WG13 Issues - CIM18 Release Notes (Aggregate Report)

#	Priority	Subject	Completion Date	Solution Version	Breaking Change	Breaking Change Description
6260	Normal	Associations not conforming to modeling rules	02/11/2023	CIM18v03	No	
Release Notes						
The following association ends were updated to start with capital OTHER_CIM [1..1] SimulationResultCharacteristic.Y1valueSignal OTHER_CIM [0..1] SimulationResultCharacteristic.Y3valueSignal OTHER_CIM [0..1] SimulationResultCharacteristic.Y2valueSignal						
6259	Normal	Misplaced association description	02/11/2023	CIM18v03	No	
Release Notes						
Moded the association PerLengthLineParameter.WireAssemblyInfo description to the association end description New description is A WireAssemblyInfo used to compute the PerLengthParameter data in the Wires package.						
6258	Normal	Mass datatype is wrongly refereing to g instead of kg		CIM18v03	No	
Release Notes						
CIMDatatype Mass was corrected from multiplier =k to none, unit from =g to kg This is necessary to match with the UnitSymbol						
6257	High	ShuntCompensatorDynamics missing description	02/11/2023	CIM18v03	No	
Release Notes						
The folowing description added to the class Shunt compensator whose behaviour is described by reference to a standard model or by definition of a user-defined model.						
6254	Normal	Rename the IEC61970 top level package to Grid as well as all references to IEC61970 within the CIM	02/11/2023	CIM18v03	No	
Release Notes						
The existing IEC61970 package has been renamed to 'Grid' The IEC61970CIMVersion class was renamed to 'GridCIMVersion' References to WG13 were either removed or changed to UTF13 (i.e. the acronym for UCAIug Task Force 13) where/when relevant. There were other references within various descriptions of classes/attributes/packages to remove references to IEC where relevant.						
6253	Normal	Updates of Dynamics package	02/06/2023	CIM18v03	No	
Release Notes						
Number of issues found in an implementation of the draft 302 and 457. Changes enable more flexibility of the detailed model.						
6252	Normal	Modify URI of the packages under Dynamics package	02/06/2023	CIM18v03	No	
Release Notes						
Each subpackage of package Dynamics is uniquely identified by its URI. The URI changes if there is a change in the classes included in this package.						
6250	Normal	Update of CIM namespace	02/06/2023	CIM18v03	No	

Release Notes						
The namespace is changed in the WG13 version of CIM18v03. CMM will formalise this in the merged version. The nsuri tag value on the TC57CIM package was modified.						
5945	High	DCSwitch does not have open flag	02/06/2023	CIM18v03	No	
Release Notes						
The class DCSwitch is updated to include 4 attributes: open, normalOpen, locked, retained in order to match the modelling of teh AC Switch.						
5384	Normal	Update all UML diagrams to include the UCAIug "used with permission" notice	06/17/2022	CIM18v02	No	
Release Notes						
The "Reproduced with the permission of UCAIug" notification was applied to all UML diagrams within the IEC61970 package and its sub-packages.						
5383	Normal	CIM18 merge official Dynamics package changes corresponding to IEC 61970-457 Ed 2.0 and IEC 61970-302 Ed 2.0 published standards.	06/17/2022	CIM18v02	No	
Release Notes						
The latest Dynamics package that aligns with the newly published **IEC 61970-457 Ed 2.0** and **IEC 61970-302 Ed 2.0** standards has been merged into the IEC61970 package.						
5357	Normal	Documentation on ShuntCompensator.grounded and EnergyConsumer.grounded attributes	02/07/2023	CIM18v03	No	
Release Notes						
The descriptions are changed as follows ShuntCompensator.grounded "Required for Yn and I connections (as represented by ShuntCompensator.phaseConnection). True if the neutral is solidly grounded." EnergyConsumer.grounded "Required for Yn and I connections (as represented by EnergyConsumer.phaseConnection). True if the neutral is solidly grounded."						
5339	High	Copyright statement to be included in the 301 template	02/06/2023	CIM18v03	No	
Release Notes						
Following the agreement by WG13 on 61970-302. The same statements were applied to 61970-301 template, v02 here: http://iectc57.ucaiug.org/WG13/Shared%20Documents/61970%20Work%20in%20progress:%20models,%20documents%20and%20issues/CIM18/301%20Ed8/template_iec61970-301-Ed8-v02.docx						
5304	Normal	Clarify description on TransformerEnd attributes	02/11/2023	CIM18v03	No	
Release Notes						
The following changes are applied - Changed the description of TransformerEnd.grounded to: Used only for Yn and Zn connections indicated by PowerTransformerEnd.connectionKind. If true, the neutral is grounded and attributes TransformerEnd.rground and TransformerEnd.xground are required. If false, the attributes TransformerEnd.rground and TransformerEnd.xground are not considered. - Changed the description of TransformerEnd.rground to: Resistance part of neutral impedance. Zero indicates solidly grounded or grounded through a reactor. - Changed the description of TransformerEnd.xground to: Reactance part of neutral impedance. Zero indicates solidly grounded or grounded through a reactor. the template of 452 is updated - the 452 constraint C:452:SC:PowerTransformerEnd.grounded:grounding is deleted as the constraint is integrated in teh description. In the template of 452 there is an action item to update SHACL constraints.						
5285	Normal	Addition of value3 attributes in BasicIntervalSchedule and RegularTimePoint (possibly IrregularTimePoint as well to be consistent?)	06/21/2022	CIM18v02	No	
Release Notes						
A third set of value related attributes have been added to the **BasicIntervalSchedule** , **RegularTimePoint** , and **IrregularTimePoint** classes where applicable. The specific changes included:						

