SINGLE TEST RECORD FORM

Test No: 13_1	Profile edition No: 2	Tool: ODMS	Score: 4

Test files:

Import	Export
ENTSO-E_Boundary_Set_28_June_2011_2ndEdition_EU.zip ENTSOE_16_BE.zip ENTSOE_16_NL.zip	ENTSOE_16_BE_OD_Diff_15J12h.xml ENTSOE_16_NL_OD_Diff_15J12h.xml ENTSOE_16_OD_15J12h_BE_TP.xml ENTSOE_16_OD_15J12h_NL_TP.xml ENTSOE_16_OD_15J12h_SV.xml

Comments/Results/Issues:

Imported the boundary zip file, the BE MAS zip file and the NL MAS zip file.
We calculated the load flow after the import. See "ODMS_S1_Loadflow_before.pdf" and substation PP_Brussels, "ODMS_S1_Loadflow_before_PP_Brussels.tif" and changes to "ODMS_S1_Loadflow_before_Amsterdam.tif"

Made the following changes using Project module:

- Add new conforming load L2_conf P 5 MW and Q 5 Mvar in substation PP_Brussels on bus 51
- Add new conforming load L3_conf P 4 MW and Q 6 Mvar in substation PP_Amsterdam on bus BB

The changes were exported as two difference file, "ENTSOE_16_BE_OD_Diff_15J12h.xml" and "ENTSOE_16_NL_OD_Diff_15J12h.xml".
Committed the changes to the model and run load flow. The result is shown in the file "ODMS_Amsterdam_AfterChanges.tif" and "ODMS_Brussels_AfterChanges.tif" and the total is shown in "ODMS_S2_Table_Loadflow_after.png".

Exported the full TP for both MAS and a SV for the total. The file was exported separately as: "ENTSOE_16_OD_15J12h_BE_TP.xml", "ENTSOE_16_OD_15J12h_NL_TP.xml" and "ENTSOE_16_OD_15J12h_SV.xml
The difference file and the full TPx2 and full solution file was zipped to a common file, "ENTSOE_16_OD_15J12h_all.zip"

The TP and SV file were validated by CIMdesk without any errors. See file starting with "CIMdesk".
The validation of the difference files failed on the CIMdesk validation. It states that the file is a full model rather than a DifferenceModel.
This is a profile issue. The export of the difference file is valid.

Supplementary files:

CIMdesk_OD_15J12h_BE_TP.PNG	15.07.2011 12:20
CIMdesk_OD_15J12h_NL_TP.PNG	15.07.2011 12:21
CIMdesk_OD_15J12h_SV.PNG	15.07.2011 12:22
ODMS_Amsterdam_AfterChanges.tif	15.07.2011 12:00
ODMS_Brussels_AfterChanges.tif	15.07.2011 12:01
ODMS_Loadflow_Table_Solution1.PNG	15.07.2011 11:23
ODMS_Loadflow_Table_Solution2.PNG	15.07.2011 12:01
ODMS_S1_Loadflow_before.pdf	15.07.2011 11:25
ODMS_S1_Loadflow_before_PP_Brussels.tif	15.07.2011 11:16

Date	Vendor		Test witness	
2011-07-15	**Name**	**Signature**	**Name**	**Signature**
	Michael Ford		Svein Olsen	

SINGLE TEST RECORD FORM

Test No: 14_1	Profile edition No: 2	Tool: ODMS	Score: 4

Test files:

Import	Export
ENTSO-E_Boundary_Set_28_June_2011_2ndEdition_EU.zip ENTSOE_16_BE.zip ENTSOE_16_NL.zip TNA__ENTSOE_16_BE_EQ_DIFF.xml TNA__ENTSOE_16_NL_EQ_DIFF.xml TNA__ENTSOE_16_BE_TP.xml TNA__ENTSOE_16_NL_TP.xml TNA__Test11.1_2sc__SV.xml	

Comments/Results/Issues:

Imported the boundary zip file, the BE MAS zip file and the NL MAS zip file.
We calculated the load flow after the import. See "ODMS_S1_Loadflow_before.pdf".

We imported the differential files from DMSGroup & EKC (TNA) without any error message.
We then imported the two TP files and then the SV file without any error message.

