-E_16_MergedMAS_DY_BM_14JUL10h.xml – it has errors/warnings. However, the original model ENTSOE_16_BE_DY.xml and ENTSOE_16_NL_DY.xml also has validation errors/warnings.		

[ENTSOE_16_NL_DY] Summary

Version: <http://iec.ch/TC57/2009/CIM-schema-cim14#>

Type: Dynamic

Source: C:\ABB\Exporter\IOP\Test 15 and 16\ENTSOE_16_NL_DY.xml

Loaded at: Wed Jul 14 00:41:58

Class	# of Objects	Description
Block	12	Class Block is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
BlockConnection	12	Class BlockConnection is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
BlockConnectivity	3	Class BlockConnectivity is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
ExcAC1A	1	Class ExcAC1A is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
ExcST1A	2	Class ExcST1A is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
GovHydro1	2	Class GovHydro1 is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
GovHydro2	1	Class GovHydro2 is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
MetaBlockConnection	15	Class MetaBlockConnection is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
MetaBlockConnectivity	3	Class MetaBlockConnectivity is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
PssIEEE2B	3	Class PssIEEE2B is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
SynchronousMachine	3	An electromechanical device that operates synchronously with the network. It is a single machine operating either as a generator or synchronous condenser or pump.
FullModel	1	

[ENTSOE_16_BE_DY] Summary

Version: <http://iec.ch/TC57/2009/CIM-schema-cim14#>

Type: Dynamic

Source: C:\ABB\Exporter\IOP\Test 15 and 16\ENTSOE_16_BE_DY.xml

Loaded at: Wed Jul 14 00:52:41

Class	# of Objects	Description
Block	8	Class Block is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
BlockConnection	8	Class BlockConnection is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
BlockConnectivity	2	Class BlockConnectivity is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
ExcAC4A	2	Class ExcAC4A is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
GovSteam0	1	Class GovSteam0 is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
GovSteam1	1	Class GovSteam1 is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
MetaBlockConnection	10	Class MetaBlockConnection is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
MetaBlockConnectivity	2	Class MetaBlockConnectivity is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
PssIEEE2B	2	Class PssIEEE2B is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
SynchronousMachine	2	An electromechanical device that operates synchronously with the network. It is a single machine operating either as a generator or synchronous condenser or pump.
FullModel	1	

[Export_ENTSO-E_16_MergedMAS_DY_BM_14JUL10h] Summary

Version: <http://iec.ch/TC57/2009/CIM-schema-cim14#>

Type: Dynamic

Source: C:\ABB\Exporter\IOP\Test 15 and 16\Export_ENTSO-E_16_MergedMAS_DY_BM_14JUL10h.xml

Loaded at: Wed Jul 14 00:42:21

Class	# of Objects	Description
Block	20	Class Block is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
BlockConnection	20	Class BlockConnection is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
BlockConnectivity	5	Class BlockConnectivity is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
ExcAC1A	1	Class ExcAC1A is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
ExcAC4A	2	Class ExcAC4A is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
ExcST1A	2	Class ExcST1A is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
GovHydro1	2	Class GovHydro1 is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
GovHydro2	1	Class GovHydro2 is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
GovSteam0	1	Class GovSteam0 is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
GovSteam1	1	Class GovSteam1 is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
MetaBlockConnection	25	Class MetaBlockConnection is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
MetaBlockConnectivity	5	Class MetaBlockConnectivity is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
PssIEEE2B	5	Class PssIEEE2B is undeclared in http://iec.ch/TC57/2009/CIM-schema-cim14#
SynchronousMachine	5	An electromechanical device that operates synchronously with the network. It is a single machine operating either as a generator or synchronous condenser or pump.
FullModel	1	

[ENTSOE_16_BE_DY] Validation Results (Dynamic Study)

Errors: 14 Warnings: 7 Alerts: 112 Display: **Errors and Warnings** ▼

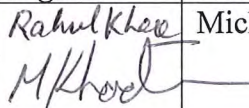
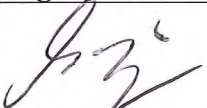
Type	Class	Recurrence	Description
Error	GovSteam0	1/1	Missing required Attribute GovSteam0.mwbase for all GovSteam0s.
Error	PssIEEE2B	2/2	Missing required Attribute PssIEEE2B.a for all PssIEEE2Bs.
Error	PssIEEE2B	2/2	Missing required Attribute PssIEEE2B.ks4 for all PssIEEE2Bs.
Error	PssIEEE2B	2/2	Missing required Attribute PssIEEE2B.t10 for all PssIEEE2Bs.
Error	PssIEEE2B	2/2	Missing required Attribute PssIEEE2B.t11 for all PssIEEE2Bs.
Error	PssIEEE2B	2/2	Missing required Attribute PssIEEE2B.ta for all PssIEEE2Bs.
Error	PssIEEE2B	2/2	Missing required Attribute PssIEEE2B.tb for all PssIEEE2Bs.
Error	PssIEEE2B	2/2	Missing required Attribute PssIEEE2B.vsi1max for all PssIEEE2Bs.
Error	PssIEEE2B	2/2	Missing required Attribute PssIEEE2B.vsi1min for all PssIEEE2Bs.
Error	PssIEEE2B	2/2	Missing required Attribute PssIEEE2B.vsi2max for all PssIEEE2Bs.
Error	PssIEEE2B	2/2	Missing required Attribute PssIEEE2B.vsi2min for all PssIEEE2Bs.
Error	SynchronousMachine	2/2	Missing required Attribute RotatingMachine.parametersFormType for all SynchronousMachines.
Error	SynchronousMachine	2/2	Missing required Attribute RotatingMachine.rs for all SynchronousMachines.
Error	SynchronousMachine	2/2	Missing required Attribute SynchronousMachine.xQuadSubtrans for all SynchronousMachines.
Warning	SynchronousMachine	2/2	Property RotatingMachine.ratedS is undeclared for Class SynchronousMachine in the profile.
Warning	SynchronousMachine	2/2	Property SynchronousMachine.d is undeclared for Class SynchronousMachine in the profile.
Warning	SynchronousMachine	2/2	Property SynchronousMachine.h is undeclared for Class SynchronousMachine in the profile.
Warning	SynchronousMachine	2/2	Property SynchronousMachine.ratedS is undeclared for Class SynchronousMachine in the profile.
Warning	SynchronousMachine	2/2	Property SynchronousMachine.s1 is undeclared for Class SynchronousMachine in the profile.