BasicIntervalSchedule.value3Multiplier (UnitMultiplier)
BasicIntervalSchedule.value3Unit (UnitSymbol)
BasicIntervalSchedule.value3Description (String)
RegularTimePoint.value3 (Float)
IrregularTimePoint.value3 (Float)

5151	Normal	Addition of value description attributes to BasicIntervalSchedule class.	06/21/2022	CIM18v02	No	

Release Notes

The following two attributes have been added to the **BasicIntervalSchedule** class:

BasicIntervalSchedule.value1Description (String) "Description for value1."
BasicIntervalSchedule.value2Description (String) "Description for value2."

5113	Normal	NonlinearShuntCompensator has ambiguity in definition of per section or total	02/11/2023	CIM18v03	Yes	Some attributes were renamed.

Release Notes

Applied the following changes
Change to the NonlinearShuntCompensatorPoint:
b is replaced with bTotal: Total positive sequence shunt (charging) susceptance at section noted by sectionNumber.
b0 is replaced with b0Total: Total zero sequence shunt (charging) susceptance at section noted by sectionNumber.
g is replaced with gTotal: Total positive sequence shunt (charging) conductance at section noted by sectionNumber.
g0 is replaced with g0Total: Total zero sequence shunt (charging) conductance at section noted by sectionNumber.

Modified the description of the NonlinearShuntCompensator to refere to the new attributes

Applied similar changes to the NonlinearShuntCompensatorPhase and NonlinearShuntCompensatorPhasePoint as well

Modified EQ and SC profiles in 61970-452.

5111	Normal	Versioning of CIM packages	02/11/2023	CIM18v03	No	

Release Notes

Two tag values were added to the UML
uri which has the URI of the package, e.g. http://ucaiug.org/CIM/Dynamics/1.0
version which is the version of the package, e.g. 1.0.0

5108	Normal	PowerTransformerEnd	02/11/2023	CIM18v03	No	

Release Notes

Part of the description of PowerTransformerEnd ws updated to
1) two PowerTransformerEnd-s shall be defined for a two Terminal PowerTransformer even if the two PowerTransformerEnd-s have the same rated voltage. The high voltage PowerTransformerEnd (TransformerEnd.endNumber=1) is the one used to exchange resistances (r, r0) and reactances (x, x0) of the PowerTransformer while the low voltage PowerTransformerEnd (TransformerEnd.endNumber=2) shall have zero impedance values.

5107	Normal	New Names proposal - inverted associations	10/19/2021	CIM18v01	No	

Release Notes

After applying the new Names proposal to the CIM18v00 release it was discovered that two associations had their source and target specifications (and descriptions) reversed. This has been corrected in the CIM18v01 release.

#	Priority	Subject	Completion Date	Solution Version	Breaking Change	Breaking Change Description
5067	High	Remove out of date Dataset and Profile UML	09/28/2021	CIM18v01	No	

Release Notes

The following association and attribute updates were applied to the **Dataset** related classes within the **GenericDataseSet** package:

- Removed the **Dataset-Profile** role
- Removed the **Profile** class from the diagram.
- Removed the **Dataset.name** and **Dataset.description** attributes.
- A new **Part303** package was introduced under the top level **IEC61970** package and is a peer package to **Base**. Subsequently the **GenericDataSet** package was moved to this new location. This reorg is beneficial to better represent the future IEC61970-303 publication as separate and distinct from Base (i.e. IEC61970-301)

#	Priority	Subject	Completion Date	Solution Version	Breaking Change	Breaking Change Description
5066	Normal	Address issues with the Names classes construct introduced as of CIM15	08/06/2021	CIM18v00	Yes	NameTypeAuthority class was removed and association role ends renamed.