From the difference file we could see that the following changes had been done:

- BE MAS had Load response for D1 was changed
  - pConstantCurrent 0 -> 0.2
  - pConstantImpedance 0 -> 0.3
  - pConstantPower 1 -> 0.5
- NL MAS had the TapChanger on the PhaseShifter T1
  - name from empty to SymmNL
  - neutral step from 31 to 35

These changes were picked up by ODMS. See "ODMS_BE_LoadResponse_AfterImport.PNG" and "ODMS_NL_PhaseShifterTap_AfterImport.PNG"

The load flow was then calculated and the result was exported in the file "ODMS_Powerflow_AfterImport_15J12h.pdf"

The following node were checked:

		TNA	ODMS	delta
S4	U [kV]	22.0	21.987	0.06%
	angle [°]	-11.8	-11.695	0.90%
F5	P [MW]	90.0	90.000	0.00%
	Q [Mvar]	84.1	84.833	0.86%

The result from TNA is stored in the file "Test11.1_d_2sc_TN_13J16h30.jpg".

The results are acceptable.
Supplementary files: ODMS_BE_LoadResponse_AfterImport.PNG ODMS_NL_PhaseShifterTap_AfterImport.PNG ODMS_Powerflow_AfterImport_15J12h.pdf Test11.1_d_2sc_TN_13J16h30.jpg

Date	Vendor		Test witness	
2011-07-15	**Name**	**Signature**	**Name**	**Signature**
	Michael Ford		Svein Olsen	

SINGLE TEST RECORD FORM

Test No: 15_1	Profile edition No: 2	Tool: ODMS/PSSE	Score: 3

Test files:

Import	Export
ENTSO-E_Boundary_Set_28_June_2011_2ndEdition_EU.zip ENTSOE_16_BE.zip ENTSOE_16_NL.zip	

Comments/Results/Issues:

Imported the boundary zip file and then the BE MAS and NL MAS zip file. Built Case and Exported PSSE v32 raw and dyr files.

Discovered problem setting duplicate unit identifiers used in internal PTI Software. Repaired and proceeded with test.

Compared data between original xml data in the ENTSOE_16_BE_DY file against the PSSE dyr data for unit G1 at Brussels.

Loaded network and dynamics data into PSSE, solved powerflow and Initialized successfully.

Supplementary files:

C:\AAA Dynamics Test\Test15\Test 15

Date	Vendor		Test witness	
	Name	Signature	Name	Signature
2011-07-11	Chuck DuBose		Chavdar Ivanov	

SINGLE TEST RECORD FORM

Test No: 16_1	Profile edition No: 2	Tool: ODMS	Score: 4

Test files:

Import	Export
ENTSO-E_Boundary_Set_28_June_2011_2ndEdition_EU.zip ENTSOE_16_BE.zip ENTSOE_16_NL.zip	ENTSOE_2_BE_OD_Dynamics.zip ENTSOE_2_NL_OD_Dynamics.zip

Comments/Results/Issues:

Imported the boundary zip file and then the BE MAS and NL MAS zip file.

Exported BE MAS and NL MAS.

Noted that the model version incremented and uri is different. Attached jpeg

Validated against CIMdesk. Attached jpeg. Produced one unexplainable error stating that the vrmin is greater than or equal to upper limit for the ExcAC1A standard model. Compared the only ExcAC1A model in the data located in the NL MAS. rmin was 0 and rmax was 10. Also checked the rest of the data in the ExcAC1A model. Attached jpeg.

Compared the large GovSteam model in the BE MAS. Attached jpeg

Supplementary files:

C:\AAA Dynamics Test\Test16\Input vs

C:\AAA Dynamics Test\Test16\CIMdesk

C:\AAA Dynamics Test\Test16\ExcAC1A

C:\AAA Dynamics Test\Test16\Belgium

Date	Vendor		Test witness	
	Name	Signature	Name	Signature
2011-07-11	Chuck DuBose		Chavdar Ivanov	

SINGLE TEST RECORD FORM

Test No: 17_1	Profile edition No: 2	Tool: ODMS/PSSE	Score: 4

Test files:

Import	Export
ENTSO-E_Boundary_Set_28_June_2011_2ndEdition_EU.zip ENTSOE_16_BE.zip ENTSOE_16_NL.zip	

Comments/Results/Issues:

Imported the boundary zip file and then the BE MAS and NL MAS zip file. Built Case and Exported PSSE v32 raw and dyr files.
Discovered problem setting duplicate unit identifiers used in internal PTI Software. Repaired and proceeded with test.

Loaded network and dynamics data into PSSE, solved powerflow and Initialized successfully. Ran dynamics simulation and compared results against DigSILENT simulation. Attached pictures of solution criteria, initialization and simulation plot.

