

# Electrical Distribution Service Statement of Work

## **Asset Connect Sensors and receivers installation**

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## 1 Executive summary

The purpose of this document is to describe the Schneider Electric Asset Connect offer. This service will be executed by Schneider Electric certified service engineers.

Asset Connect provides equipment upgrade and modernization allowing digital connection to local Scada or Ecostruxure Asset Advisor. Options for SMD Substation Monitoring Device is also available.

This Service Agreement offer is related to:

- Preliminary asset audit,
- Equipment upgrade with smart sensors or digital protection relay
- Network configuration
- Test and installation report

### Preliminary asset audit

- The asset audit is performed before equipment upgrade and provide a comprehensive list of :
  - Electrical distribution equipment connectable
  - Description of networks (Modbus/ LAN/...)
  - Technical description of equipment upgrade to digitize installation
- These services include all labor and travel expenses.
- Specifically designed for LV and MV switchgear, transformers and Busway, equipment upgrade allows prediction of failure and helps to maximize uptime, with or without shutting down the equipment. Please, consult with your local Schneider Electric Services Sales Representative or reseller for details on ED equipment upgradable.
- The site report delivered by Schneider Electric Field Services will cover all results and recommendations, such as modernization proposal on some equipment.

## Equipment Upgrade

- Medium Voltage switchgear could be upgraded with
  - TH110 for connection temperature,
  - CL110 for humidity purpose
  - Digital protection relay for Circuit Breaker health status follow-up.
- Low Voltage switchgear could be upgraded with
  - TH110 for connection temperature,
  - CL110 for humidity purpose
  - Digital protection relay for Circuit Breaker health status follow-up.
- Dry and Oil Transformers could be upgraded with
  - TH110 for connection temperature,
  - CL110 for humidity purpose
  - Digital control relay for Circuit Breaker health status follow-up.
- Busways could be upgraded with :
  - CL110 for humidity follow-up.

## Receiver and concentrator

- SMD BOX (Substation Monitoring Device) could be used with Medium Voltage switchgear, Low voltage switchgear and Dry transformer to provide client with local HMI, SMS and alarms. SMD could be connected :
  - Directly to local scada
  - To COMX to enable Ecostruxure Asset Advisor services.
- Satellite Modbus Serial BOX could be used to collect TH110 and CL110 information in separated rooms associated to SMD BOX.
- DIGITAL BOX : Specific box for only Ecostruxure Asset Advisor connection, no local feature associated, no HMI.
- Satellite Modbus TCP BOX could be used to collect TH110 and CL110 information in separated rooms associated to DIGITAL BOX. The Satellite Modbus TCP BOX is required to connect thermal monitoring of busways to local client scada.

## Network configuration

- Schneider Electric Field Services will dispatch highly skilled certified engineer(s) to configure equipment network.

## Test and installation report

- A service report is prepared and submitted to the Customer following equipment upgrade and network creation/evolution (could include single line diagram update).

## 2. Features and benefits

Features	Benefits
<b>Temperature connection monitoring</b>	Help prevent from loose connection issue
	Could replace IR periodical inspection
	Continuous monitoring connection temperature
<b>Humidity monitoring</b>	Help to prevent from corrosion
	Help to prevent from Partial Discharge
	Continuous monitoring of humidity
<b>MV Circuit Breaker Monitoring (through protection relay - SEPAM)</b>	Monitor number of CB operations
	Monitor cumulative breaking current (test current shall not be cumulated)
	Monitor operating times
	Monitor charging time
	Monitor number of racking in/out operations
<b>SMD : Substation Monitoring Device</b>	HMI (limited to 16 MVS, 16 TRSF, 60 LV connections)
	SMS for status message
	Connectable to local SCADA (Modbus TCP)

## 3. Details of service

The installation will be carried out by a Schneider Electric Field Service Representative (FSR) on an agreed date with the client.

The following table lists the details of the service tasks provided with this assessment.

Step	Activities	Description
STEP 1	Installation assessment	Inspect the devices to ensure; equipments correspond to drawings and single line diagrams, List connectable equipment, list upgradable equipment, list critical asset and collect information about existing network and internet communication capabilities
STEP 2	TH110 Upgrade	Upgrade equipment with TH110 sensors, to monitor connection temperature
	CL110 Upgrade	Upgrade equipment and substation with CL110 sensors, to monitor humidity and temperature

	Digital protection and control relay upgrade	Install communication extension to the protection relay (example MVCB : ACE850 , LVCB : IFE, Transfo : NT935 or NT210K)
	Digital architecture / box installation	Install SMD or another digital box to collect and centralize information
STEP 3	Protection relay configuration	Configure equipment IP address and double check communication status
	Digital architecture configuration	<ul style="list-style-type: none"> <li>• Configure SMD, and data collector</li> <li>• Double check communication</li> </ul>

## 4. Assumptions & exclusion

### 4.1 Assumptions

The Asset Connect has the following requirements

- All services performed on customer's site by Schneider Electric Field Services, including preliminary inspection visits, will be executed during the Schneider Electric business hours unless otherwise requested by the customer. These hours are Monday through Friday from 8am to 5pm weekly, local time, unless otherwise specified. Please contact your certified Schneider Electric Sales Representative for additional details.
- Additional on-site labor will be charged at standard Schneider Electric rates.
- All services are performed on-site by certified Schneider Electric service engineer.
- Geographical restrictions may apply. Please verify the service coverage and response time for your location with your Schneider Electric sales representative.
- In case of a conflict between the service definitions contained in this Statement of Work and the local service definitions, the local service definitions will prevail. For more information, please refer to your Sales Representative.
- All our commissioning activities stop at the outgoing switchboard terminals.
- Adequate provision for alternative power supplies, during the downtime, should be made by the customer or a customer's contractor. Potential time of shutdown can be estimated following an on-site visit and assessment.
- The designated working areas are to be cleared by the customer, prior to Schneider Electric's presence at customer's site.
- Protection and control relay are initially not connected OR connected using Modbus TCP.

In the event that an in-depth survey is recommended in this quotation and we are unable to perform such survey, or are limited in the scope of the survey, due to restrictions or other constraints imposed to Schneider Electric by the customer or any third-party under the control or acting on behalf of the customer, Schneider Electric will not accept any liability for delays or

additional expenses resulting for the customer or such third-party from non-completion of this survey or an uncomplete survey.

## 4.2 Exclusions

The following items are outside the scope of this standard service offering. They can be integrated into a customized Statement of Work (SOW) at request of the customer. Please refer to your local Schneider Electric Services Sales Representative or reseller.

- On-site emergency intervention
- We have made no provision to liaise with the local electricity supply authority.
- To wire Modbus Ethernet in each room and install switch if not installed
- To wire power supply to the receiver/communication "box"
- Connection to internet/cloud
- Rent equipment specific machine to access to high hanging equipment
- We request that relevant power supply is made available adjacent to the working area to facilitate our installation & commissioning works, we have made no allowance to provide a generator for site power.
- All permits (if applicable) to authorize Schneider Electric to perform installation & commissioning works and the tests are to be issued/obtained by customers and / or its contractors.
- Any delays or loss of time caused by customers and / or its contractors may be charged by Schneider Electric.

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