Future Baseline Update – Dynamic Loss Allocation

RMSC/MSP User Group Meeting

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November 24, 2016

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Loss Allocation - Background

- Market Manual 3.7: Totalization Table Registration section 2.3.4: Apportioning Transformation Losses states :

  The transformation losses associated with the main transformers at the *defined meter point* must be allocated among all *metered market participants* pertaining to that *defined meter point*, based on an agreement among all affected *metered market participants*.

- Presently the agreement consists in fix ratios (percentages) applied to the loss coefficients.

- RMSC presentation Allocation of Power Transformer SSLA dated May 16, 2007 concluded:

  The total Load Loss is correctly calculated only when the load distribution match the ratio agreed between MMPs. (otherwise the Load Loss Error > 0)

  If the apportion could be recalculated on each time interval (MMPs loads ratio) the total Load Loss will be correct all the time. MVSTAR did not have functionality to support a Dynamic Load Allocation, A, B, k1, k2, k3 being fix factors.

Dynamic Loss Allocation - MDMS

- One of the new Meter Data Management System requirements was to be able to perform the Dynamic Loss Allocation – to calculate the ratios for each time interval

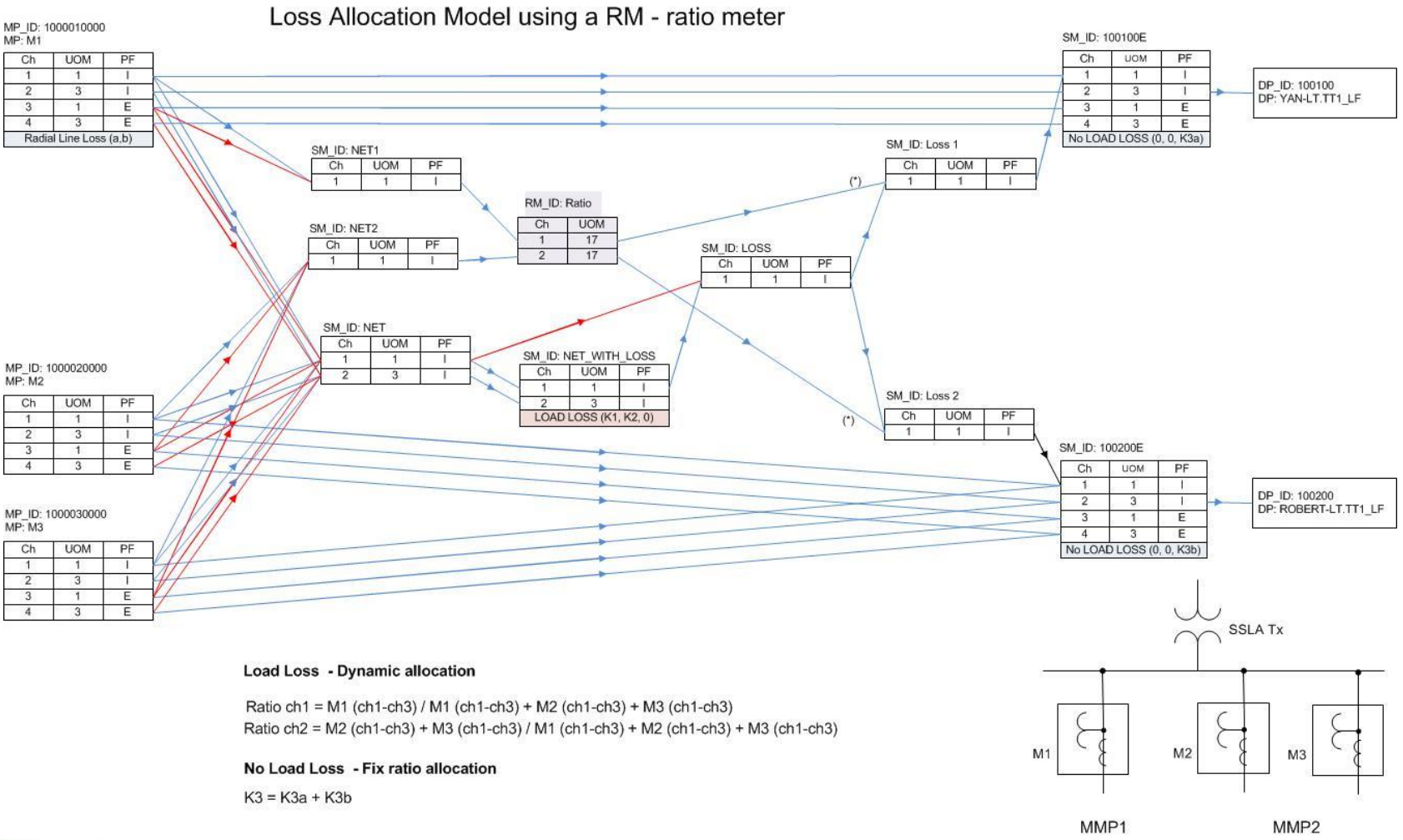
- In LPS this function is performed using an element called "Ratio Point" part of Totalization Table structure built. A Ratio Point accepts as inputs the same type of UOM unit of measure (kWh,V2h, etc.) in all channels and returns as result the ratio between the input channel value and the sum of all input channels values; if the sum of all channels value is zero the result is 1/number of channels

$$RMout_i = \frac{|RMin_i|}{\sum_1^n |RMin_i|}$$

- This will allow the loss allocation agreements to be changed from fix to dynamic ratios; for example the input could be the Net Active Load of each Market Participant sharing the transformers losses

- Dynamic Loss Allocation will require a confidentiality agreement between Market Participants; if Net Active Load will be use to calculate the ratios , meter data will be available to all Market Participants sharing dynamic losses.

Dynamic Loss Allocation Totalization Model



Load Loss - Dynamic allocation

Ratio ch1 = M1 (ch1-ch3) / M1 (ch1-ch3) + M2 (ch1-ch3) + M3 (ch1-ch3)
Ratio ch2 = M2 (ch1-ch3) + M3 (ch1-ch3) / M1 (ch1-ch3) + M2 (ch1-ch3) + M3 (ch1-ch3)

No Load Loss - Fix ratio allocation

K3 = K3a + K3b

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Next Steps

- Review existing processes and Market Manuals
- Provide training to MSPs
- Baseline change with legal review
- Start the review process in 2017

Questions