[Export_ENTSO-E_16_MergedMAS_DY_BM_14JUL10h] Validation Results (Dynamic Study)

Errors: 33 Warnings: 1 Alerts: 108 Display: Errors and Warnings ▼

Type	Class	Recurrence	Description
Error	GovHydro1	2/2	Missing required Attribute GovHydro1.mwbase for all GovHydro1s.
Error	GovHydro2	1/1	Missing required Attribute GovHydro2.db1 for all GovHydro2s.
Error	GovHydro2	1/1	Missing required Attribute GovHydro2.db2 for all GovHydro2s.
Error	GovHydro2	1/1	Missing required Attribute GovHydro2.eps for all GovHydro2s.
Error	GovHydro2	1/1	Missing required Attribute GovHydro2.gv1 for all GovHydro2s.
Error	GovHydro2	1/1	Missing required Attribute GovHydro2.gv2 for all GovHydro2s.
Error	GovHydro2	1/1	Missing required Attribute GovHydro2.gv3 for all GovHydro2s.
Error	GovHydro2	1/1	Missing required Attribute GovHydro2.gv4 for all GovHydro2s.
Error	GovHydro2	1/1	Missing required Attribute GovHydro2.gv5 for all GovHydro2s.
Error	GovHydro2	1/1	Missing required Attribute GovHydro2.gv6 for all GovHydro2s.
Error	GovHydro2	1/1	Missing required Attribute GovHydro2.mwbase for all GovHydro2s.
Error	GovHydro2	1/1	Missing required Attribute GovHydro2.pgv1 for all GovHydro2s.
Error	GovHydro2	1/1	Missing required Attribute GovHydro2.pgv2 for all GovHydro2s.
Error	GovHydro2	1/1	Missing required Attribute GovHydro2.pgv3 for all GovHydro2s.
Error	GovHydro2	1/1	Missing required Attribute GovHydro2.pgv4 for all GovHydro2s.
Error	GovHydro2	1/1	Missing required Attribute GovHydro2.pgv5 for all GovHydro2s.
Error	GovHydro2	1/1	Missing required Attribute GovHydro2.pgv6 for all GovHydro2s.
Error	GovSteam0	1/1	Missing required Attribute GovSteam0.mwbase for all GovSteam0s.
Error	PssIEEE2B	5/5	Missing required Attribute PssIEEE2B.a for all PssIEEE2Bs.

Supplementary files:

Date	Vendor ABB MMS		Test witness Michael Rotzinger, swissgrid	
14 Jul 2010	Name	Signature	Name	Signature
	Rahul Khare Mostafa Khadem		Michael Rotzinger	

1.1.8 SINGLE TEST RECORD FORM

Test No:15_2	Tool: ABB MMS CIMExplorer	Score: Pass
Test files ENTSO-E 16 model\per_MAS		
Import		Export
1. eg_ENTSOE_16_NL_test15_DY.xml (Dynamics file exported by GE Energy)		1. ENTSOE16_8 schema
2.		2.
3.		3.
4.		4.

5.

Comments/Results/Issues:

1. In the mas_config.txt file, create an entry for the GE Energy Dynamics file (see import section above)
2. Run CIM2ORA application (with -c option) and generate output CSV files. Load them in schema ENTSOE16_8.
3. Connect to ENTSOE16_8 schema using DB connection tool (e.g. Toad) and verify that Dynamics data has been loaded.

