STCP 04-3 Issue 008 Real Time Data Provision

STC Procedure Document Authorisation

Party	Name of Party Representative	Signature	Date
The Company			
National Grid Electricity Transmission plc			
SP Transmission plc			
Scottish Hydro Electric Transmission plc			
Offshore Transmission Owners			

STC Procedure Change Control History

Issue 001	23/12/2004	BETTA Go-Live Version
Issue 002	20/04/2005	Issue 002 incorporating STCPAP002
Issue 003	25/10/2005	Issue 003 incorporating PA034 and PA037
Issue 004	24/06/2009	Issue 004 incorporating changes for Offshore Transmission
Issue 005	23/02/2016	Issue 005 incorporating PM085
Issue 006	01/04/2019	Issue 006 Incorporating National Grid Legal Separation Changes
Issue 007	1/08/2019	STCP Modifications as a result of CM070 'Consequential STC updates post RFG and HDVC implementation'
Issue 008	25/04/2023	Issue 008 incorporating use of 'The Company' definition as made in the STC PM0130

1 Introduction

1.1 Scope

1.1.1 The provision of operationally significant alarms, indications and analogue data is essential for the effective and secure operation of the Transmission System. This document details the real time data that shall be provided by the TO (including User real time data) via the Datalink or other system as agreed between the TO and The Company.

1.1.2 This procedure applies to The Company, as defined in the STC and meaning the licence holder with system operator responsibilities, and TOs, for the provision of specified alarms, analogues and indications, in real time via the Datalink or other system as agreed between the TO and The Company.

1.1.3 For the purposes of this document, TOs are:

- NGET;
- SPT;
- SHET; and
- All Offshore Transmission Licence holders as appointed by OFGEM

In the event that specific conditions or exceptions are made in the document relating to an Onshore TO or Offshore TO these will be prefixed appropriately

1.1.4 The obligations on The Company and TOs on the receipt of alarms are specified in STCP 2.1 (Alarm and Event Management), and are outside the scope of this document.

1.1.5 Management of the Datalink is detailed in STCP 4-2 (Real Time Datalink Management) and is outside the scope of this document.

1.1.6 STCP 4-1 (Real Time Data Change Management), sets out the change management process and is related to, but outside the scope of, this document.

1.2 Objectives

1.2.1 The process specifies the responsibilities of The Company and TOs for the provision of real time data, including:

- generic alarms (specified in Appendix B1);
- other specified alarms that are operationally significant;
- alarms from new types of equipment that are operationally significant;
- digital status indications (specified in Appendix B2);
- analogue data (specified in Appendix B3); and
- real time data related to Users' Systems (specified in Appendix B4).

2 Key Definitions

2.1 For the purposes of STCP04-3:

2.1.1 None

3 Procedure

3.1 Alarms

3.1.1 The TO shall provide to The Company, where available, operationally significant alarms associated with the Transmission System. These are outlined in the generic table in Appendix B1.

3.1.2 The TO shall provide any unique alarms associated with the Transmission System, that do not fall within the generic tables in Appendix B1, but which are agreed with The Company to be operationally significant. The schedules in Appendix B shall be updated to reflect the agreed TO/The Company provision of new generic types of alarms, or reflect changes triggered by STCP 19-2.

3.1.3 The TO and The Company shall agree to the provision of operationally significant alarms from new types of Plant and/or Apparatus associated with the GB Transmission System.

3.1.4 The TO shall inform other relevant Parties where planned work may interrupt real time alarm data, or result in the generation of spurious alarms or indications. Where agreed with The Company, the TO shall, in accordance with local procedures, suppress or inhibit the transmission of alarms from Plant and/or Apparatus removed from operational service since this could lead to excessive alarm information being sent to The Company. Any such suppression or inhibition shall be removed prior to the equipment being returned to service, unless otherwise agreed with The Company.

3.1.5 The Company shall procure that the User provides alarms from User equipment:

- as required by The Company pursuant to the Grid Code;
- as reasonably required by The Company; and
- as reasonably required by the TO.

These alarms shall be documented in the Connection Site Specification between The Company and the TO. The TO shall then collect and forward these alarms to The Company.

