# 2.0 Data available from SCADA team

## 2.1 List of features to updated/maintained in Geodatabase

As per discussions with SCADA team all the features having External SCADA_ID's within 220kV/33kV-22kV/11kV are to be maintained in the GIS

E.g. some of features are

1. Circuit Breaker (220kV/33kV/11kV)
2. Isolators (220kV/33kV/11kV)
3. Power Transformer (220kV/33kV/11kV)
4. Fault Passage Indicator (FPI) (11kV)

## 2.2 Input format from SCADA team

The SCADA team (REMI, Mumbai) will be responsible for making availability of External SCADA ID's both maintained in their SCADA Network and in DMS network in the following format

| EXTERNAL_IDENTITY | IDENTIFICATION_TEXT |
|---|---|
| | |

The above format is stored and provided/ made available to the concerned GIS team in excel format **(.xls)**

## 2.3 Duration of updated/change External SCADA ID from SCADA team

**As and when changes** occur in SCADA & DMS Networks for each feature as per list in 2.1 and in the format defined in 2.2

The latest report would contain new/modified as well as previous included unchanged External SCADA ID's too.

(For e.g. If any changes/ Updation occurred in features within EHV station would result in all modified/updated/unchanged External SCADA'ID included in the new provided excel sheet

Similarly for DMS Substation, any Updation/changes would result in all modified/updated/unchanged External SCADA'ID included in the new provided excel sheet.)

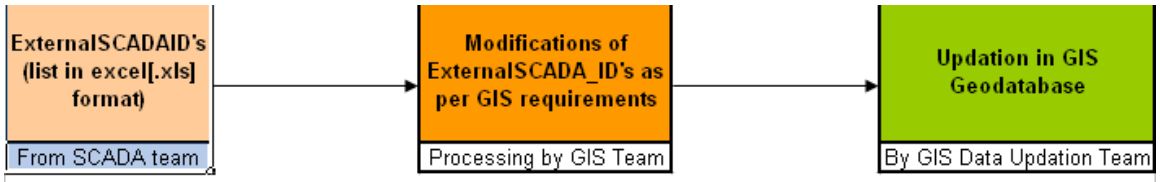
## 2.4 Mode of Communication

The above described excel file would be communicated to respective concerned (GIS team) through an **attachment** via **EMAIL**

## 2.5 General Dependencies

- The excel so provided would be EHV Station wise (220kV / 33kV / 11kV) or DMS substation wise
- Parameter list and samples are provided in ANNEXURE for 220kV/ 33kV / 11kV

# 3.0 Processing required before Updation in GIS Geodatabase




Diagrammatic representation of process flow

The data so provided from the SCADA team is in following format

| EXTERNAL_IDENTITY | IDENTIFICATION_TEXT |
|---|---|
| 24THRD11 15451 CB | 24thRd 11kV 15451 B620 |
| 24THRD11 15452 CB | 24thRd 11kV 15452 Circuit Breaker |
| 24THRD11 15453 CB | 24thRd 11kV 15453 Circuit Breaker |
| 24THRD11 15454 CB | 24thRd 11kV 15454 Circuit Breaker |

External SCADA ID is obtained from above format from the values in the column **"External Identity"** of the above said excel file

## 3.1 Reading External_Identity value

The External_Identity columns values itself contains following information (as highlighted in each step)

1. Contains the Receiving Station Name / Sub Station Name (as highlighted)

| EXTERNAL_IDENTITY | IDENTIFICATION_TEXT |
|---|---|
| 24THRD11 15451 CB | 24thRd 11kV 15451 B620 |

2. Contains voltage level at which the feature is placed

| EXTERNAL_IDENTITY |
|---|
| 24THRD11 15451 CB |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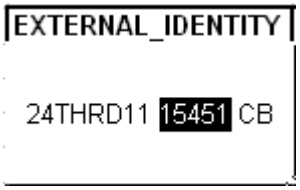
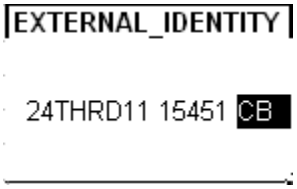
3. SwitchID number pertaining to given feature (Transformer/CB/Switch)




4. Type of parameter




## 3.2 Revised External_Identity values and Updation

Now to upload external SCADA'ID in the geodatabase we need to match the SwitchID available in the **"External_Identity"** column with SwitchID available for a given feature present in GIS Geodatabase.