METABLOCKCONNECTION: Created: 7/14/2010 3:17:28 AM Last DDL: 7/14/2010 3:17:35 AM

Columns	Indexes	Constraints	Triggers	Data	Scripts	Grants	Synonyms	Partitions	Subpartitions	Stats/Size	Referential	Used By	Auditing
☐ Sort by Primary Key ☐ Desc ☐ Read Only													
INDX	ID	NAME	MEMBEROF_METABLOCKCONNECTIVITY										
1	_A4E5CC10-5819-452C-84E9-5E44A4777FFA	Synchronous Generator G1	_881715CC-09FA-4FA4-A5DF-31C06315F611										
2	_C2DA4C03-1AD2-4A5D-A03A-0072869A3723	Excitation System	_647C0B73-F783-4807-9757-2D94D0728EDD										
3	_BBB30A97-5782-439F-A841-CE3B1F4156B9	Voltage Compensator	_647C0B73-F783-4807-9757-2D94D0728EDD										
4	_7551D830-35E7-4227-83C0-C7E939F5710C	Synchronous Generator G1	_550CD61E-2128-4374-BFF0-5A3797B2FE09										
5	_5A6C6285-27BE-4FDD-AF1E-880739F9928F	PSS	_881715CC-09FA-4FA4-A5DF-31C06315F611										
6	_79459887-A462-4A27-954B-E80649591300	Synchronous Generator G1	_647C0B73-F783-4807-9757-2D94D0728EDD										
7	_2988F897-9655-491B-A703-ED2DCDDAE7D7	Turbine-Governor	_881715CC-09FA-4FA4-A5DF-31C06315F611										
8	_C105E0A4-4E64-4E34-9493-F6F52E1CAC9A	Excitation System	_881715CC-09FA-4FA4-A5DF-31C06315F611										
9	_6B0DB62A-9AB4-4C9C-A4C1-5A8CADC1C0C8	Voltage Compensator	_881715CC-09FA-4FA4-A5DF-31C06315F611										
10	_A4036B56-4967-4684-A97F-DCCF425A2D31	Voltage Compensator	_550CD61E-2128-4374-BFF0-5A3797B2FE09										
11	_C44F4ECD-ABDC-402E-AD4E-FEE55E9EA1A6	PSS	_550CD61E-2128-4374-BFF0-5A3797B2FE09										
12	_DE4BC02A-D951-4774-BEFE-531A47DCD658	Turbine-Governor	_647C0B73-F783-4807-9757-2D94D0728EDD										
13	_B924110B-00A4-452D-B403-0AE7372A85C6	Excitation System	_550CD61E-2128-4374-BFF0-5A3797B2FE09										
14	_E199EDC6-DA0D-47A2-9C41-981E4D3DAD44	PSS	_647C0B73-F783-4807-9757-2D94D0728EDD										
15	_AE010305-4946-4B23-936D-D201E38C7ECB	Turbine-Governor	_550CD61E-2128-4374-BFF0-5A3797B2FE09										

Supplementary files:

Date	Vendor ABB MMS		Test witness Michael Rotzinger, swissgrid	
14 Jul 2010	Name	Signature	Name	Signature
	Rahul Khare	<i>Rahul Khare</i>	Michael Rotzinger	<i>Michael Rotzinger</i>
	Mostafa Khadem	<i>M Khadem</i>		

1.1.9 SINGLE TEST RECORD FORM

Test No: 16_2	Tool: ABB MMS CIMExplorer	Score: Pass
Test files ENTSO-E 16 model\per_MAS		
Import	Export	
1. ENTSOE16_8 schema eg_ENTSOE_16_NL_test15_DY.xml (Dynamics file exported by GE Energy)	1. ReExport_GEEnergy_ENTSOE_16_DY_BM_14JUL13h.xml	
2.	2.	
3.	3.	
4.	4.	
5.		
Comments/Results/Issues:		
1. Run ORA2CIM application to generate the DY CIM/XML files from the ENTSOE16_8 schema. 2. Using CIMDesk, compare the original dynamic file (eg_ENTSOE_16_NL_test15_DY.xml) against the output file (ReExport_GEEnergy_ENTSOE_16_DY_BM_14JUL13h.xml). 4. Validated model ReExport_GEEnergy_ENTSOE_16_DY_BM_14JUL13h.xml – it has errors/warnings. However, the original model eg_ENTSOE_16_NL_test15_DY.xml also has validation errors/warnings.		



Start Server [Shutdown Server] Edit

[ReExport_GEEnergy_ENTSO-E_16_DY_BM_14JUL13h_against_eg_ENTSOE_16_NL_test15
Object : _1b8e9db26a5711dfa90800059a3c7800 (Updated)]

Attribute	Type	Original Value	Value
rdf:ID	rdf:ID	_1b8e9db26a5711dfa90800059a3c7800	_1b8e9db26a5711dfa90800059a3c7800
SynchronousMachine.ratedS		250.0	

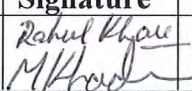
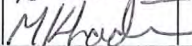
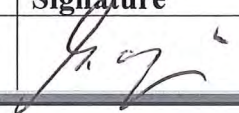
eg_ENTSOE_16_NL_test15_DY

- MetaBlockConnectivity [3]
- PssIEEE2B [3]
- SynchronousMachine [3]
- FullModel [1]
- Block [12]
- BlockConnection [12]
- BlockConnectivity [3]
- ExcAC1A [1]
- ExcST1A [2]
- GovHydro1 [2]
- GovHydro2 [1]
- MetaBlockConnection [15]
- MetaBlockConnectivity [3]
- PssIEEE2B [3]
- SynchronousMachine [3]
- FullModel [1]

Incrementals

- ReExport_GEEnergy_ENTSO-E_16_DY_BM_14JUL13
 - Added [0]
 - Deleted [0]
 - Updated [3]
 - _1b8e9db26a5711dfa90800059a3c7800
 - _1b8e9db26a5711dfa90800059a3c7800
 - _1b8e9db26a5711dfa90800059a3c7800