3.1.6 The Company shall agree with Users, the provision of real time data from User's equipment and that it shall be collected by the TO on behalf of The Company. The data to be collected shall be (i) that required pursuant to the provisions of Grid Code, (ii) that reasonably required by The Company, and (iii) that reasonably required by the TO. All the data to be collected shall be documented in a schedule between The Company and the TO. The TO shall have access to the documented data.

3.1.7 Where the User's site is not a TO Connection Site, agreement shall be reached between The Company and the TO, as to the most appropriate and cost effective method of collecting the required User SCADA alarm data. At TO connection sites, the TO shall collect and forward required User SCADA alarm data to The Company.

3.2 Indications

3.2.1 The TO shall provide, where available, the telemetered digital status indications (including time tags where available), for equipment listed in Appendix B2. Where this cannot be reasonably achieved, The Company and the TO shall agree an appropriate solution.

3.2.2 Where status indications are not telemetered from site, or where the telemetered information is incorrect, the TO shall liaise with The Company and follow internal procedures for hand dressing actions on their SCADA system. These actions shall be reflected to The Company, via the Datalink or other system agreed between the TO and The Company and shall appear as telemetered indications on The Company SCADA system.

3.2.3 The TO shall inform The Company before agreeing to any work that may interrupt real time indication status data, or result in the generation of spurious indications. Where appropriate, the TO shall, in accordance with local procedures, suppress or inhibit the transmission of indications from out of service transmission equipment, where this could lead to inaccurate representation of system conditions or excessive transmission of status information to The Company. Any such actions shall be removed, except otherwise agreed, prior to the equipment being returned to service.

3.2.4 The Company shall procure that the User provides telemetered digital indications

- as required by The Company pursuant to the Grid Code (see appendix B4.2);
- as reasonably required by The Company; and
- as reasonably required by the TO.

These telemetered digital indications shall be documented in a Connection Site Specification between The Company and the TO. The TO shall then collect and forward these indications to The Company.

3.2.5 Where telemetered indications from User equipment are not provided or are incorrect, the TO shall liaise with The Company and follow internal procedures for hand-dressing actions on their SCADA system. These actions shall be reflected to The Company via the Datalink or other system agreed between the TO and The Company and shall appear as telemetered indications on The Company SCADA.

3.2.6 Where the User's site is not a TO Connection Site, agreement shall be reached between NGESO and the TO, as to the most appropriate and cost effective method of collecting the required User SCADA indication data. At TO connection sites, the TO shall collect and forward required User SCADA indication data to The Company.

3.3 Analogues

3.3.1 The TO shall provide where available, real time analogue data, as defined in Appendix B3, from each transmission site. Where this cannot reasonably be achieved, The Company and the TO shall agree an appropriate solution.

3.3.2 The TO shall inform The Company when analogue values are incorrect or manually over-ridden for any reason, the TO shall adopt procedures for hand dressing actions on their SCADA system. These actions shall be reflected to The Company via the Datalink or other system agreed between the TO and The Company and shall appear as telemetered indications on The Company SCADA. Any such actions shall be removed once the analogue is returned to normal.

3.3.3 The TO will inform The Company before agreeing to any work that may interrupt real time analogue data or result in the generation of spurious analogue data. Where appropriate the TO will, in accordance with local procedures, suppress or inhibit the transmission of analogue data from out of service Plant and Apparatus, where this could lead to inaccurate representation of system conditions or excessive transmission of status information to The Company. Any such actions shall be removed, except otherwise agreed, prior to the Plant and Apparatus being returned to service.

3.3.4 The Company shall procure that the User provides analogue data from the User's system

- as required by The Company pursuant to the Grid Code (see appendix B4.1);
- as reasonably required by The Company; and
- as reasonably required by the TO.

This analogue data shall be documented in a Connection Site Specification between The Company and the TO. The TO shall then collect and forward this analogue data to The Company.

3.3.5 Where the User's site is not a TO Connection Site, agreement shall be reached between The Company and the TO, as to the most appropriate and cost effective method of collecting the required User SCADA analogue data. At TO connection sites, the TO shall collect and forward required User SCADA analogue data to The Company.

