Description of the input data for the usage of the nodal load observer

All data must be concentrated on one Microsoft Excel file (with 9 sheets). (For example see file example\_data\_grid.xlsx)

All sheets described in the bullet points below.

1. Data related to the topology of the grid (relationship nods and edges of the given grid)
   * columns A and B represents the number of the nodes that, i.e. a edge exits between the nodes in column A and column B per one row (edge one A1 to B1, edge two A2 to B2 and so on ...)
   * columns C and D represents the real parts and and imaginary parts of a complex numbers that is associated to row j with j = 1,...,N (zj = Cj + Dj)
   * columns E and F represents the real parts and and imaginary parts of a complex numbers that is associated to row j, if a transformator on the edge (i.e. row) is available
2. Active power (Pk) on nods
   * Represents the measurements of the active power on M time stamps on N nods (i.e. the matrix of active power has the dimension N x M); column A represents the numbers of the nodes
3. Inactive power (Qk) on nods
   * Represents the measurements of the inactive power on M time stamps on N nods (i.e. the matrix of inactive power has the dimension N x M) ); column A represents the numbers of the nodes
4. Voltage measurements (Vk)
   * Voltage mesurements on M time stamps
5. Active power (Pk) on edges
   * Column A and column B represents the nodes that are defining a edge (i.e per row one edge between node in column A and node in column B)
   * The columns below measurements of active power on M time stamps
6. Inactive power (Qk) on edges
   * Column A and column B represents the nodes that are defining a edge (i.e per row one edge between node in column A and node in column B)
   * The columns below measurements of inactive power on M time stamps
7. Base values
   * Base value voltage in cell B1 and base value apparent power (mega volt ampere) in cell B2 (cell B2 is cell B1 to square)
8. Pseudo measurements, active power on nodes
   * If active power measurements for one node is not available, then pseudo measurements must be defined, i.e. on all nodes that a not a part of the sheet 3, pseudo measurements of active power on M time stamps must be listed
9. Pseudo measurements, inactive power on nodes
   * If inactive power measurements for one node is not available, then pseudo measurements must be defined, i.e. on all nodes that a not a part of the sheet 3, pseudo measurements of inactive power on M time stamps must be listed