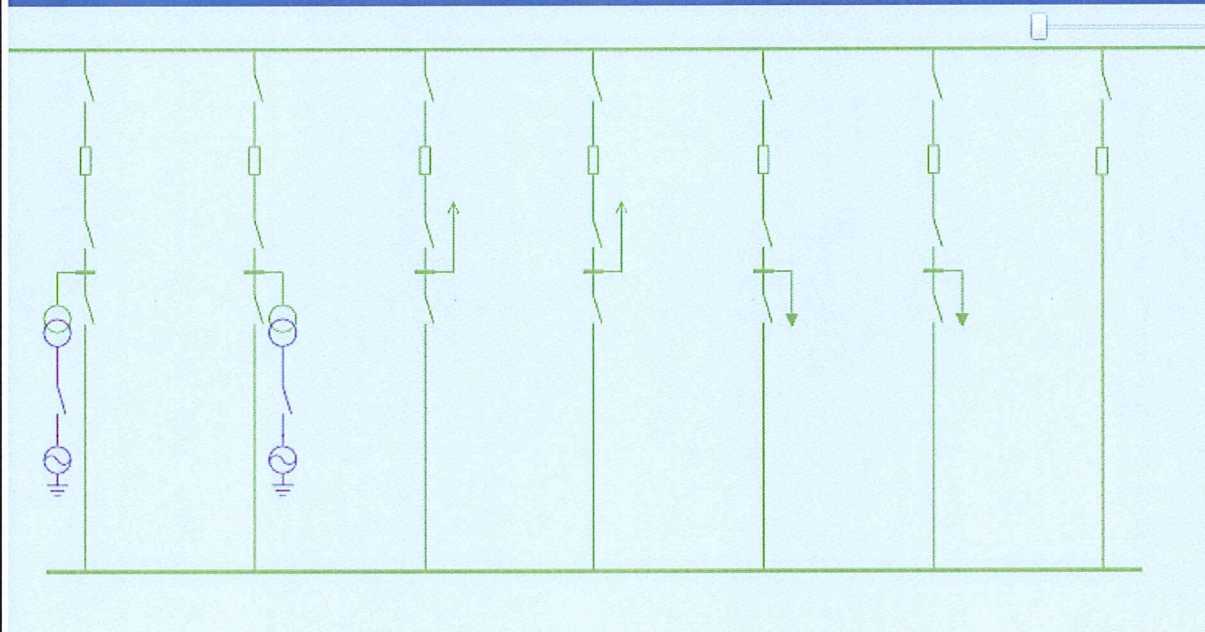
Supplementary files:

Date	Vendor ABB MMS		Test witness Michael Rotzinger, swissgrid	
14 Jul 2010	Name	Signature	Name	Signature
	Rahul Khare Mostafa Khadem	 	Michael Rotzinger	