3.4 TO Data Acquisition

3.4.1 At TO sites that connect with another TO's site, provision shall be made for the relevant TO to install, repair, maintain or replace appropriate data transmission equipment or related equipment, for the purpose of relaying agreed Plant status indications and analogue data associated with the connecting transmission circuits to the relevant TO.

3.4.2 At TO sites that connect with another TO's site, access to the relevant TO data transmission equipment or related equipment described in 3.4.1 shall be granted by TO as appropriate between the relevant TO's. Any proposal to install or relocate such equipment shall be discussed and agreed by the two parties.

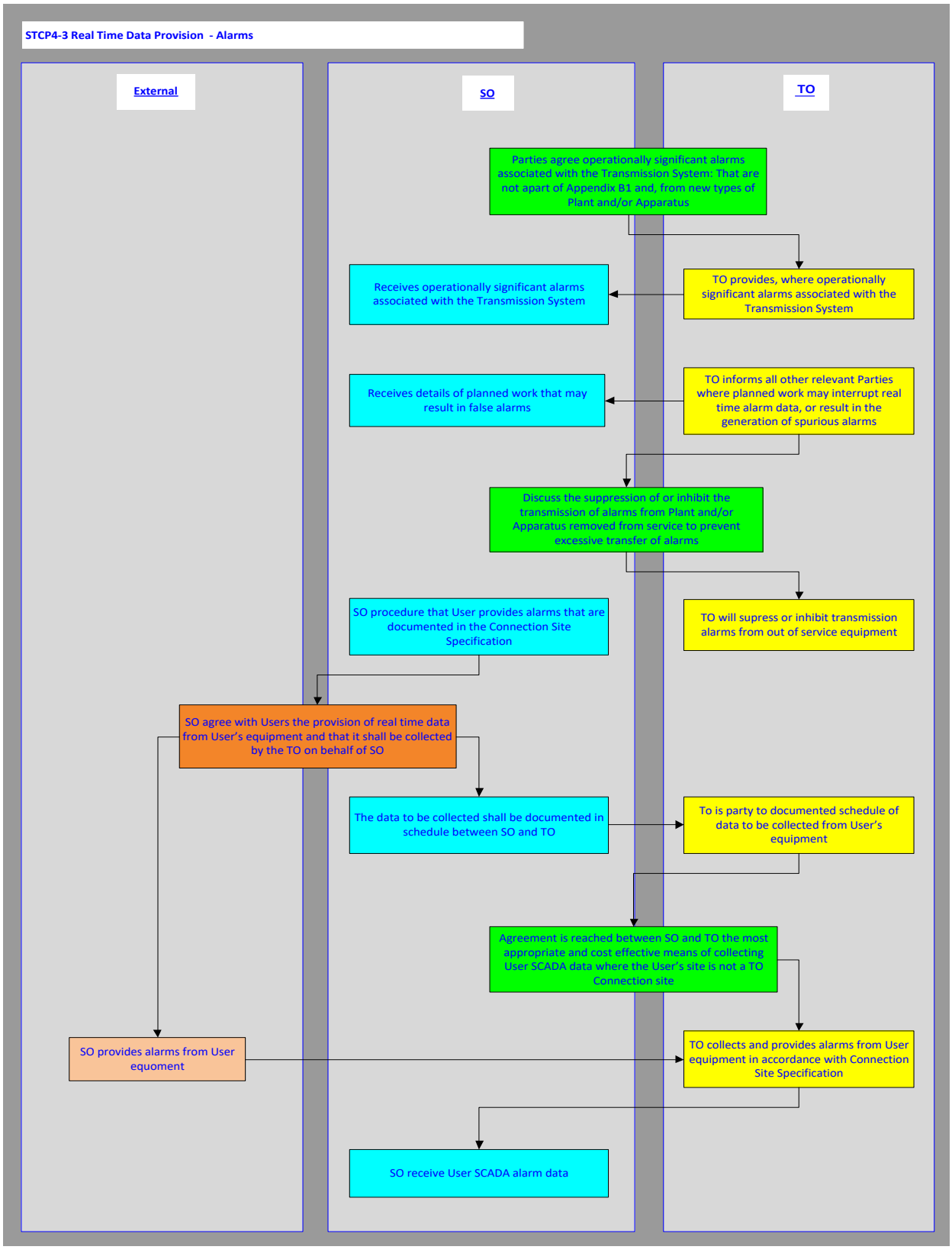
3.4.3 User SCADA data shall not be transmitted between TOs without the approval of the User and The Company.