Release Notes

The following changes were applied to CIM18 to address insufficiency in the existing Names construct in the 61970 package:

- Add a new association i.e. **Name (0..n) --> IdentifiedObject (0..1)** to handle alternative identifiers distinct and different from alternate names (i.e using the existing associatoin).

- Added a new class **ObjectType** to the Core package
    1. Added attribute **type** to the **ObjectType** class
    2. Added a new association **ObjectType (0..1) --> IdentifiedObject (0..n)**

- Added a new class **NamingAuthority** to replace **NameTypeAuthority** which was also deleted (a breaking change).
    1. Add **description** , **mRID** , and **name** attributes to this new class
    2. Added a new association **NameType (0..n) --> NamingAuthority (0..1)**
    3. Added a new association **Name (0..n) --> NamingAuthority (0..1)**

- Added the following attributes to existing classes:
    1. Added **language** and **mRID** attributes to the existing **Name** class
    2. Added **mRID** attribute to the **NameType** class

- Added a new association between the existing **Name** and **IdentifiedObject** classes with the following role end names and cardinality:
    1. **AlternativeIdentifier (0..n) --> UniqueIdentifiedObject (0..1)**

- Renamed the role end name for the existing **Name --> IdentifiedObject** associations. Changed it from it's plural form (i.e. Names) to its singular form. This to conform with formal CIM modeling guidelines

#	Priority	Subject	Completion Date	Solution Version	Breaking Change	Breaking Change Description
5065	Normal	The CIM definition for the Analog.positiveFlowIn attribute should be aligned with the more semantically pure definition being proposed for IEC 61850	06/30/2021	CIM18v00	No	

Release Notes

The CIM definition for the **Analog.positiveFlowIn** attribute should be aligned with the more semantically pure definition being proposed for IEC 61850. This request was part of IEC 61850 harmonization recommendations (Recommendation R16).

#	Priority	Subject	Completion Date	Solution Version	Breaking Change	Breaking Change Description
5064	Normal	Update the description on the PhaseCode and SinglePhaseCode classes to better clarify balanced and unbalanced usages.	06/30/2021	CIM18v00	No	

Release Notes

The descriptions of **PhaseCode** and **SinglePhaseKind** enumerations were updated as
part of IEC 61850 harmonization recommendations (Recommendation R10). This to
better clarify their use for balanced and unbalanced models.

#	Priority	Subject	Completion Date	Solution Version	Breaking Change	Breaking Change Description
5061	Normal	Address issues and clarity around the Control.controlType description	08/24/2020	CIM18v00	No	

Release Notes

The description of **Control.controlType** was:

"Specifies the type of Control, e.g. BreakerOn/Off, GeneratorVoltageSetPoint, TieLineFlow etc. The ControlType.name shall be unique among all specified types and describe the type."

This has now been changed to:

"Specifies the type of Control. For example, this specifies if the Control represents BreakerOpen, BreakerClose, GeneratorVoltageSetPoint, GeneratorRaise, GeneratorLower, etc.".

This was performed to align the description with the approach as expressed in Measurement.measurementType as we cannot have ControlType.name as mentioned in the original.

#	Priority	Subject	Completion Date	Solution Version	Breaking Change	Breaking Change Description
5059	Normal	The description of Terminal.phases refers to GroundSwitch,	08/24/2020	CIM18v00	No	

Release Notes

The description of **Terminal.phases** refers to GroundSwitch which is not a class in the CIM. This reference has been removed.

#	Priority	Subject	Completion Date	Solution Version	Breaking Change	Breaking Change Description
5057	Normal	The description for ShuntCompensator has an error that must be corrected.	07/01/2020	CIM18v00	No	

Release Notes

Addressed an error in the description of **ShuntCompensator** . Changed the sentence:

"A negative value for ReactivePerSection indicates that the compensator is a reactor."

to:

"A negative value for bPerSection indicates that the compensator is a reactor."