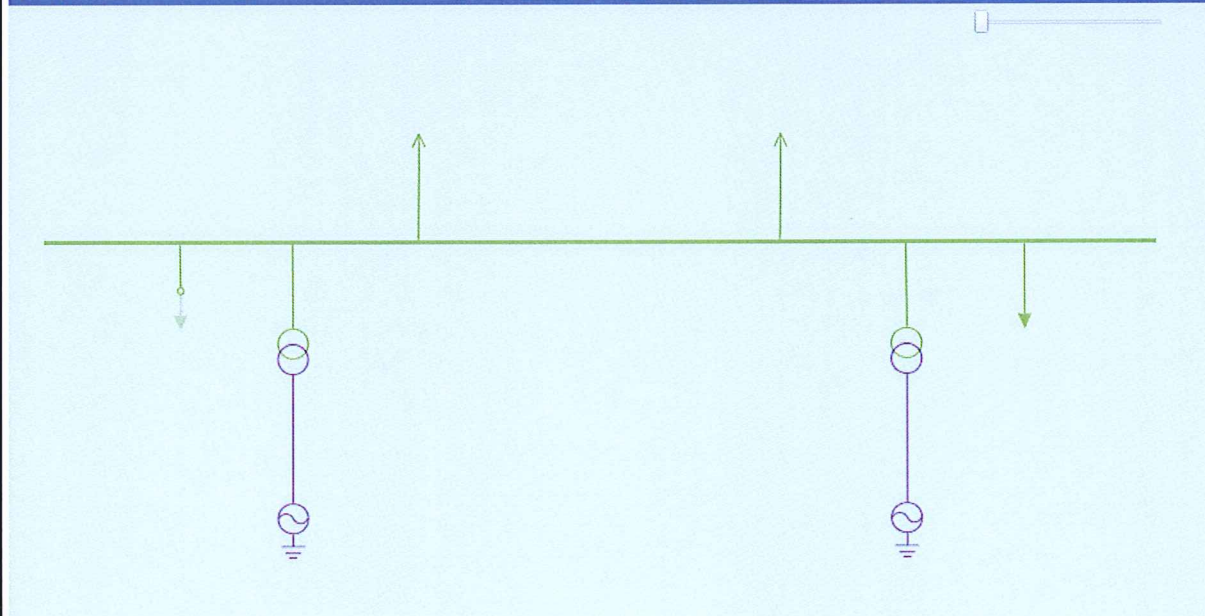
1.1.10 SINGLE TEST RECORD FORM

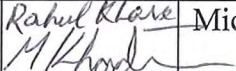
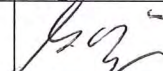
Test No: 27_1	Tool: ABB MMS CIMExplorer	Score: Pass with Errors
Test files		
Import	Export	
1. ABB40bus_CIM13_IOP11.XML	1. Export_ENTSO-E_ABB40busOperational_EQ_BM_13JUL11h.xml Export_ENTSO-E_ABB40busOperational_TP_BM_13JUL11h.xml Export_ENTSO-E_ABB40busOperational_SV_BM_13JUL11h.xml Export_ENTSO-E_ABB40busOperational_Merged_BM_13JUL11h.xml	
2.	2.	
3.	3.	
4.	4.	
5.		
Comments/Results/Issues:		
The purpose of this test is to convert a CPSM-profile based operational model to an ENTSO-E-profile based planning model. 1. Verify that the "csv" folder contains all the files populated from the RDB database. 2. Run RDB2CIM application. 3. Verify that the generated output CIM/XML files are valid. The following snapshots show the operational substation diagram for WINLOCK vs. the corresponding planning diagram. On further analysis, the tester concluded that the single line diagrams doesn't correspond exactly because of the different usage (ABB will provide follow-up clarification before the final report is issued)		

[ABB40bus_Model_EMS_2010_06-29] Substation Diagram : WINLOCK



[Export_ENTSO-E_ABB40busOperational_Merged_BM_13JUL11h] Substation Diagram : WINL

**Supplementary files:**

Date		Vendor ABB MMS		Test witness Michael Rotzinger, swissgrid
13 2010	Jul	Name	Signature	Name
		Rahul Khare Mostafa Khadem		Michael Rotzinger
				

1 TOOL SUMMARY FORM (NETWORK MANAGER SCADA/EMS)

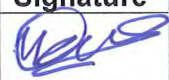
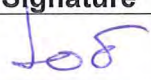
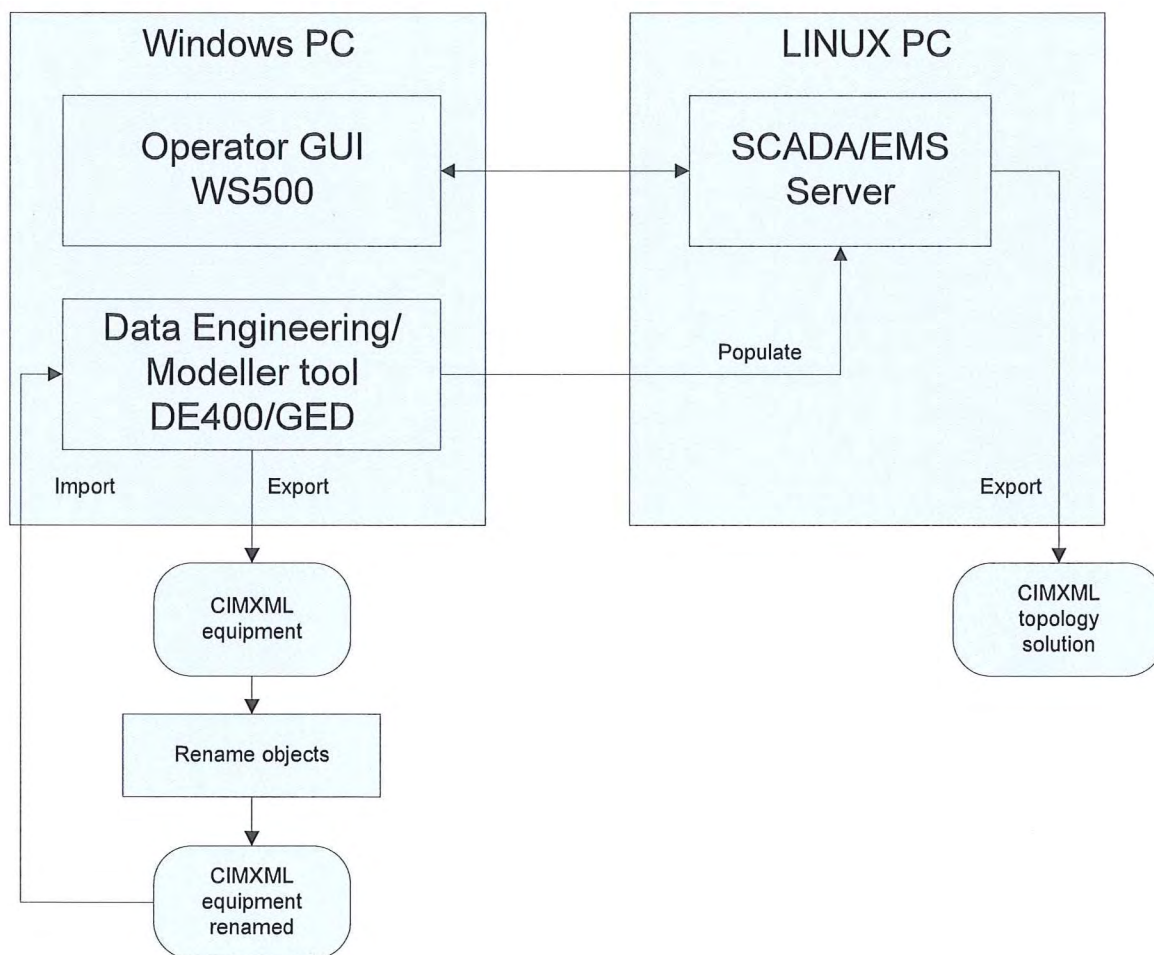
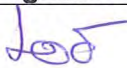
Vendor: ABB Power Technologies		Tool: Network Manager SCADA/EMS	
Witnessed by			
Name	Signature	Name	Signature
1. Pierlugi Di Cicco	<i>see test record form</i>	9.	
2.		10.	
3.		11.	
4.		12.	
5.		13.	
6.		14.	
7.		15.	
8.		16.	
Performed tests			
Test No	Score	Test No	Score
27_1	Pass		
Comments:			
Currently the following functions are supported by Network Manager SCADA/EMS			
- Full model export and import - Incremental model export and import - Full topology and solution export - Power flow - Short circuit			
Functions not supported			
- Full topology and solution import - Dynamics calculations			
Configuration shown in figure below.			
Date	Vendor	ENTSO-E	
15 July 2010	Name	Name	Signature
	Lars-Ola Osterlund	Chavdar Ivanov	
			