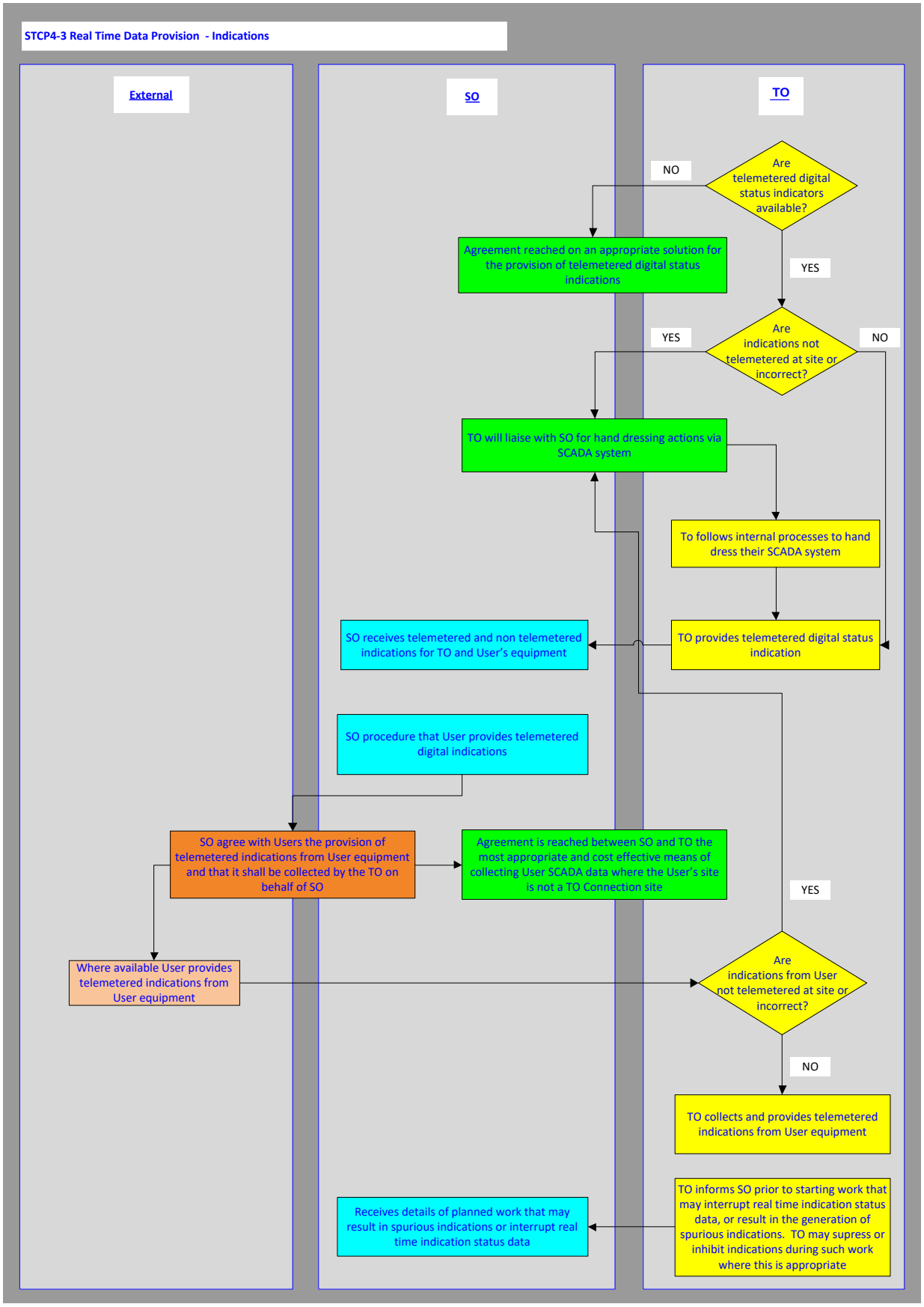
3.4.4 Each TO shall provide to the other TO real time data, as specified in Schedule 3 of the STC, with respect to specific inter TO circuits and other circuits or equipment, where the TO can reasonably demonstrate that such data is required to discharge its TO obligations. Where User data is required this shall be requested from The Company.

