

**Addendum - I for technical specification for
Substation Automation System and SAS Equipments (GETCO/ E / TS – SAS & SAS
Equipments 3702/ R9 January 2025)**

For technical specifications of Substation Automation System and SAS Equipments (GETCO/ E / TS – SAS & SAS Equipments 3702/ R9 January 2025 technical requirements shall be considered as follow.

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

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

18.	20.0 (7) & (8)	<p>Substation automation network</p> <ol style="list-style-type: none"> 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. 2. Inside the sub-station, all communication shall be realized as per IEC 61850 protocol. 	<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 <u>Edition 2 as well as Cyber security as per NERC CIP/IEC 52351 / IEEE 1686/ IEC 62443 standards.</u></p> <p>Inside the sub-station, all communication shall be realized as per IEC 61850 protocol <u>Edition 2 as well as Cyber security as per NERC CIP/IEC 52351 / IEEE 1686/ IEC 62443 standards.</u></p>
19	Annexure-III Sr. No. 1	<p>BCU Protocol capabilities</p> <p>IEC 61850</p>	<p>To consider:</p> <p>IEC 61850 <u>Edition 2</u></p>