Supplementary files:

C:\AAA Dynamics Test\Test17\PSSE Sol

C:\AAA Dynamics Test\Test17\Dynamic

C:\AAA Dynamics Test\Test17\G1 Resp

Date	Vendor		Test witness	
	Name	Signature	Name	Signature
2011-07-11	Chuck DuBose		Chavdar Ivanov	

SINGLE TEST RECORD FORM

Test No: 27_1	Profile edition No: 2	Tool: ODMS	Score: 4

Test files:

Import	Export
ge1_operational.zip (ge1_EQ.xml) (ge1_TP.xml) (ge1_SV.xml)	GE_Operation_Planning_OD_15J09h.zip

Comments/Results/Issues:

ODMS imported the GE Operational (CPSM) model without any errors. The screenshot "OMDS_InstanceData.png" that shows the data imported. The file "ODMS_Loadflow_Summary_Operation.png" shows the high-level load flow result.

We check that LOAD_564 is imported.

<cim:ConformLoad rdf:ID="**xaLoad564**"><cim:IdentifiedObject.name>LOAD_564</cim:IdentifiedObject.name><cim:EnergyConsumer.pfixed>10.7</cim:EnergyConsumer.pfixed><cim:EnergyConsumer.pfixedPct>4.867841</cim:EnergyConsumer.pfixedPct><cim:EnergyConsumer.qfixed>-2.2</cim:EnergyConsumer.qfixed><cim:EnergyConsumer.qfixedPct>-1.225081</cim:EnergyConsumer.qfixedPct><cim:Equipment.EquipmentContainer rdf:resource="**#xaBus482**"/><cim:EnergyConsumer.LoadResponse rdf:resource="**#xaZipLoad564**"/><cim:ConformLoad.LoadGroup rdf:resource="**#xaLoadGroup7**"/></cim:ConformLoad>

The values in the XML file were the same as the data showns in the screen.

The operational (CPSM) was exported as planning model (ENTSO-E ed2).
The export file was validated with CIMdesk. The validation for the EQ original and the exported file give the same result. There is an additional warning in the exported TP:

Warning	Terminal	974/974	Property ClassLink is undeclared for Class Terminal in the profile.

This warning is OK.
The SV validation was OK.

Supplementary files:

CIMdesk_OD_15J09h_SV.PNG
CIMdesk_OD_15J09h_TP.PNG
CIMdesk_OD_15J09h_EQ.PNG
ODMS_InstanceData.PNG
CIMdesk_ge1_SV.PNG – the validation done on the original GE file
CIMdesk_ge1_TP.PNG – the validation done on the original GE file
CIMdesk_ge1_EQ.PNG – the validation done on the original GE file
ODMS_Loadflow_Summary_Operation.PNG

Date	Vendor		Test witness	
	Name	Signature	Name	Signature
2011-07-15	Michael Ford		Svein Olsen	

SINGLE TEST RECORD FORM

Test No: 28_1	Profile edition No: 2	Tool: ODMS	Score: 4

Test files:

Import	Export
GE_Operation_Planning_OD_15J08h.zip	

Comments/Results/Issues:

ODMS imported the file that was exported from Test 27 without any errors.
The result of the load flow calculation was stored in the file "ODMS_Loadflow.png". It shows the high-level load flow result.

The same file was imported by PowerFactory and the result was compared for the overall flow. See result from PowerFactory in the file: "PF_ldfresults.png"

The validation was OK.

Supplementary files:
ODMS_Loadflow_Summary_Operation.PNG
ODMS_Loadflow_Summary_Planning.PNG
PF_ldfresults.png

Date	Vendor		Test witness	
	Name	Signature	Name	Signature
2011-07-15	Michael Ford		Svein Olsen	

SINGLE TEST RECORD FORM

Test No: 29_1	Profile edition No: 2	Tool: ODMS	Score: 4

Test files:

Import	Export
ge1_operational.zip (ge1_EQ.xml) (ge1_TP.xml) (ge1_SV.xml)	

Comments/Results/Issues:

ODMS imported the GE Operational (CPSM) model without any errors. The screenshot "OMDS_InstanceData.png" that shows the data imported. The file "ODMS_Loadflow_Summary_Operation.png" shows the high-level load flow result.

	ODMS		GE		delta	
	MW	Mvar	MW	Mvar	%	%
Generation	2170,7	-709,5	2166	-901	0,22 %	-21,25 %
Load	2094,5	654,6	2096	816	-0,07 %	-19,78 %
Bus Shunt	0	-265,7	0	-327		-18,75 %
Line Charging		2513,9		2698		-6,82 %
Loss	75,3	723,6	71	-2046	6,06 %	-135,37 %

The MW looks very good. Even if the Mvar has a big difference the result is accepted.