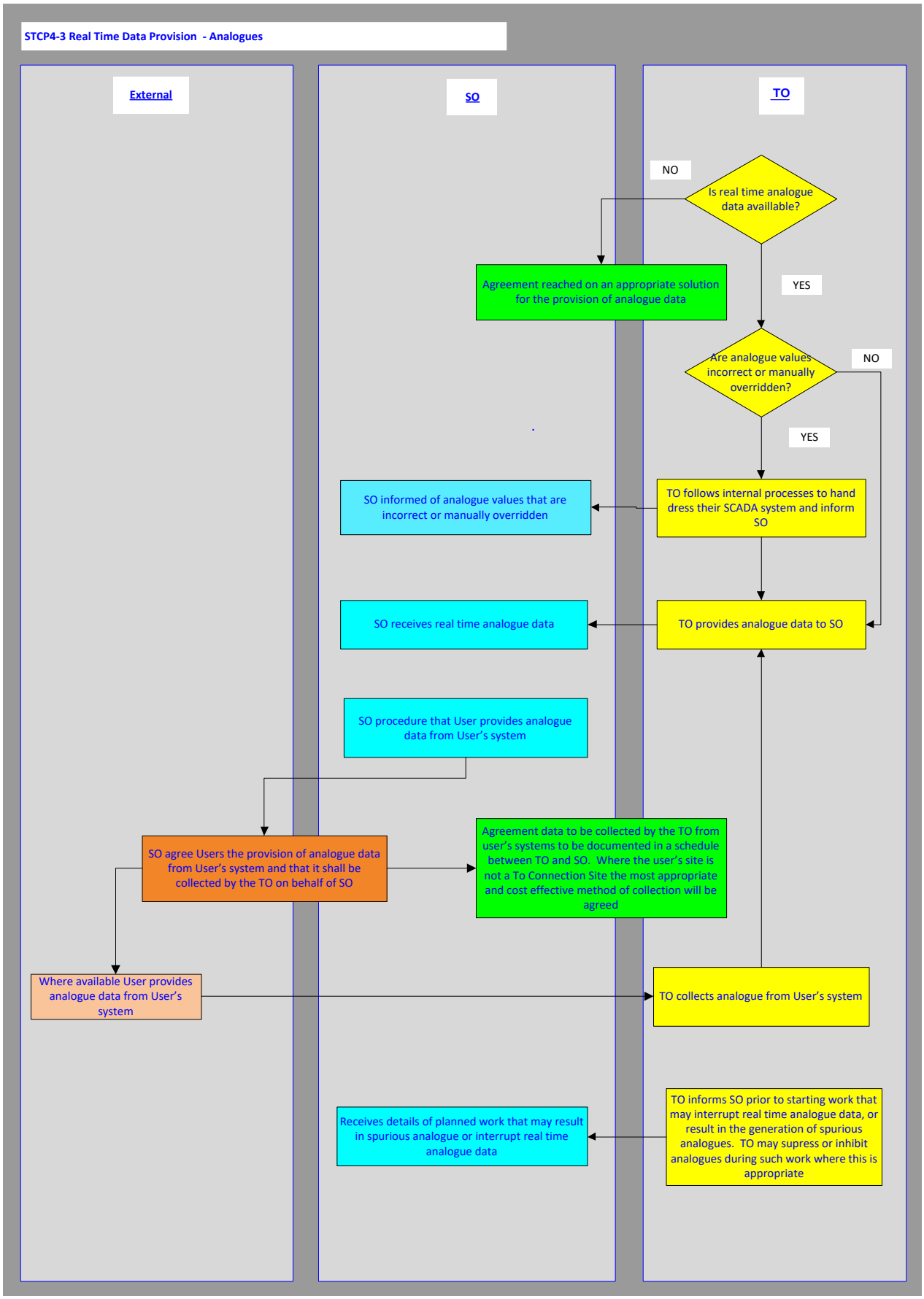
3.4.5 The Company shall procure for the purposes of 3.4.4 above any required data from a User or Users, and shall agree the provision of such data.

