



**Greenfield Automation Budgetary Bid R**

Customer

800xA/S+ (DCS,SIS,PPM,OTS)

Customer reference: Customer RFQ/Tender reference number

ABB proposal reference:

Global Template

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may be different than that shown herein) schedule, scope of

work and terms.



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**1 Important Notice**

**1.1 Budgetary Disclaimer**

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**1.2 Confidentiality**

This document contains information about one or more ABB products and may include a description of or a reference to one or more standards that may be generally relevant to the ABB products. The presence of any such description of a standard or reference to a standard is not a representation that all the ABB products referenced in this document support all the features of the described or referenced standard. This document and parts thereof must not be reproduced or copied without written permission from ABB, and the contents thereof must not be imparted to a third party nor used for any unauthorized purpose.

**1.3 Integrity**

ABB is committed to a high standard of integrity which is expected of every employee and in every country where we do business. With hard work and a clear commitment from ABB's top management at headquarters and across our regions and divisions, ABB has seen the positive impact that a robust compliance and integrity program and a strong culture of integrity can have on the long-term success and sustainability of our company. Integrity is a top priority at ABB.

**1.4 Contact Details**

**Sales Contact Proposal Contact**

Name: ABB Contact 1

Title: Designation Contact 1   
Phone: (Manual Entry)

Name: ABB Contact 2

Title: Designation Contact 2   
Phone: (Manual Entry)

Cell: Mobile Contact 2

Email: Email Contact 2

Cell: Mobile Number Contact 1   
Email: Email Contact 1

**1.5 Revision History**

**Prepared by Reviewed by Date Rev. No. Remarks** (Manual Entry) ABB Contact 2 [DD.MM.YY](http://DD.MM.YY) 0 Initial Proposal

Release

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**2 Technical Description**

**2.1 Overview of the Proposed Solution**

[Scope]

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**2.2 Basis of Offer**

Process plant is subdivided into groups and further in subgroups respectively as per the production process provided in the RFQ.800xA/Symphony plus system is distributed in the following process locations.

**Table 2.1 Process Locations**

**800xA system offered as per below process area** CCR - Central Control Room

LER - Local Equipment Room

RIE Room- Remote Instrument Equipment Room

Process areas in Field

Process Areas

**2.2.1 Reference Documents**

This ABB proposal is based on our best interpretation of the following documents enclosed with RFQ received via email dated DD/MM/YYYY.

**Table 2.2 Reference Document List**

**Sr.** **No.**

**Doc.No. Doc. Name Doc. Rev.**

**No.**

**Doc. Rev.** **Date**

**Received** **Date**

1

2

3

4

5

6

7 TQ and Clarification

Summary(3.6 TQ and Bid Clarifications List)

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**2.2.2 System Design and Key Features(800xA)**

The proposed ICSS System configuration is based oncustomer-provided documents. Any assumptions and/or deviations have been listed therein, subject to changes based on further discussion/clarification/information.

ABB proposed an **800xA system** for ICSS. Refer to [800xahardwareselector.com](https://800xahardwareselector.com/)for more details on the 800xA system hardware used for BPCS, PPM, SIS, PSD,BMS & FGS applications.

**Table 2.3 System Configuration**

**Sr.** **No.**

**Description ABB’s offering**

1 System [system]

2 Controllers [controllers]   
3 Distributed I/O type Conventional S800 I/O for ICSS

Ethernet Select I/O for ICSS (individually configurable)

4 Engineering Station Control builder M

5 Application Library Standard - SIS/ FGS

PPM Library -PPM   
PC Device - PCS

6 HMI ABB AbilityTM System 800xA

7 Historian 800xA History

8 ICSS Third party Integration with [Third]

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**Sr.** **No.**

**Description ABB’s offering**

9 Redundant /Non-Redundant Network [redundant]

10 Redundant Servers [servers]

11 Non-Redundant Servers [non-redundant]

**Table 2.4 System Sizing**

**Sr.** **No**

**Description ABB’s offering**

1 Installed I/O Spares included [spare] spare considered

2 Spare Space in Indoor Cabinets [space] spare space considered

3 Spare space in SJB (RIO) Based on Customer Field JB req.

4 Intrinsic safe signals [safe]

5 HART pass through I/O modules [HART]

6 Galvanic Isolated Signals included Yes

7 Line Monitoring Included Yes (Field line monitoring resistors

are excluded)   
8 SOE (Sequence of Events) Included

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9 Indicative cabinet alarms Common signal