Supplementary files:
ODMS_Loadflow_Summary_Operation.PNG
eg_ge1_resolution_screen.doc – the solution from GE
Summary.xlsx – shows the differences

Date	Vendor		Test witness	
	Name	Signature	Name	Signature
2011-07-15	Michael Ford		Svein Olsen	

SINGLE TEST RECORD FORM

Test No: 30_1	Profile edition No: 2	Tool: ODMS	Score: 4

Test files:

Import	Export
ENTSO-E_Boundary_Set_28_June_2011_2ndEdition_EU.zip ENTSOE_16_BE.zip ENTSOE_16_NL.zip ENTSOE_16_BE_FullExport_OD_15J11h.zip	ENTSOE_16_OD_15J16h.zip

Comments/Results/Issues:

Imported the boundary zip file, the BE MAS zip file and the NL MAS zip file.
We calculated the load flow after the import. See "ODMS_S1_Loadflow_before.pdf" and substation PP_Brussels, "ODMS_S1_Loadflow_before_PP_Brussels.tif"

We imported the full MAS model that was exported from Test 12 where we have imported the changes in a differential file, and then exported the full MAS in the file "ENTSOE_16_BE_FullExport_OD_15J11h.zip". We expect the following changes to occur in the new full model after we have imported

- Add a new load D2_conf (confirming load) with 50 MW and 45 Mvar
- Change the existing load D1 name to D1_nonconf and P from 100 MW to 50 MW and Q from 90 Mvar to 45 Mvar

We verified that the changes were imported. We calculated the new load flow result and stored it in "OMD_Loadflow_table.lng"

A full model including the boundary was exported into "ENTSOE_16_OD_15J16h.zip"

It was unclear how the test should be completed, and at the time of execution there were no other vendor that was ready to test the import and compare result.

Supplementary files:
ODMS_S1_Loadflow_before.pdf
ODMS_S1_Loadflow_before_PP_Brussels.tif
ODMS_S2_Loadflow_after.png
ODMS_S2_Loadflow_after_PP_Brussels.tif

Date	Vendor		Test witness	
	Name	Signature	Name	Signature
2011-07-15	Michael Ford		Svein Olsen	

SINGLE TEST RECORD FORM

Test No: 31_1	Profile edition No: 2	Tool: ODMS	Score: 4

Test files:

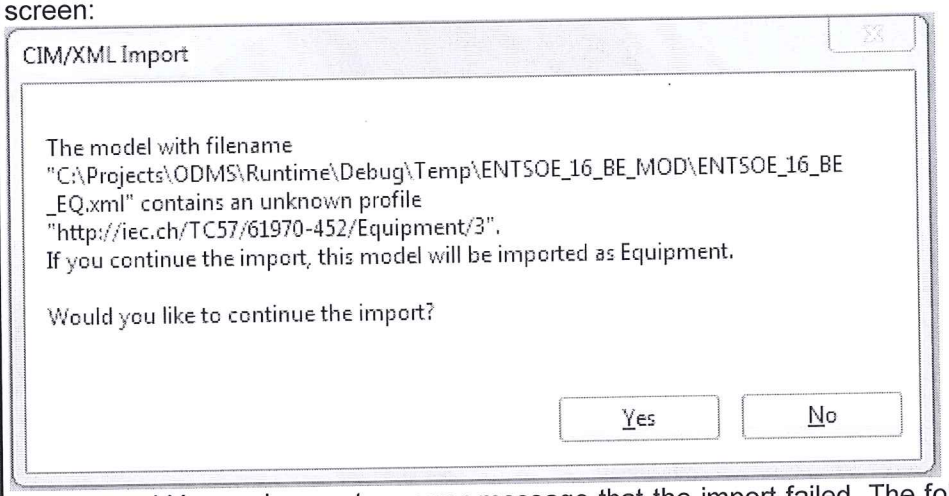
Import	Export
ENTSO-E_Boundary_Set_28_June_2011_2ndEdition_EU.zip ENTSOE_16_BE_MOD.zip	

Comments/Results/Issues:

The test was done on the BE MAS. The EQ file header was modified with the following changes:
The incorrect header referents was added to the file:
<md:Model.DependentOn rdf:resource="urn:uuid:2399cbd0-9a39-11e0-9999-0800200c9a66" />