ABB Network Manager SCADA/EMS configuration for ENTSO-E IOP July 2010

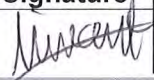
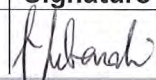


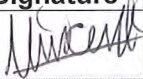
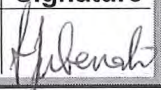
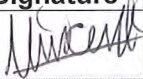
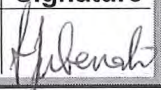
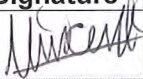
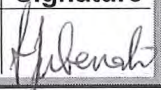
1 SINGLE TEST RECORD FORM

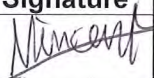
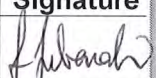
Test No: 27_1		Tool: NM SCADA/EMS		Score: Pass	
Test files					
Import			Export		
1. ABB40bus_EQ_NM_11J21.XML			1. ABB40bus_EQ_NM_12J17_reexport.XML		
2. ABB40bus_EQ_NM_11J21_renamed.XML			2.		
3.			3.		
4.			4.		
5.			5.		
Comments/Results/Issues:					
There was many validation errors (63) due to					
- May additional object types in the CIMXML file not in the profile - Problems with the profile					
Some profile problems					
- Abstract classes that shall be concrete - Data type problem for date (UML problem)					
The export file has been created in two versions					
Supplementary files:					
ACLineSegements.ppt					
Substations.ppt					
TransformerWinding.ppt					
ValidationErrors.ppt					
Date	Vendor		Test witness		
15 July 2010	Name	Signature	Name	Signature	
	Lars-Ola Osterlund		Pierlugi Di Cicco		

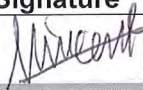
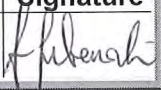
Vendor:	ALSTOM GRID						Tool:	E-TERRASOURCE						
Witnessed by														
Name	Signature				Name	Signature								
1.	Adriano Gubernali				9.									
2.					10.									
3.					11.									
4.					12.									
5.					13.									
6.					14.									
7.					15.									
8.					16.									
Performed tests														
Test No	Score	Test No	Score	Test No	Score	Test No	Score	Test No	Score	Test No	Score	Test No	Score	
1.2.1	Partial pass													
1.2.2	Pass													
1.2.4	Partial pass													
1.2.5	Partial pass													
1.2.9	Partial pass													
1.2.10	Partial pass													
1.2.11	Partial pass													
1.2.12	Partial pass													
1.2.27	Pass													
Comments:														
Dynamic model was not available in e-terrasource and there was no tool to run a dynamic analysis. Consequently, the tests related to dynamic (1.2.15, 1.2.16, 1.2.17, 1.2.18, 1.2.19, 1.2.20, 1.2.21, 1.2.22, 1.2.23, 1.2.24, 1.2.25 and 1.2.27) were not performed. The load flow and short-circuit tools were not ready and some tests were not performed due to this (1.2.3, 1.2.6, 1.2.7, 1.2.8) Test 1.2.13 and 1.2.14 are similar to tests 1.2.11 and 1.2.12 and were not performed. Test 1.2.30 was partially performed within the test 1.2.9														
Date	Vendor				ENTSO-E									
16.07.2010	Name		Signature		Name		Signature							
	Vincent Guillaume				Charlotte Traverso									

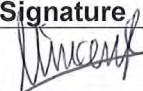
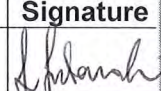
Test No: 1.2.1		Tool: E-TERRASOURCE		Score: Partial Pass	
Test files					
Import (per MAS)			Export		
1. EQ BE, NL, EU			1.		
2. TP BE, NL, EU			2.		
3. SV BE, NL			3.		
4.			4.		
5.			5.		
Comments/Results/Issues: It was not possible to execute the load-flow, because the tool is not ready in this moment.					
Supplementary files: Screenshots_IOP_test_1_2_1.docx					
Date		Vendor		Test witness	
12.07.2010		Name		Name	
		Signature		Signature	
		Vincent Guillaume		Gubernali Adriano	