Also the parameter name from **"External_Identity"** column has to be removed before Updation in GIS Geodatabase.

The following fig shows processed format of the **"ExternalSCADAID"** made available and their corresponding SwitchID

| ExternalSCADAID | SwitchID |
|---|---|
| 24THRD11 15451 | 15451 |
| 24THRD11 15452 | 15452 |
| 24THRD11 15453 | 15453 |
| 24THRD11 15454 | 15454 |
| 24THRD11 15455 | 15455 |

(Note: the spacing between the parameter and SwitchID is kept as it is)

This excel table can be later used to update the **"ExternalSCADAID's"** for a particular feature based upon the SwitchID present in the excel file and SwitchID's available in attribute table of its respective feature in the geodatabase using Join method available in GIS.

## ANNEXURE

The excel contains list of all ExternalSCADAID present in that EHV Station (220kV / 33kV / 11kV) or DMS Station based on following parameters

Following is the list of parameters that need to be monitored

| Sr.No | Equipment Type | Parameters | Monitored For |
|---|---|---|---|
| 1. | Circuit Breaker | CB | Transmission & Distribution |
| | | AUTOTRIP | Distribution |
| | | MW | Distribution |
| | | IY | Distribution |
| | | BTI | Distribution |
| 2. | Isolator | ISO | Distribution |
| | | | Transmission |
| 3. | Power Transformer | UNDERVOLT | Distribution |
| | | INTERTRIP | Distribution |
| | | OTI | Transmission |
| | | LOWOILLEVEL | Transmission |
| 4. | Bus Bar | BVOLTAGE | Transmission |
| | | BFREQUENCY | Transmission |
| | | MW | Transmission |
| | | VRY | Transmission |

* Note

- Distribution – 33-22/11kV
- Transmission – 220kV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## Annexure 1.0