#	Priority	Subject	Completion Date	Solution Version	Breaking Change	Breaking Change Description
5055	High	The TapChangerControl class has a cardinality issue with the RegulatingControl.RegulatingCondEq association.	06/30/2020	CIM18v00	No	

Release Notes

It was discovered in the published release of IEC 61970-301 Ed. 7.0 that the **TapChangerControl** class had an issue in the cardinality of the **RegulatingControl.RegulatingCondEq** association inherited from **RegulatingControl** . The cardinality on the association was changed from "0..n" to "1..n" sometime after CIM17v34. A country comment during CDV of IEC 61970-452 (for CIM17) exposed an issue with this. The "1..n" cardinality imposes a requirement that an instance of a **TapChangerControl** must reference at least one instance of a **RegulatingCondEq** class type via the **RegulatingCondEq.RegulatingControl** association. This requirement could not be fulfilled for **TapChangerControls** and thus had to be rolled back resulting in the need for an amendment to IEC 61970-301 Ed. 7.0. Consequently, the "reverting" of this cardinality back to "0..n" needed to occur in both CIM17 for the amendment and in CIM18 under development. This issue (i.e. 5055) is to track this change.

#	Priority	Subject	Completion Date	Solution Version	Breaking Change	Breaking Change Description
5053	Normal	Add explanatory text to show the differences between BusbarSection and Junction	06/30/2021	CIM18v00	No	

Release Notes

Per an IEC 61850 harmonization recommendation (Recommendation R4) the CIM classes **BusbarSection** and **Junction** descriptions were updated. From a topology processing point of view the two classes are equivalent. In addition, **ConnectivityNodes** can be defined with or without associations to instances of these classes. IEC 61970-301 does not give clear guidance on when it would be appropriate for **ConnectivityNodes** to be associated with **BusbarSections**, **Junctions** or neither. This makes it difficult to define rules for automatic conversion from IEC 61850 SCL files. Section 4.5.4 in the standard has also been updated to better clarify.

| 5052 | Normal | Typographical errors needing correction in CIM18 | 06/16/2020 | CIM18v00 | No | |

Release Notes

Minor typographical updates to descriptions of **OperatingParticipant**, **IdentifiedObject.aliasName**, **CurveData.xvalue**, **BaseVoltage**, and **BasicIntervalSchedule**.

| 5051 | Normal | The description on the WaveTrap class is incorrect. | 06/15/2020 | CIM18v00 | No | |

Release Notes

The description on the **WaveTrap** class was incorrect. The description states:

"Line traps are devices that impede high frequency power line carrier signals yet present a negligible impedance at the main power frequency."

"Line traps" was replaced with "Wave Traps"

| 5050 | Normal | Description updates needed for the association between TopologicalNode and BusNameMarker. | 06/15/2020 | CIM18v00 | No | |

Release Notes

Corrected minor typos and wording issues discovered in the **BusNameMarker** role end description for the association between **TopologicalNode** and **BusNameMarker**. Updated the role end to read:

"A user defined topological node that was originally defined in a planning model not yet having topology described by ConnectivityNodes. Once ConnectivityNodes have been created they may be linked to user defined TopologicalNodes using BusNameMarkers."

| 5047 | Normal | Clarifications on equivalents, e.g., EquivalentInjection, ExternalNetworkInjections and the aggregate attribute | 02/11/2023 | CIM18v03 | No | |

Release Notes

- Added the following clarification to the EquivalentInjection description

Using EquivalentInjection to model a distribution network equivalent is recommended practice instead of using ExternalNetworkInjection-s if it is not necessary that the equivalent contains detailed information representing a short circuit equivalent according to IEC 60909 which is relevant for short circuit studies.

- Added the following clarification to the ExternalNetworkInjection description
It is only used if EquivalentInjection cannot provide the details required by IEC 60909 on short circuit equivalent of an external network.

- Modeified the following statement in the Equipment.aggregate to include ExternalNetworkInjection. The revised version is:
The attribute is not used for EquivalentBranch, EquivalentShunt, EquivalentInjection and ExternalNetworkInjection.