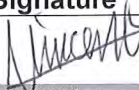
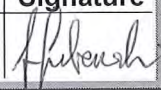
Test No: 1.2.2	Tool: E-TERRASOURCE	Score: Pass
Test files		
Import (per MAS)	Export (per MAS)	
1. ENTSOE_16_BE_TP.xml (version 1)	1. ENTSOE_16_TS_15J09h_BE_TP.xml	
2. ENTSOE_16_BE_EQ.xml (version 1)	2. ENTSOE_16_TS_15J14h_BE_EQ.xml	
3. ENTSOE_16_BE_SV.xml (version 1)	3. ENTSOE_16_TS_15J09h_BE_SV.xml	
4. ENTSOE_16_NL_TP.xml (version 1)	4. ENTSOE_16_TS_15J09h_NL_TP.xml	
5. ENTSOE_16_NL_EQ.xml (version 1)	5. ENTSOE_16_TS_15J14h_NL_EQ.xml	
6. ENTSOE_16_NL_SV.xml (version 1)	6. ENTSOE_16_TS_15J09h_NL_SV.xml	
7. ENTSOE_16_EU_EQ.xml (version 1)		
8. ENTSOE_16_EU_TP.xml (version 1)		
Comments/Results/Issues:		
In transformer winding there is not conductance because the profile doesn't consider conductance in export. In 12.07.2010 (V1) in TP exported file link between topological node and connectivity node container is missing, because the metamodel has to be modified. In 14.07.2010 (V3) ALSTOM has changed the topology profile and has repeated the test 2 with success. In 12.07.2010 (V1) in SV exported file link between SvTapStep and TapChanger is missing, because the metamodel has to be modified. In 14.07.2010 (V3) ALSTOM has changed the state variables profile and has repeated the test 2 with success. In TP exported file the Terminal is not complete, because there are not link to component; Base Voltage is empty. In SV exported file the ShuntCompensator, Terminal, TopologicalNode and RatioTapChanger/PhaseTapChanger are empty. ALSTOM has added the header information (V3) just in exported EQ file (Screenshot_BE_EQ_with_header.doc and ENTSOE_16_TS_14J15h_BE_EQ.xml), after the creation of MAS snapshot including header information. In 15.07.2010 (V4) in TP exported file, rdf:ID has been replaced by rdf:about for the Terminal. Equipment profile has been replaced for to include the TransformerWinding.g		
Supplementary files:		
Screenshots_validation_exports_BE.docx (12.07.2010)		
Differences between profiles one.doc (14.07.2010)		
Screenshots_validation_exports_BE_14072010.doc (14.07.2010)		
Screenshot_BE_EQ_with_header.doc (14.07.2010)		
Screenshot_test_1_2_2.docx (15.07.2010)		
Date	Vendor	Test witness
12.07.2010	Name	Name
14.07.2010	Vincent Guillaume	Gubernali Adriano
15.07.2010		
	Signature	Signature
		

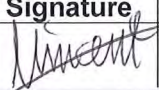
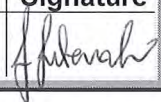
Test No: 1.2.4	Tool: E-TERRASOURCE	Score: Partial Pass															
Test files																	
Import (per MAS)	Export																
1. ENTSOE_16_BE_TP.xml (version 1)	1. ENTSOE_16_15J13h_BE_TP.xml																
2.	2.																
3.	3.																
4.	4.																
5.	5.																
Comments/Results/Issues:																	
12.07.2010 (V1) The load connected to Node 1 has been disconnected, and the new TP file has been generated without performing any load-flow. 15.07.2010 (V2) in TP exported file, rdf:ID has been replaced by rdf:about for the Terminal.																	
Supplementary files:																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">Date</th> <th style="width: 35%;">Vendor</th> <th style="width: 20%;">Signature</th> <th style="width: 15%;">Test witness</th> <th style="width: 15%;">Signature</th> </tr> <tr> <td>12.07.2010</td> <td>Name</td> <td></td> <td>Name</td> <td></td> </tr> <tr> <td>15.07.2010</td> <td>Vincent Guillaume</td> <td></td> <td>Gubernali Adriano</td> <td></td> </tr> </table>			Date	Vendor	Signature	Test witness	Signature	12.07.2010	Name		Name		15.07.2010	Vincent Guillaume		Gubernali Adriano	
Date	Vendor	Signature	Test witness	Signature													
12.07.2010	Name		Name														
15.07.2010	Vincent Guillaume		Gubernali Adriano														

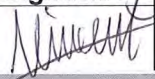
Test No: 1.2.5		Tool: E-TERRASOURCE		Score: Partial Pass	
Test files					
Import (per MAS)			Export		
1. ENTSOE_16_BE_SV.xml (version 1)			1. ENTSOE_16_12J16h_BE_SV.xml		
2.			2.		
3.			3.		
4.			4.		
5.			5.		
Comments/Results/Issues:					
The generator connected to Node 10 has been changed in P=-10MW, Q = 0MVAR. The new SV file has been generated without performing any load-flow.					
Supplementary files:					
Date	Vendor		Test witness		
12.07.2010	Name	Signature	Name	Signature	
	Vincent Guillaume		Gubernali Adriano		