1. Fan failure / MCB tripped   
2. Power Supply failure   
3. Temperature high

10 Interposing relays for Non SIL application [Non]

11 Interposing relays for SIL application [SIL]

12 Redundancy considered for [re]

**Table 2.5 PPM Sytem Functions**

**Sr.** **No.**

**Description ABB’s offering**

1 **Load Shedding based on**

− Load shedding based on fast network

determination and energy balance (loss of generation)

− Load shedding based on under frequency (under frequency relay

installed in switchgear)

**Remark: Load Shedding restricted to** XXX

**MW only for this proposal**

2 **Load/Power Sharing**

− Load Sharing X units of main generators

3 **Generator Control & Monitoring**   
− Generator Control & monitoring for X

units of main generators

4 **Synchronization**

− Only Sync Initiate command to initiate

synchronization

5 **Electrical Monitoring functions:**

− Real time monitoring and control for XXX

kV, XXX kV,XXX kV,XXX V & XXX V Switchgear Incomer, Bus Tie, Outgoing Power/Motor Feeders /Transformer feeders/VFD

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Included

Included

Included

Included

Included

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− Real time monitoring of distribution

board, UPS, Battery Charger,HVAC   
6 **Online Tap Changer**

− Simple/Master follower philosophy



Included

7 **Motor Restart and Reacceleration** Included

**2.2.3 System Topology**

|  |
| --- |
| [image] |

**2.2.4 IO Summary**

[table]

|  |
| --- |
| [table] |

**2.2.5 3rd Party Interface**

**Table 2.11 Soft I/O Summary**

**Name of the** **communication** **Partner/PLC**

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**Protocol Redundant**

**(Yes/No)**

MODBUS Serial MODBUS TCP/IP PROFINET PROFIBUS PA PROFIBUS DP IEC61850(MMS) IEC61850 (GOOSE)

IEC104   
Classic OPC   
OPC UA   
**Total**

**Signal Qty Read**

**Signal** **Qty**

**Write** **Signal** **Qty**

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**2.2.6 Graphics**

**Table 2.12 Graphics**

**Control System (includes BPCS, SIS/FGS &** **PPM)**

Simple Process Graphics (Approximately- 30 Dynamic objects)

Medium Process Graphics (Approximately- 40 Dynamic objects)

Complex Process Graphics (Approximately- 50 to 60 Dynamic objects)

High Complex Process Graphics (Approximately- 60 Dynamic objects)

Third party Tabular Graphics (Approximately- 100 Dynamic objects)

Sequence Graphics (Approximately- 10 Steps)



**Qty**

XX

XX

XX

XX

XX

XX

**Total Graphics** [graphics]

**2.2.7 Historian Sizing**

**Table 2.13 History**

**History Logs Qty**

Redundant/Non-Redundant History Logs [hist]

**2.2.8 Reports**

**Table 2.14 Reports**

**Reports Qty**

Simple reports (Status & Maintenance) [simp]

Complex reports (Production) [comp]

**2.2.9 Cabinets Summary**

**General Data for Indoor and Outdoor Cabinet**

− Field cable entry point: from the bottom of the cabinet

− Lamp and socket

− Thermostats

− Document holder

− External identification plate

− Removable lifting eyes

− Door micro switch

− Handles with key insert

− All cubicles will be provided with baseplate holes for fastening to the floor.(Baseplate is

not part of the offer.)

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**Specific Data for Indoor Cabinet**

− Standard Indoor Cabinets color: RAL 7035 inside/outside − 100 mm Plinth offered

**Specific Data for Remote Outdoor Cabinet**

− Standard Indoor Cabinets color: RAL 7035 inside/outside − 100 mm Plinth offered

− Canopy

**Specific Data for Remote Select I/O Outdoor Cabinet**

− ABB has offered ABB standard nVent (Hoffmann) /Equivalent SS316 L RIO Cabinet. − Remote IO cabinets are designed for wall or structural steel mounting and raised

above grade with cable entries in the bottom.

− ABB has not included sunshade protection for the Remote I/O Cabinets.

