

WG13 Issues - CIM Issues #5063

There are a variety of issues with RegulatingControl. These

09/14/2021 03:48 PM - Herbert Falk

Status:	In Progress		
Priority:	Normal		
Target version:			
Author/Contact Info:	Todd Viegut	Standard(s):	61970-301, 61970-452, 61970-456
Base Release:	CIM17	Version:	
Solution to be Applied To:	61970cim18	Clause:	
Solution Version:		Sub-Clause:	
Solution Applied By:		Paragraph:	
Completion Date:		Table:	
CIM Keywords:	61970-Wires	Originally Closed in Version:	
Breaking Change:	No	Origination Date:	12/19/2020
Breaking Change Description:		Origination ID:	13_317
CIM Impacted Groups:	WG13	Originally Assigned To:	
Requestor:			

Description

There are a variety of issues with RegulatingControl. These include the following and must be addressed in CIM18:

There are multiple issues with the CIM control model:

1. Multiple RegulatingControls on the same controlled point as you describe. One reason to use multiple regulating controls is discrete vs continuous control that require different parameter settings. All RegulatingControls on the same power flow bus must then be enabled.
2. With multiple RegulatingControls they may have different target values (targetValue) which force the receiving tool to make a choice. If different tools make different choices then we have a problem. I have seen this in a few IGMs.
3. The control dead band (targetDeadband) is different for different type of devices which makes it difficult to use the same RegulatingControl, e.g. switched and tapped shunts.
4. A RegulatingControl is connected to the controlled power flow bus (TopologicalNode) via a Terminal. In a node breaker model it is common that the Terminal is at a Switch. It may then happen that the RegulatingControl becomes disconnected from the power flow bus as a consequence of switching while the controlling devices (subclasses of RegulatingCondEq) are still actively controlling. This has been observed to happen in several IGMs.

So the CIM voltage/reactive control model is broken and need a complete revision. For backwards compatibility we must keep the current in parallel with the revised.

Proposed Solution

A possible solution is to change the cardinality to RegulatingControl [0..*] - [0..*] Terminal which makes it possible to connect the RegulatingControl to all possible controlled points. However, there may be other side effects of this change so it must be carefully investigated before implemented.

Some initial formulated requirements (others are anticipated to be added):

1. The control model shall provide a single voltage target value for the controlled power flow bus and shall have a single enable/disable flag for the control at that bus.
2. Devices needing the same control dead bands shall be grouped and have a single and shared dead band value.
3. In node breaker models bus splits must be supported and the controlled point shall follow the possible reconfigurations that

appears due to switching.

The RegulatingControl must be updated to meet these requirements.

Assign to Control Function Subgroup

Decision

Oslo, 14 June 2023

This issue will need to be closed together with the implementation of the new control. The topic and integrating proposals from Tom, ENTSO-E and Takashi

Oslo 15 June 2023:

The issue 4808 related to this issue therefore issue 4808 is closed and this issue should consider the issue related to modelling of master/follower tap changer control schemes that should be incorporated into the overarching function and controls conversation.

History

#1 - 09/14/2021 06:32 PM - Eric Stephan

- Proposed Solution updated

- Decision updated

#2 - 12/01/2021 11:41 AM - Eric Stephan

- Proposed Solution updated

- Standard(s) set to 61970-301, 61970-452, 61970-456

- Decision updated

- CIM Keywords 61970-Wires added

#3 - 02/11/2023 03:50 AM - Chavdar Ivanov

- Status changed from Open to Review

It looks like these points are covered by the proposal of control in ENTSO-E extensions. When this is reviewed the issue can be closed.

#4 - 06/14/2023 09:54 AM - Chavdar Ivanov

- Status changed from Review to In Progress

- Decision updated

#5 - 10/08/2023 12:42 AM - Chavdar Ivanov

- Decision updated