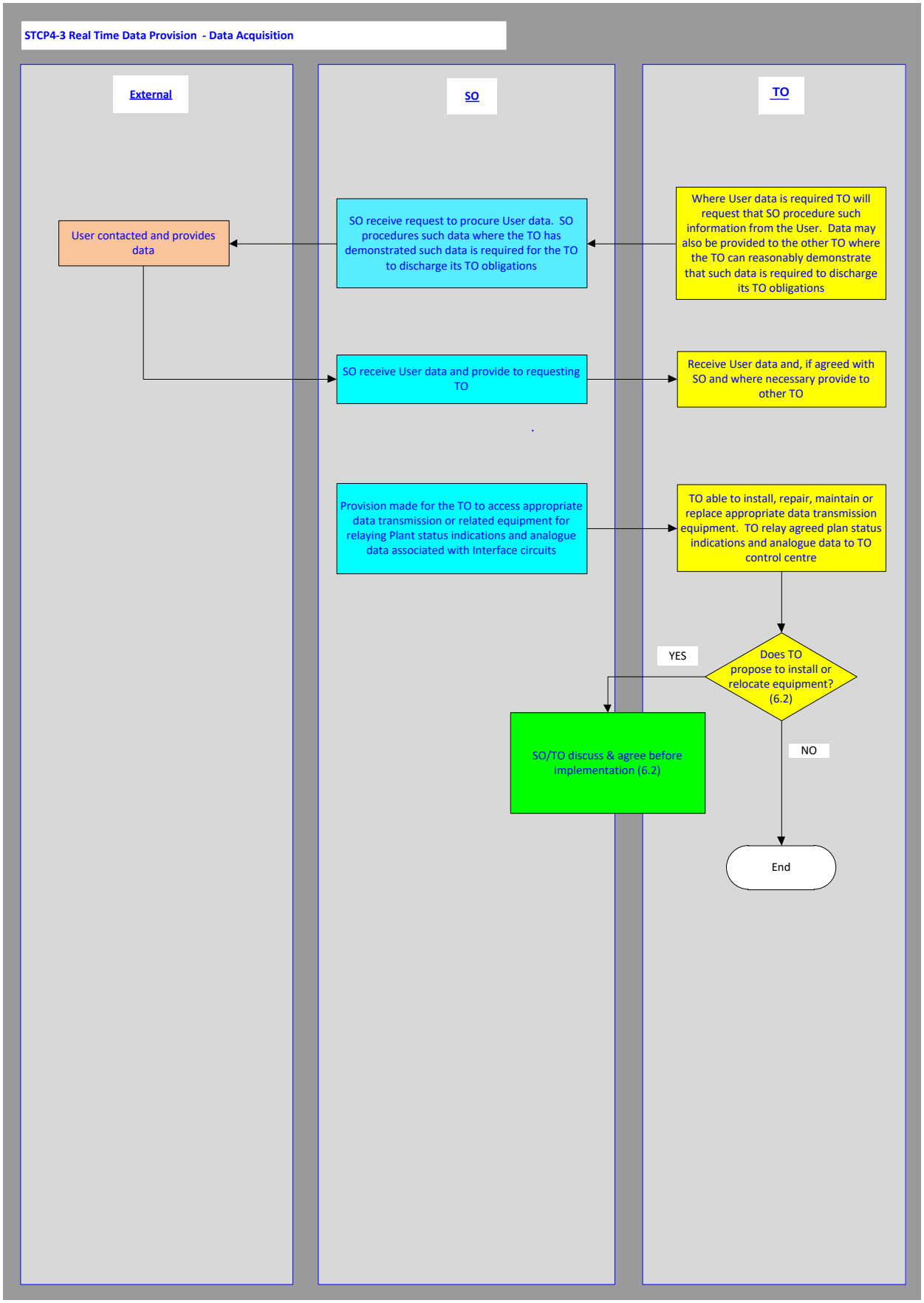
Appendix A - Flow Diagram

Note that the Process Diagrams shown in this Appendix A are for information only. In the event of any contradiction between the process represented in this Appendix and the process described elsewhere in this STCP, then the text elsewhere in this STCP shall prevail.