Test No: 1.2.9		Tool: E-TERRASOURCE		Score: Partial Pass	
Test files					
Import (per MAS)			Export		
1. ENTSOE_16_BE_TP.xml (version 3)			1. ENTSOE_16_TS_15J14h_EQ.xml		
2. ENTSOE_16_BE_EQ.xml (version 3)			2. ENTSOE_16_TS_15J11h_TP.xml		
3. ENTSOE_16_NL_TP.xml (version 3)			3. ENTSOE_16_TS_15J11h_SV.xml		
4. ENTSOE_16_NL_EQ.xml (version 3)			4.		
5. ENTSOE_16_BE_SV.xml (version 3)			5.		
6. ENTSOE_16_NL_SV.xml (version 3)			6.		
7. ENTSOE_16_EU_EQ.xml (version 3)			7.		
8. ENTSOE_16_EU_TP.xml (version 3)			8.		
Comments/Results/Issues: Import of all file is correct. Load-flow was not available. Export of the full model has been performed for equipment, topology and state variables.					
Supplementary files: Screenshot_test_1_2_9.docx (15.07.2010)					
Date	Vendor		Test witness		
15.07.2010	Name	Signature	Name	Signature	
	Vincent Guillaume		Gubernali Adriano		

Test No: 1.2.10		Tool: E-TERRASOURCE		Score: Partial Pass	
Test files					
Import (per MAS)			Export		
1. ENTSOE_16_BE_TP.xml (version 2)			1.		
2. ENTSOE_16_BE_EQ.xml (version 2)			2.		
3. ENTSOE_16_NL_TP.xml (version 2)			3.		
4. ENTSOE_16_NL_EQ.xml (version 2)			4.		
5. ENTSOE_16_SV.xml (version 2)			5.		
6. ENTSOE_16_EU_EQ.xml (version 2)			6.		
7. ENTSOE_16_EU_TP.xml (version 2)			7.		
Comments/Results/Issues:					
Import of all file is correct.					
Load-flow and compare were not available.					
Supplementary files:					
Date		Vendor		Test witness	
13.07.2010		Name		Name	
		Vincent Guillaume		Gubernali Adriano	
		Signature		Signature	
					

Test No: 1.2.11		Tool: E-TERRASOURCE		Score: Partial Pass	
Test files					
Import (per MAS)			Export		
1. ENTSOE_16_BE_TP.xml (version 2)			1. ENTSOE_16_13J15h_BE_EQ.xml		
2. ENTSOE_16_BE_EQ.xml (version 2)			2.		
3. ENTSOE_16_NL_TP.xml (version 2)			3.		
4. ENTSOE_16_NL_EQ.xml (version 2)			4.		
5. ENTSOE_16_SV.xml (version 2)			5.		
6. ENTSOE_16_EU_EQ.xml (version 2)			6.		
7. ENTSOE_16_EU_TP.xml (version 2)			7.		
Comments/Results/Issues:					
Connectivity node is for planning, so the connection between Connectivity node and Topological node doesn't exist. In E-TERRA we have moved the winding of 3 phase transformer from Node 3 to Node 11 and we export the difference models for equipment (ENTSOE_16_13J15h_BE_EQ.xml), ALSTOM validates the exported file.					
Supplementary files:					
Date		Vendor		Test witness	
13.07.2010		Name Vincent Guillaume		Name Gubernali Adriano	
		Signature 		Signature 	

Test No: 1.2.12		Tool: E-TERRASOURCE		Score: Partial Pass	
Test files					
Import (per MAS)			Export		
1. ENTSOE_16_BE_TP.xml (version 3)			1. ENTSOE_16_OD_NL_15J15h_DIFF.xml		
2. ENTSOE_16_BE_EQ.xml (version 3)			2.		
3. ENTSOE_16_NL_TP.xml (version 3)			3.		
4. ENTSOE_16_NL_EQ.xml (version 3)			4.		
5. ENTSOE_16_SV.xml (version 3)			5.		
6. ENTSOE_16_EU_EQ.xml (version 3)			6.		
7. ENTSOE_16_EU_TP.xml (version 3)			7.		
Comments/Results/Issues:					
Difference file from Siemens has been imported using the equipment profile. The differences have been successfully imported and reviewed into the tool. Load-flow and compare were not available.					
Supplementary files:					
Screenshot_test_1_2_12.docx (16.07.2010)					
Date	Vendor		Test witness		
16.07.2010	Name	Signature	Name	Signature	
	Vincent Guillaume		Gubernali Adriano		

Test No: 1.2.27		Tool: E-TERRASOURCE		Score: Pass	
Test files					
Import (per MAS)			Export		
1. ge1_EQ.xml			1. GE_TS_15J14h_EQ.xml		
2. ge1_TP_v2.xml			2. GE_TS_15J15h_TP.xml		
3. ge1_SV.xml			3. GE_TS_15J15h_SV.xml		
4.			4.		
5.			5.		
6.			6.		
7.			7.		
Comments/Results/Issues: Import of files was successful. Exported files were validated with CIMSpy.					
Supplementary files: Screenshot_test_1_2_27.doc					
Date		Vendor		Test witness	
15.07.2010		Name Vincent Guillaume		Name Gubernali Adriano	
		Signature 		Signature 