

## WG14 Part 9 Issues - CIM Issues #6611

### Formulaic UOMs

11/27/2023 12:29 PM - David Haynes

<b>Status:</b>	New		
<b>Priority:</b>	Normal		
<b>Target version:</b>			
<b>Author/Contact Info:</b>	dhaynes@hubbell.com	<b>Standard(s):</b>	61968-9
<b>Base Release:</b>		<b>Version:</b>	4
<b>Solution to be Applied To:</b>		<b>Clause:</b>	Annex C
<b>Solution Version:</b>		<b>Sub-Clause:</b>	C.2.17
<b>Solution Applied By:</b>		<b>Paragraph:</b>	
<b>Completion Date:</b>		<b>Table:</b>	
<b>CIM Keywords:</b>		<b>Originally Closed in Version:</b>	
<b>Breaking Change:</b>	No	<b>Origination Date:</b>	
<b>Breaking Change Description:</b>		<b>Origination ID:</b>	
<b>CIM Impacted Groups:</b>	WG14	<b>Originally Assigned To:</b>	
<b>Requestor:</b>	David Haynes		

#### Description

There is at least one utility in North America requiring the revenue meter to measure VA in a special way. If the PF becomes leading, it only accumulates Watts. Otherwise, it accumulates Volts x Amps (VA). There can be "kinds" of VA in which the measured value is demand, arithmeticApparentDemand, distortionApparentDemand, etc. This type of energy (or power, or demand) measurement defies description as a single fundamental Unit Of Measure. It is a complex formulaic UOM. Furthermore, if one new formula can be created from SI units, other new formulas may be created by someone else in the world as well.

Our problem is that there is no universal definition of what is "fair" from a billing perspective. The revenue meters attempt to accommodate many unusual units of measure that would never be considered by a power engineer.

#### Proposed Solution

- 1.) One approach would be to tell such implementers that they are on their own. Energy should be expressed in Si units that are universally agreed upon.
- 2.) Another approach would be to accommodate innovative formulas with a new unit of measure called "Formula1" or "F1" being the first in a series.  
"F1" would be defined as "VA when PF is zero or lagging, and Watts when PF is leading." We could define "F2", "F3", and a few more as "reserved for future use", and place a note in the standard that users are encouraged to participate in the UCAIug and report their formulas if they need them included in a future edition of the standard.
- 3) Suggest to the user of the standard that having no unit of measure may also be an option for them, since the unit of measure cannot be described in simple terms, it is indescribable.

#### History

#1 - 11/27/2023 07:09 PM - David Haynes

- Proposed Solution updated