STCP4-3 Real Time Data Provision - Indications
External
SO
TO
Are telemetered digital status indicators available?
NO
YES
Agreement reached on an appropriate solution for the provision of telemetered digital status indications
Are indications not telemetered at site or incorrect?
YES
NO
TO will liaise with SO for hand dressing actions via SCADA system
To follows internal processes to hand dress their SCADA system
TO provides telemetered digital status indication
SO receives telemetered and non telemetered indications for TO and User's equipment
SO procedure that User provides telemetered digital indications
SO agree with Users the provision of telemetered indications from User equipment and that it shall be collected by the TO on behalf of SO
Agreement is reached between SO and TO the most appropriate and cost effective means of collecting User SCADA data where the User's site is not a TO Connection site
YES
Where available User provides telemetered indications from User equipment
Are indications from User not telemetered at site or incorrect?
NO
TO collects and provides telemetered indications from User equipment
TO informs SO prior to starting work that may interrupt real time indication status data, or result in the generation of spurious indications. TO may supress or inhibit indications during such work where this is appropriate
Receives details of planned work that may result in spurious indications or interrupt real time indication status data


STCP4-3 Real Time Data Provision - Analogues
External
SO
TO
NO
Is real time analogue data availlable?
Agreement reached on an appropriate solution for the provision of analogue data
YES
Are analogue values incorrect or manually overridden?
NO
YES
SO informed of analogue values that are incorrect or manually overridden
TO follows internal processes to hand dress their SCADA system and inform SO
SO receives real time analogue data
TO provides analogue data to SO
SO procedure that User provides analogue data from User's system
SO agree Users the provision of analogue data from User's system and that it shall be collected by the TO on behalf of SO
Agreement data to be collected by the TO from user's systems to be documented in a schedule between TO and SO. Where the user's site is not a To Connection Site the most appropriate and cost effective method of collection will be agreed
Where available User provides analogue data from User's system
TO collects analogue from User's system
Receives details of planned work that may result in spurious analogue or interrupt real time analogue data
TO informs SO prior to starting work that may interrupt real time analogue data, or result in the generation of spurious analogues. TO may supress or inhibit analogues during such work where this is appropriate


STCP4-3 Real Time Data Provision - Data Acquisition
External
SO
TO
User contacted and provides data
SO receive request to procure User data. SO procedures such data where the TO has demonstrated such data is required for the TO to discharge its TO obligations
Where User data is required TO will request that SO procedure such information from the User. Data may also be provided to the other TO where the TO can reasonably demonstrate that such data is required to discharge its TO obligations
SO receive User data and provide to requesting TO
Receive User data and, if agreed with SO and where necessary provide to other TO
Provision made for the TO to access appropriate data transmission or related equipment for relaying Plant status indications and analogue data associated with Interface circuits
TO able to install, repair, maintain or replace appropriate data transmission equipment. TO relay agreed plan status indications and analogue data to TO control centre
Does TO propose to install or relocate equipment? (6.2)
YES
NO
SO/TO discuss & agree before implementation (6.2)
End