- Deleted the folling constraint from 452

- C:452:EQ:EquivalenInjection:instance

Using EquivalentInjection to model a distribution network equivalent is recommended practice instead of using ExternalNetworkInjection-s.

| 5046 | Normal | Remove deprecated attributes from ShuntCompensator and Switch classes | 08/06/2021 | CIM18v00 | Yes | Existing attributes that were declared deprecated in CIM17 have been removed |

Release Notes

The attributes **switchOnCount** and **switchOnDate** on the **ShuntCompensator** and **Switch** classes were flagged as deprecated in CIM17 and were removed now from CIM18. It was confirmed that these attributes are not in use in the IEC 61970-45x series standards nor in the IEC 61968 Part 3-9 series of standards.

| 5045 | High | Voltage-dependent reactive capability curve support | 02/07/2023 | CIM18v03 | Yes | There are changes to association end names and cardinalities. Due to association directions changes might also be seen as not breaking. |

Release Notes

changes to 301
- new attribute ReactiveCapabilityCurve.referenceVoltage
- change of cardinalities between ReactiveCapabilityCurve and EquivalentInjection
- modifications of associations between ReactiveCapabilityCurve and SynchronousMachine (change role name InitiallyUsedBySynchronousMachines to InitiallyUsedBySynchronousMachine; change role name ReactiveCapabilityCurves to ReactiveCapabilityCurve and SynchronousMachines to SynchronousMachine; change of cardinalities)
- modified the association role description (SynchronousMachine.InitialReactiveCapabilityCurve) to add: The reference voltage (exchnaged by ReactiveCapabilityCurve.referenceVoltage) for this ReactiveCapabilityCurve shall be equal to the BaseVoltage.nominalVoltage of the ConnectivityNode to which the Equipment is connected to. The information is obtained via the containment of the Equipment or the ConnectivityNode.
- Change role name from VsConverterDCSides to VsConverter, change cardinalities
- Add referenceVoltage to VsCapabilityCurve

Changes to 452
- added attribute ReactiveCapabilityCurve.referenceVoltage
- added attribute ReactiveCapabilityCurve.coolantTemperature
- added attribute ReactiveCapabilityCurve.hydrogenPressure
- change of cardinalities between ReactiveCapabilityCurve and EquivalentInjection
- change of cardinalities and role names between ReactiveCapabilityCurve and EquivalentInjection and SynchronousMachine
- add constraint: Constraint 1: A ReactiveCapabilityCurve shall have an instance of either ReactiveCapabilityCurve.SynchronousMachine or ReactiveCapabilityCurve.EquivalentInjection.
-- Add referenceVoltage to VsCapabilityCurve, update association cardinalities and role names

- The constraint C:452:EQ:SynchronousMachine:reactiveLimits shall be changed to:
ReactiveCapabilityCurve-s are not required if the reactive power limits of the SynchronousMachine do not vary with real power output. SynchronousMachine.minQ and SynchronousMachine.maxQ are required if ReactiveCapabilityCurve.SynchronousMachine and SynchronousMachine.InitialReactiveCapabilityCurve are not provided. If one or many of the association ends ReactiveCapabilityCurve.SynchronousMachine and/or SynchronousMachine.InitialReactiveCapabilityCurve are provided they take precedence to the information provided by the attributes SynchronousMachine.minQ and SynchronousMachine.maxQ. However, if both SynchronousMachine.minQ, SynchronousMachine.maxQ and ReactiveCapabilityCurve are present, the SynchronousMachine.minQ shall be equal to the min of CurveData.y1value-s and SynchronousMachine.maxQ shall be equal to the max of CurveData.y2value-s.
New constraint

If a ReactiveCapabilityCurve is provided for a SynchronousMachine, it takes precedence to the information provided by the attributes GeneratingUnit.maxOperatingP and GeneratingUnit.minOperatingP. Any operational constraints are defined by range constraint exchanged in other profile which defines these operational constraints. Validation of this constraint shall have severity "Info" in case GeneratingUnit.maxOperatingP and GeneratingUnit.minOperatingP are outside the ReactiveCapabilityCurve defined for the nominal voltage of the connected node.

5006	High	Overlap between transformer xMin and xThe TransformerEnd.x	02/07/2023	CIM18v03	No	

Release Notes

The following deprecated attributes are deleted in Base package and in 61970-452:

PhaseTapChangerLinear.xMin
PhaseTapChangerNonLinear.xMin

5004	High	Short circuit data for power electronicsCurrently PowerEle	02/11/2023	CIM18v03	No	

Release Notes

The following deprecated attributes are removed
PowerElectronicsConnection.x
PowerElectronicsConnection.r
PowerElectronicsConnection.x0
PowerElectronicsConnection.r0
PowerElectronicsConnection.xn
PowerElectronicsConnection.rn

The change is not considered a breaking change because attributes were deprecated in previous release. Changes does not impact 61970-452 and 61970-600 as these attributes were not included in CIM17 profile standards.