[Feature #622: Parameters not available in standardized LN - IEC 61850 User Feedback Task Force - UCAIug Issue Tracking System](https://redmine.ucaiug.org/issues/622)

Some parameters needed for RTE functions are not available in normalized LN. Besides, we need to have some generic parameters (with threshold, delay, boolean), for example in LN GAPC.

As illustration of the use case, the LN LSET above contains parameters required for Rte functions and not covered by settings in LN included in the IEC 61850 standard.

| **LSET - Rte Extended Setting** |
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| **DO Name** | **CDC** | **T** | **Explanation** | **M-O-C nds/ds** |
| **Descriptions** |
| NamPlt | LPL |  | Inherited from: Domain LN | O/O |
| **Status Information** |
| Beh | ENS |  | Inherited from: Domain LN | M/M |
| Health | ENS |  | Inherited from: Domain LN | O/O |
| **Settings** |
| OpDlTmms | ING |  | Instance of Operate Delay Time | Omulti/Omulti |
| DlTmms | ING |  | Instance of DelayTime | Omulti/Omulti |
| StrVal | ASG |  | Instance of threshold | Omulti/Omulti |
| OnOff | SPG |  | Instance of Boolean parameter | Omulti/Omulti |
| SetNb | ING |  | Instance of integer parameter | Omulti/Omulti |
| SetPhNum | ENG |  | Phase (ph0, ph3, ph4, ph7, ph8, ph11, neutral), cf. §3.3.2 | O/O |
| SetPhsOrig | ENG |  | Indication of single phase or combined phase voltage (a, b, c, ab, bc, ca, a\_b\_c, ab\_bc\_ca) | O/O |
| NamAccRtg | VSD |  | Accuracy class rating according to 61869-9 | O/O |
| PhyConnITF | ENG |  | Indication of the type of a communication interface (e.g. for line differential protection). Possible values: FO\_850\_multimode, FO\_1310\_monomode, FO\_1550\_monomode, X21V11 | Omulti/Omulti |
| SetRef | ORG |  | Setting for indicating an IEC 61850 object reference | Omulti/Omulti |
| VRtg | ASG |  | Rated Voltage | O/O |
| ARtg | ASG |  | Rated Current | O/O |
| HzRtg | ASG |  | Rated Frequency | O/O |

We have 2 use cases:

* **Some generic parameters need to be introduced**.
	+ In particular: delays, thresholds, Boolean and integer parameters (opDITmms, DITmms, StrVal, OnOff, SetNb). These kind of parameters can already be found in existing LN, but with a specific semantic meaning, which cannot be applied to all users’ specific applications.
	+ SetRef: setting for indicating an IEC 61850 object reference. Some function need to have a setting indicating which input (for example SV streams, phasors, CB position…) has to be used. There is no setting DO defined in existing LN, it is proposed to add this DO in LN GAPC to make it generic.
	+ Proposal is to add these parameters to LN GAPC.
* **Some specific parameters are also proposed** :
	+ SetPhNum : Phase (ph0, ph3, ph4, ph7, ph8, ph11, neutral) to be used. Should be used in each specific LN related to voltage (RREC, PIOC, PTOC, PTOV, PIOV, FXOT, FXUT,…).
		- Use case 1 (configuration): indication of the phase to be use for recloser on voltage control. This allows to indicate which voltage transformer on the line side is to be used, to compare the line voltage to a single phase voltage provided by a VT installed on the busbar.
		- Use case 2 (setting): overcurrent protection in order to indicate the phase which is most loaded and shall be used at reference.
	+ SetPhsOrig: Indication of single phase or combined phase voltage (a, b, c, ab, bc, ca, a\_b\_c, ab\_bc\_ca). Should be used in each specific LN related to voltage (PIOC, PTOC, PTOV, PIOV, FXOT, FXUT…).
		- Use case 1: setting for tap changer regulator, indicating which phase to ground or phase to phase voltage has to be used as input of the regulator.
		- Use Case 2: overvoltage protection, to choose phase to ground or phase to phase voltage to be used.
	+ NamAccRtg: this is a setting already associated with TCTR, but it is also needed for some protection LN, in particular the LN PDIS. This enable to adapt the application to the accuracy of the CT.
	+ PhyConnITF: Indication of the type of a communication interface (e.g. for line differential protection). Possible values: FO\_850\_multimode, FO\_1310\_monomode, FO\_1550\_monomode, X21V11
	+ VRtg – ARtg – HzRtg: some protection functions need the indication about the rated primary voltage, current and frequency. It is proposed to add these parameters to all protection LN using analogue input values.