| EXTERNAL_IDENTITY | IDENTIFICATION_TEXT |
|---|---|
| ERANGL11 25587 7SJ61NEUTCURR | Erangle 11kV 25587 7SJ61 Neut Curr |
| ERANGL11 25587 7SJ61PF | Erangle 11kV 25587 7SJ61PF |
| ERANGL11 25587 7SJ61PHL1CURR | Erangle 11kV 25587 7SJ61 Ph L1 Curr |
| ERANGL11 25587 7SJ61PHL1CURRREC | Erangle 11kV 25587 7SJ61 Ph L1 Curr Rec |
| ERANGL11 25587 7SJ61PHL2CURR | Erangle 11kV 25587 7SJ61 Ph L2 Curr |
| ERANGL11 25587 7SJ61PHL2CURRREC | Erangle 11kV 25587 7SJ61 Ph L2 Curr Rec |
| ERANGL11 25587 7SJ61PHL3CURR | Erangle 11kV 25587 7SJ61 Ph L3 Curr |
| ERANGL11 25587 7SJ61PHL3CURRREC | Erangle 11kV 25587 7SJ61 Ph L3 Curr Rec |
| ERANGL11 25587 FREQUENCY | Erangle 11kV 25587 Frequency |
| ERANGL11 25587 I | Erangle 11kV 25587 I |
| ERANGL11 25587 IB | Erangle 11kV 25587 Ib |
| ERANGL11 25587 IR | Erangle 11kV 25587 Ir |
| ERANGL11 25587 IUNBAL | Erangle 11kV 25587 IUNBAL |
| ERANGL11 25587 IY | Erangle 11kV 25587 Iy |
| ERANGL11 25587 KW | Erangle 11kV 25587 kW |
| ERANGL11 25587 MVA | Erangle 11kV 25587 MVA |
| ERANGL11 25587 PF | Erangle 11kV 25587 PF |
| ERANGL11 25587 PFB | Erangle 11kV 25587 PFb |
| ERANGL11 25587 PFR | Erangle 11kV 25587 PFr |
| ERANGL11 25587 PFY | Erangle 11kV 25587 PFy |
| ERANGL11 25588 7SJ61NEUTCURR | Erangle 11kV 25588 7SJ61 Neut Curr |
| ERANGL11 25588 7SJ61PF | Erangle 11kV 25588 7SJ61PF |
| ERANGL11 25588 7SJ61PHL1CURR | Erangle 11kV 25588 7SJ61 Ph L1 Curr |
| ERANGL11 25588 7SJ61PHL1CURRREC | Erangle 11kV 25588 7SJ61 Ph L1 Curr Rec |
| ERANGL11 25588 7SJ61PHL2CURR | Erangle 11kV 25588 7SJ61 Ph L2 Curr |
| ERANGL11 25588 7SJ61PHL2CURRREC | Erangle 11kV 25588 7SJ61 Ph L2 Curr Rec |
| ERANGL11 25588 7SJ61PHL3CURR | Erangle 11kV 25588 7SJ61 Ph L3 Curr |
| ERANGL11 25588 7SJ61PHL3CURRREC | Erangle 11kV 25588 7SJ61 Ph L3 Curr Rec |
| ERANGL11 25588 FREQUENCY | Erangle 11kV 25588 Frequency |

Sample Excel file for EHV Station and External SCADAID within it

## Annexure 2.0

| EXTERNAL_IDENTITY | IDENTIFICATION_TEXT |
|---|---|
| D_ERNGAFCO 13908BTI | D_Erangl Afco 13908BTI |
| D_ERNGAFCO 16249BTI | D_Erangl Afco 16249BTI |
| D_ERNGAFCO 4034 BTI | D_Erangl Afco 4034 BTI |
| D_ERNGAFCO 4035 BTI | D_Erangl Afco 4035 BTI |
| D_ERNGAIR MARVE 26778BTI | D_Erangl Air Marve 26778BTI |
| D_ERNGAIR MARVE 26779BTI | D_Erangl Air Marve 26779BTI |
| D_ERNGAIR MARVE 26780BTI | D_Erangl Air Marve 26780BTI |
| D_ERNGAKSA 2 12613BTI | D_Erangl Aksa 2 12613BTI |
| D_ERNGAKSA 2 12614BTI | D_Erangl Aksa 2 12614BTI |
| D_ERNGAKSA 2 12615BTI | D_Erangl Aksa 2 12615BTI |
| D_ERNGAKSA BEACH 7868 BTI | D_Erangl Aksa Beach 7868 BTI |
| D_ERNGAKSA BEACH 7869 BTI | D_Erangl Aksa Beach 7869 BTI |
| D_ERNGAKSA BEACH 7870 BTI | D_Erangl Aksa Beach 7870 BTI |
| D_ERNGAKSA BEACH 7871 BTI | D_Erangl Aksa Beach 7871 BTI |
| D_ERNGAKSA NT 2877 BTI | D_Erangl Aksa North 2877 BTI |
| D_ERNGAKSA NT 2878 BTI | D_Erangl Aksa North 2878 BTI |
| D_ERNGAKSA NT 2879 BTI | D_Erangl Aksa North 2879 BTI |
| D_ERNGBALI RESID 29836BTI | D_Erangl Bali Residency 29836BTI |
| D_ERNGBALI RESID 29837BTI | D_Erangl Bali Residency 29837BTI |
| D_ERNGBALI RESID 29838BTI | D_Erangl Bali Residency 29838BTI |
| D_ERNGBAY VIEW 26562BTI | D_Erangl Bay View 26562BTI |
| D_ERNGBAY VIEW 26563BTI | D_Erangl Bay View 26563BTI |
| D_ERNGBAY VIEW 26564BTI | D_Erangl Bay View 26564BTI |
| D_ERNGBAY VIEW 30415BTI | D_Erangl Bay View 30415BTI |
| D_ERNGBHATIA ISL 29069BTI | D_Erangl Bhatia Island 29069BTI |
| D_ERNGBHATIA ISL 29070BTI | D_Erangl Bhatia Island 29070BTI |
| D_ERNGBHATIA ISL 29071BTI | D_Erangl Bhatia Island 29071BTI |
| D_ERNGBHATTI VLG 14312BTI | D_Erangl Bhatti Village 14312BTI |
| D_ERNGBHATTI VLG 14313BTI | D_Erangl Bhatti Village 14313BTI |
| D_ERNGBHATTI VLG 14314BTI | D_Erangl Bhatti Village 14314BTI |
| D_ERNGCHRSH STDO 31464BTI | D_Erangl Cherish Studio 31464BTI |
| D_ERNGCHRSH STDO 31465BTI | D_Erangl Cherish Studio 31465BTI |