The model profile reference was changed from:
<md:Model.profile>http://iec.ch/TC57/61970-452/Equipment/2</md:Model.profile>
To
<md:Model.profile>http://iec.ch/TC57/61970-452/Equipment/3</md:Model.profile>

When importing the file the import failed. The following error messages is displayed in the screen:



We pressed Yes and we got an error message that the import failed. The following line was written to the log file:
"
File "ENTSOE_16_BE_EQ.xml" depends on "urn:uuid:2399cbd0-9a39-11e0-9999-0800200c9a66", but that ID is not found in the files or in the database!
"
This is acceptable error messaged for this profile. However, moving to next profile the error message should point out which profile it will import it to.

Supplementary files:
ODMS_ProfileHeaderError.PNG

xmlImport_ENTSOE_16_BE_MOD.log				
Date	**Vendor**		**Test witness**	
2011-07-14	**Name**	**Signature**	**Name**	**Signature**
	Michael Ford		Svein Olsen	

SINGLE TEST RECORD FORM

Test No: 32_1	Profile edition No: 2	Tool: ODMS	Score: 4

Test files:

Import	Export
ENTSO-E_Boundary_Set_28_June_2011_2ndEdition_EU.zip ENTSOE_16_NL.zip ENTSOE_16_BE.zip ENTSO-E_16_PF_12J17h_NL.zip	entso-e_16_od_15j14h_nl.zip

Comments/Results/Issues:

Imported the boundary zip file, the BE MAS zip file and the NL MAS zip file.

The we imported diagram file created by DIgSILENT, "ENTSO-E_16_PF_12J17h_NL.zip"
The diagram based on this import is stored in the file "ODMS_imported_entso-e_16_pf_15j14h_nl.JPG". This is verified by DIgSILENT to be OK.

We then make changes represented in the file "ODMS_exported_entso-e_16_od_15j14h_nl.JPG".
This was exported as an xml in the file "entso-e_16_od_15j14h_nl.zip".
This file was imported by DIgSILENT and the result is stored in the file "PowerFactoryImport.wmf".

The diagrams are not identical, but the changes are reflected in the screenshot from PowerFactory. It looks like the coordination system is different in the two systems.

Supplementary files:
ODMS_exported_entso-e_16_od_15j14h_nl.JPG – diagram showing the export from ODMS
ODMS_imported_ENTSOE_16_BL_DI_CP_15J11h.JPG – result from importing Open Grid Systems changed diagram
ODMS_imported_ENTSOE_16_NL_TN_15J11h50_DI.JPG – result from importing DMSGroup changed diagram
ODMS_imported_entso-e_16_pf_15j14h_nl.JPG – result from importing PowerFactory changed diagram
PowerFactoryImport.wmf – result from PowerFactory after importing the changed diagram from ODMS

Date	Vendor		Test witness	
2011-07-14	Name	Signature	Name	Signature
	Michael Ford		Svein Olsen	

SINGLE TEST RECORD FORM

Test No: 33_1	Profile edition No: 2	Tool: ODMS	Score: 4

Test files:

Import	Export
ENTSO-E_Boundary_Set_28_June_2011_2ndEdition_EU.zip ENTSOE_16_BE.zip	ENTSOE_16_BE_OD_GE_14J13h.zip

Comments/Results/Issues:

The test was done on the BE MAS. Imported the boundary zip file and then the BE MAS zip file.
The "ENTSOE_16_BE.zip" includes the "ENTSOE_16_BE_GE.xml" file that described the geographical data.

SubStation: PP_Brussels (c1d5bfbf8f8011e08e4d00247eb1f55e): xPosition : 4.3450927734375 and yPosition : 50.92900848388672

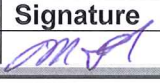
The file "ODMS_PP_Brussels_GE_Before.PNG" show this result.

This position was changed to: xPosition = 4.35 and yPosition = 50.93
The file "ODMS_PP_Brussels_GE_After.PNG" shows these changes.

The file was exported and checked to have the same numbers.

The file was imported by Open Grid Systems with the correct result. See file "GeoLocationSiemensImport.png"

Supplementary files:
GeoLocationSiemensImport.png
ODMS_PP_Brussels_GE_After.PNG
ODMS_PP_Brussels_GE_AfterCPImport.PNG
ODMS_PP_Brussels_GE_Before.PNG

Date	Vendor		Test witness	
	Name	Signature	Name	Signature
2011-07-14	Michael Ford		Svein Olsen