Refer Section 5.1 Cabinet Typical Drawings

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**Table 2.15 Cabinets**

**Cabinet Type Dimensions**

**(H x W x D) in mm**

**Location Hazardous Area**

**Classification**



**IP Class Door & Access**

BPCS Controller Cabinets 2000 x 800 x 800 Indoor Zone 2/Class 1 Div 2 IP 42 Double door/ Front &

Rear

BPCS Controller with I/O Marshalling   
Cabinets

2000 x 800 x 800 Indoor Zone 2/Class 1 Div 2 IP 42 Double door/ Front &

Rear

2000 x 800 x 800 Indoor Zone 2/Class 1 Div 2 IP 42 Double door/ Front &

BPCS I/O with Integrated Marshalling   
Cabinets

Rear

SIS Controller Cabinets 2000 x 800 x 800 Indoor Zone 2/Class 1 Div 2 IP 42 Double door/ Front &

Rear

SIS I/O with Integrated Marshalling   
Cabinets

2000 x 800 x 800 Indoor Zone 2/Class 1 Div 2 IP 42 Double door/ Front &

Rear

2000 x 800 x 800 Indoor Zone 2/Class 1 Div 2 IP 42 Double door/ Front &

SIS Controller with I/O Marshalling   
Cabinets

Rear

Select I/Os Wall Mounted 1200 x 1000 x 500 Outdoor Zone 2/Class 1 Div 2 IP 66 Single Door/Front

Select I/Os Floor Standing 2000 x 800 x 800 Outdoor Zone 2/Class 1 Div 2 IP 65 Double door/ Front &

Rear

Server Cabinets 2000 x 800 x 1000 Indoor Zone 2/Class 1 Div 2 IP 21 Double door/ Front &

Rear

Network Cabinets 2000 x 800 x 1000 Indoor Zone 2/Class 1 Div 2 IP 21 Double door/ Front &

Rear

Server/Network Cabinets 2000 x 800 x 1000 Indoor Zone 2/Class 1 Div 2 IP 21 Double door/ Front &

Rear

Power Distribution Cabinets 2000 x 800 x 800 Indoor Zone 2/Class 1 Div 2 IP 42 Double door/ Front &

Rear

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**2.2.10 Power and Heat Load Calculations**

**Table 2.16 Power and Heat Load Summary**

**Location Power Consumption Heat Dissipation**

**VAC Arms Watts Watts (BTU/Hour)** CCR 230 xxxx xxxx xxxx xxx

Admin Bldg 230 0 0 0 0

Admin Bldg 230 0 0 0 0

XXX 230 0 0 0 0

XXX 230 0 0 0 0

XXX 230 0 0 0 0

XXX 230 0 0 0 0

XXX 230 0 0 0 0

XXX 230 0 0 0 0

**2.2.11 Cyber Security (800xA)**

ABB has achieved ISASecure® System Security Assurance (SSA™) Level 1 certification for System 800xA version 6.1.1.x according to the IEC 62443 international Cyber Security standard. This covers core components typical of an industrial control system delivery including System 800xA Software and System 800xA Hardware. The SSA system level certification verifies that the overall System 800xA provides security functions and features as required by IEC 62443-3-3 Security Level 1. In addition, the System 800xA product organisation has achieved ISASecure® Security Development Lifecycle Assurance (SDLA) certification. This verifies that the Secure Product Development Process is in accordance with IEC 62443-4-1 requirements. System 800xA has also been thoroughly tested to ensure its robustness to withstand network attacks as required by the ISASecure® conformance certification program.

For Greenfield Automation Budgetary Bid Rev 0(Test) includes installation and configuration of Cyber Security features and capabilities in ABB Products Technologies in addition to features in validated third party products for:

Our approach will be concentrated on the following list of main activities:

− Antivirus software

− Patch Management

− Secure Default Settings & Hardening (Network / System / Application Hardening

(embedded))

− Access & Account Management and Authentication

− Backup and Restore facility

− Security Policy based on ABB 800xA security Policies   
− Network Segregation

− Detailed Topologies

− Security Solution

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**3 Scope of Work**

**3.1 Scope of Supply**

**3.1.1 Bill of Materials**

**3.1.2 Recommended Commissioning Spares**

**3.1.3 Recommended 2 Years Operational Spares**

**3.1.4 Major Sub-Suppliers - Proposed List**

**Sr. No. Description Vendor/ Equipment**

1 ABB Hardware Material ABB

2 ABB Software Material ABB

3 IT Hardware- Server/

Dell/ HP

Workstation/ Monitor

Hirschmann/ MOXA/Belden/Blackbox/ Westermo/Cisco

4 Network Components /

FOPP

5 Cabinets Rittal/ Hoffman/ Rose Mecano

6 Consoles CGM/Akida/Pyrotech/Poly-M

7 Printer Dell/HP/Xerox/Canon

8 Relays GMI/ MTL/ Phoenix Contact/P&F

9 Barriers GMI/Phoenix contact/P&F

10 Laptop HP/Dell

Note: The above brands have been proposed, however during execution ABB would be at liberty to select equivalent vendor.