Sample Excel file for DMS Controlled SubStation and External SCADAID within it

## Annexure 3.0

| EXTERNAL_IDENTITY | IDENTIFICATION_TEXT |
|---|---|
| GHD220220TR1CB MW | Ghod220 220kV TR1CB MW (Transducer) |
| GHD220220TR1CB VRY | Ghod220 220kV TR1CB Vry |
| GHD220100T1OTI | Ghod220 100MVA-T1 Oil Temp Ind |
| GHD220100T1LOWOILLEVEL | Ghod220 100MVA-T1 Oil Level Low |
| GHD220100T1HVWDGTEMP | Ghod220 100MVA-T1 HV Wdg Temp |
| GHD220100T1LVWDGTEMP | Ghod220 100MVA-T1 LV Wdg Temp |
| GHD220220TR2CB MW | Ghod220 220kV TR2CB MW (Transducer) |
| GHD220220TR2CB VRY | Ghod220 220kV TR2CB Vry |
| GHD220100T2OTI | Ghod220 100MVA-T2 Oil Temp Ind |
| GHD220100T2LOWOILLEVEL | Ghod220 100MVA-T2 Oil Level Low |
| GHD220100T2HVWDGTEMP | Ghod220 100MVA-T2 HV Wdg Temp |
| GHD220100T2LVWDGTEMP | Ghod220 100MVA-T2 LV Wdg Temp |
| GHD220220TR3CB MW | Ghod220 220kV TR3CB MW (Transducer) |
| GHD220220TR3CB VRY | Ghod220 220kV TR3CB Vry |
| GHD220100T3OTI | Ghod220 100MVA-T3 Oil Temp Ind |
| GHD220100T3LOWOILLEVEL | Ghod220 100MVA-T3 Oil Level Low |
| GHD220100T3HVWDGTEMP | Ghod220 100MVA-T3 HV Wdg Temp |
| GHD220100T3LVWDGTEMP | Ghod220 100MVA-T3 LV Wdg Temp |
| GHD220220TR4CB MW | Ghod220 220kV TR4CB MW (Transducer) |
| GHD220220TR4CB VRY | Ghod220 220kV TR4CB Vry |
| GHD220100T4OTI | Ghod220 100MVA-T4 Oil Temp Ind |
| GHD220100T4LOWOILLEVEL | Ghod220 100MVA-T4 Oil Level Low |
| GHD220100T4HVWDGTEMP | Ghod220 100MVA-T4 HV Wdg Temp |
| GHD220100T4LVWDGTEMP | Ghod220 100MVA-T4 LV Wdg Temp |

Sample Excel file for Transmission Station and External SCADAID within it