

**Addendum - I for technical specification for  
Substation Automation System and SAS Equipments (GETCO/ E / TS – SAS & SAS  
Equipments 3702/ R7 September 2022)**

For technical specifications of Substation Automation System and SAS Equipments (**GETCO/ E / TS – SAS & SAS Equipments 3702/ R7 September 2022**) technical requirements shall be considered as follow.

SN	Clause no.	Description	Changes to be considered
1	4.1, 4.1.1(a)	<b>BCU Communication compatibility:</b>  IEC-61850 protocols.	To consider:  IEC-61850 <b><u>Edition 2</u></b> protocols.
2	4.1, 4.1.1(b)	<b>BCPU Communication compatibility:</b>  IEC-61850 protocols.	To consider:  IEC-61850 <b><u>Edition 2</u></b> protocols.
3	4.1, 4.1.1(c)	<b>BCU Communication compatibility:</b>  IEC-61850 protocols.	To consider:  IEC-61850 <b><u>Edition 2</u></b> protocols.
4	4.1, 4.1.1(d)	<b>BCU Communication compatibility:</b>  IEC-61850 protocols.	To consider:  IEC-61850 <b><u>Edition 2</u></b> protocols.
5	4.1, 4.1.3(a)	<b>BCU Communication compatibility:</b>  IEC-61850 protocols.	To consider:  IEC-61850 <b><u>Edition 2</u></b> protocols.
6	4.1, 4.1.3(b)	<b>BCPU Communication compatibility:</b>  IEC-61850 protocols.	To consider:  IEC-61850 <b><u>Edition 2</u></b> protocols.
7	4.1, 4.1.3(c)	<b>BCU Communication compatibility:</b>  IEC-61850 protocols.	To consider:  IEC-61850 <b><u>Edition 2</u></b> protocols.
8	4.1, 4.1.3(l)	<b>Ethernet switch communication protocol compatibility:</b>  IEC 61850	To consider:  IEC 61850 <b><u>Edition 2 as well as Cyber security as per NERC CIP/IEC 52351 / IEEE 1686/ IEC 62443 standards</u></b>

9	4.1, 4.1.3(o)	<b>Gateway communication protocol</b>  IEC 61850	To consider:  IEC 61850 <b><u>Edition 2</u></b>
10	4.1, 4.1.3(p)	<b>Gateway communication protocol</b>  IEC 61850	To consider:  IEC 61850 <b><u>Edition 2</u></b>
11	4.2, 4.2.1(a)	<b>Interoperability compatibility with third party IED:</b>  IEC 61850	To consider:  IEC 61850 <b><u>Edition 2 as well as Cyber security as per NERC CIP/IEC 52351 / IEEE 1686/ IEC 62443 standards</u></b>
12	4.2, 4.2.2 (a to s)	<b>System architecture communication compatibility</b>  IEC 61850 protocol	To consider:  IEC 61850 <b><u>Edition 2 as well as Cyber security as per NERC CIP/IEC 52351 / IEEE 1686/ IEC 62443 standards</u></b>
13	<b><u>4.5</u></b>	<b>Gateway communication protocol</b>  IEC 61850	To consider:  IEC 61850 <b><u>Edition 2</u></b>
14	<b><u>4.5, 4.5.3</u></b>	<b>System communication protocol</b>  IEC 61850	To consider:  IEC 61850 <b><u>Edition 2</u></b>
15	<b><u>4.6,4.6.2(b)</u></b>	<b>BCU Protocol capabilities</b>  IEC 61850	To consider:  IEC 61850 <b><u>Edition 2</u></b>
16	<b><u>4.7,4.7.1.4</u></b>	<b>SCL Engineering software protocol capabilities</b>  IEC 61850	To consider:  IEC 61850 <b><u>Edition 2</u></b>
17	5.1, 5.2 & 5.2 (k)	<b>Type test</b>  IEC 61850	To consider:  a. IEC 61850 <b><u>Edition 2</u></b> b. <b><u>Cyber security NERC CIP/IEC 52351 / IEEE 1686/ IEC 62443</u></b>

18.	20.0 (7) & (8)	<p>Substation automation network</p> <p>1. The redundant managed bus shall be realized by 100 Mbps optical star redundant ring network using industrial grade components and shall be as per IEC 61850.</p> <p>2. Inside the sub-station, all <b><u>communication</u></b> shall be realized as per IEC 61850 protocol.</p>	<p>To consider:</p> <p>The redundant managed bus shall be realized by 100 Mbps optical star redundant ring network using industrial grade components and shall be as per IEC 61850 <b><u>Edition 2 as well as Cyber security as per NERC CIP/IEC 52351 / IEEE 1686/IEC 62443 standards.</u></b></p> <p>Inside the sub-station, all communication shall be realized as per IEC 61850 protocol <b><u>Edition 2 as well as Cyber security as per NERC CIP/IEC 52351 / IEEE 1686/IEC 62443 standards.</u></b></p>
19	Annexure-III Sr. No. 1	<p><b>BCU Protocol capabilities</b></p> <p>IEC 61850</p>	<p>To consider:</p> <p>IEC 61850 <b><u>Edition 2</u></b></p>