**3.2 Scope of Services**

We have considered below-mentioned following services as a part of this proposal.

1. Project Management

2. Engineering

3. Functional Safety Management (attached 5.2 Safety Requirements Checklist) 4. Internal Tests

5. FAT

6. Packing & Shipment

7. Freight

8. Erection Supervision

9. Commissioning

10. SAT

11. Final Documentation

12. Training

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**3.3 Division of Work**

The following table lists all work packages relevant for the listed scope of supply and services of this offer and defines which party is responsible (R) and which party supports (S) in each case.

The tasks listed below relate only to the scope of supply and services listed in this offer for which ABB is responsible and explicitly do not relate to the scope of supply and services

of the overall project. Tasks not explicitly listed therein are excluded from the scope of this offer and may need to be renegotiated.

**Table 3.1 Division of work between ABB and customer for the offer related project scope.**

**Sr.** **No**

**Scope Description Customer ABB Comments**

1 Project management R R Each party is

responsible for their own scope.

2 Project meetings R S

3 Project schedule R S

4 Permit management R -

5 Data input R S

6 Basic Engineering - R

7 Detail Engineering - R

8 Design Freeze R S

9 Purchasing - R

10 Factory acceptance testing (FAT) S R

11 Delivery - R

12 Storage of material at site before

R -

erection

13 Foundation works R -

14 Civil works R -

15 Site infrastructure R -

16 Site management R -

17 Health, safety and environment

(HSE) management

R R Each party is

responsible for their own scope.

18 Quality management R R Each party is

responsible for their own scope.

19 Pipe works R -

20 Cable works R -

21 Erection works R -

22 Erection supervision - R Offered on hourly

basis.

23 Cold commissioning - R Offered on hourly

basis.

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S R Offered on hourly

24 Hot commissioning and site

acceptance testing (SAT)

basis.   
25 Operator / maintenance trainings - - Can be offered on

request after further specification.

26 Handover of ABB scope R S

27 Handover of plant S -

28 Warranty R R Each party is

responsible for their own scope.

29 After-sales service agreement - - Can be offered

directly to the end-user on request.

In addition to above scope below-mentioned scope is offered for PPM.

**Table 3.2 Division of work between ABB and customer for PPM Scope**

**Sr.** **No**

**Scope Description Customer ABB Comments**

1 PPM, IEC 61850, and Modbus

TCP/IP Network outside ABB supply

2 Ethernet switches in switchgear

(for PPM connection)

3 Remote Operation Panel/

Synchronization Panel

4 Under-frequency relay (Part of

ABB Switchgear scope)

5 Integration test with main

generator vendor

6 Communication Interface Test (at

3rd party package vendor factory with ABB PPM)

7 Sea-trial/On/Offshore

Commissioning

* R
* R
* R
* R
* R
* R Per diem basis
* R Per diem basis

8 DNV Certification - R

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**3.4 Assumption List**

1. XXX 2. XXX

**3.5 Compliance and Deviations List**

[01\_Compliance Statement Template.xlsx](https://abb.sharepoint.com/:x:/r/sites/AdaptiveXaitPorter/Shared%20Documents/03_Common/01_Technical%20Compliance%20Statement%20Template.xlsx?d=wce9359c1f9a54eebb1e284efaf590e05&amp;csf=1&amp;web=1&amp;e=uZ5bsZ)

**3.6 TQ and Bid Clarifications List**

[TQ Template](https://abb.sharepoint.com/:x:/r/sites/AdaptiveXaitPorter/Shared%20Documents/03_Common/02_TQ%20Register%20Template.xls?d=we18cadcd9a3e40059b599933f9b2e2b9&amp;csf=1&amp;web=1&amp;e=WfwIxN)

**3.7 Exclusion List**

**The supply excludes:**

− The hardware / software required at ICSS system end for interfacing third party systems are only taken in ICSS scope. Any hardware/software changes at the third-

party system end for interfacing with ICSS system shall not be in scope of ABB. ABB presumes that the cables from third party systems shall be made available at the network cabinet end for interfacing with ICSS system.

− ABB has not included any modification/additional works required in our system due to

some other contract getting executed at the same time in the same location.   
− Interface with Plant LAN is not in ABB Scope of supply. Simplex firewall is offered.