Appendix B: Standard Forms/Certificates

B1 Generic Alarm Requirement

	Protection and Sequence Alarms ***Class 1***	***Condition Alarms*** ***Class 2***
	Transformer Protection Operated Alarms	*Transformer Protection / Cooling Faulty Alarms*
	Quad Booster Protection Operated Alarms	*Quad Booster Protection/ Cooling Faulty Alarms*
	Reactive Compensation Protection Operated Alarms	*Reactor Protection/ Cooling Faulty Alarms*
	Trip Relay Operated Alarms	*Trip circuit Faulty Alarms*
	Circuit Main Protection Operated	*Circuit Main Protection Faulty Alarms*
	Circuit Back up Protection Operated	*Circuit breaker Operating / Insulating medium pressure Alarms*
	Inter trip Receive Alarms	*Inter trip Faulty Alarms*
		Protection Signalling Faulty Alarms
	DAR Sequence / In Progress/ Operated/ *Reset/ Incomplete / Locked out Alarms*	*DAR Scheme Faulty Alarms*
	Mesh Corner Protection Operated Alarms	*Mesh Corner Protection Faulty Alarms*
	Busbar Protection Operated Alarms	*Busbar Protection Faulty Alarms* *Busbar Gas pressure Alarms*
	Cable Protection Operated Alarms	*Cable Pressure Alarms*
	Circuit Breaker Fail / Interlocked Over current Operated Alarms	*Circuit Breaker Fail / Interlocked Over current Faulty Alarms*
		Circuit Breaker / Switch Disconnector Trip and Close lockout Alarms

B2 Digital Status Indications Requirement

	Plant/ Apparatus /Equipment	***Status Indication***
	Circuit Breaker	*Open / Closed / DBI*
	Isolator	*Open / Closed / DBI*
	Switch disconnector / Isolator	*Open / Closed / DBI*
	Protection Equipment	*In / Out*
	DAR Equipment/ schemes	*In / Out*
	Auto Switching Schemes	*In/ Out and Selections*
	Demand/System/Generator tripping schemes	*In / Out and Selections*
	Fault thrower / ferro-resonance earth switch	*Open / Closed (where available)*
	Blocking	*In / Out*
	Ferro-resonance scheme	*In/ Out*
	Zone 2 over ride	*In / Out*
	Zone 1 extension	*In / Out*
	Acceleration	*In / Out*

B3 Analogue Data Requirement

Plant / Apparatus / Equipment	***Analogue Data***
Feeder	*MW / MVAr / Volts / Amps* from each end*
Transformer	*Low Voltage MW / MVAr / Amps* Volts:* *Winding temp / Tap position / MVAr from tertiary winding where compensation is fitted* *On both LV windings where applicable*
Quad Booster	*MW / MVAr / Volts / Amps* Winding temp / Tap position*
Bus Section / Coupler CB	*Amps*
Shunt / Series Reactor	*Mw / MVAr / Winding Temp*
Reactive compensation	*MVAr*
General Site	*Frequency / Transmission Voltage / User Interface Voltage*
Cables	*Dynamic thermal rating in MVA*
Interface Point (Embedded Transmission Only)	*MW and MVAr from High Accuracy Settlement Meters*

** AMPS required if no other analogue readings are available*

B4 User's Data Requirements (Grid Code CC.6.5.6 and ECC.6.5.6)

B4.1 Analogues / Metering

Item	Analogue Data
Power Stations	_
Balancing Mechanism Unit	HV MW MVAr Frequency
Individual Alternator	HV MW MVAr
Interface with Transmission System	Voltage
Individual Unit Transformer	HV MW MVAr
Site TGO	HV MW MVAr
Power Available	MW
Other Users	
At Interface with Transmission System	MW MVAR Voltage

B4.2 Digital Status Indications

Item	Digital Status Indication
Power Stations	
All Generator circuits	LV and HV circuit breakers and disconnectors.
Unit Transformer	Circuit breaker
Each Generator Transformer	Tap Position Indicator
Other Users	
At Interface with Transmission System	Circuit Breakers and Disconnectors

Appendix C: Abbreviations & Definitions

Abbreviations

SHET	Scottish Hydro Electric Transmission plc
SPT	SP Transmission plc
TO	Transmission Owner

Definitions

STC definitions used:
Apparatus
Connection Site
The Company
NGET

Plant
Transmission System
User

Definition used from other STCPs:
Datalink: STCP04-2: Real Time Data Management
Class 1 Alarm: STCP02-1: Alarm and Event Management
Class 2 Alarm: STCP02-1: Alarm and event Management