− Any Third-Party system modification.

− Any type of Furniture’s.

− Any protections relay setting, commissioning and testing.   
− Fiber Optic Patch Panel (FOPP) required for Third party Systems.   
− Power Distribution Board.

− Electrical System.

− Fire suppression and firefighting System.

− UPS/Non-UPS and battery back-up.

− All detectors (Fire & Gas)

− All erection activities.

− Any rework/revamp/rerouting of existing systems.

* Supply and installation of any Fiber Optic Patch Panel/Fiber Optic accessories/Field Cables/Power/Special Cables for Instruments and related conduits, lugs, cable tray, pipes etc.

− All civil works & grounding pits.   
− Termination of third-party cables.

* For Power rating, ABB involvement is limited to supplying power consumption

usage of all the equipment that it has supplied.

* Supply of field instrumentation, junction boxes, cable glands, MCT, cable trays,

supports, cables and other accessories are excluded from scope of supply.   
− Fiber optic cable, splicing and termination.

− Cable trays/ Conduits / Support or any such installation material.

* Supply, laying, glanding and termination of inter panel connecting (power cable, signal/instrument cable, communication cables and grounding cables etc.) cables

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and interfacing with third party systems.

− Upgrading / updating of any existing local Instruments/devices/control systems.

− UPS System, Grounding System & Earthing Pits.

* ABB involvement is limited to supplying power consumption usage of all the

equipment that it has supplied to allow for the correct sizing of the UPS/Non-UPS system by the EPC.

− Cubicle/Plant earthing system.

− Panel bottom fire-retardant ceiling.

− All Products and services are excluded which are not specifically mentioned.   
− Providing any features which not available in offered package.

− Mechanical work like drilling in panel, painting & welding is not envisaged.   
− Installation and commissioning of the spare of any spare modules supplied with the

system.

* All third-party devices, panels and related modifications. if AFS and F&G detector

systems are provided by 3rd party, ABB as an ICSS supplier will work with these parties for system interfacing and testing only.

* Risk Analysis & Assessment, HAZOP studies & reviews, SIL determination & reviews,

Safety Requirements Specification (SRS), SIF Determination.

* Accountability for SIL determination of each Safety Instrumented Functions (SIF),

SIL Calculation/Determination, and Systematic Safety Integrity to the required SIL.

* Alarm Rationalization Workshop.

− Special tools for Installation, Test, Operation and Maintenance not been considered.   
− Testing Instruments.

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**4 Commercial Description**

**4.1 Contract Price**

**Base Scope**

**Description Price in USD**

**ABB AbilityTM System 800xA**

$ XXX, XX

(Including design, engineering, procurement, fabrication, internal   
testing and supply of ABB Control System as listed in the scope   
of work).

**Total** $ XXX, XX

**Notes**

− The above prices are based on Incoterms 2023 XXX.

− Price breakout is for information purposes only and can not be purchased separately. − ABB has not included any site support services like FAT, supervision of Erection &

Commissioning and Site Acceptance Test (SAT) support as part of the base proposal. This shall be based on the ABB Standard Project Labor rates provided below.

− ABB has not included revamping/ removal of any/all existing systems/components at

site in our scope of work.

− ABB proposal does not include any cost for Civil/Construction work for any/all the

systems.

− Please see "Section 3 Scope of Work" for more details on Scope of Work.

− Unit rates for additional Engineering support, Field supervision support for Erection/ Commissioning/Initial system check and Site Acceptance Test (SAT) are available on a time & expenses basis, with travel expenses billed at actual cost incurred plus 15%.

**Optional Scope**

**Description Price in USD**

Commissioning Spares $ XXX, XX

Recommended 2 Years Operational Spares $ XXX, XX

Training $ XXX, XX

**4.1.1 General Site Services**

ABB standard rates for erection supervision and commissioning and site training are based on the normal working time of 40 hours per week (5 days of 8 hours) per person. They are charged as follows refer table below.

**Remarks**

All costs for taxes, custom duties or other fees and duties in connection with the conclusion or performance of this contract, are to the charge of the client.

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**Table 4.1 ABB standard site service rates per person**

**Category Description Unit Currency Installation**

**supervisors**



**Commissioning** **/ Service**

Daily rates Normal hrs.on regular working days, 8h/day

from Mon – Fri, between 07:00 - 19:00

Overtime in excess of 8h/day, up to 2h/day / Night works on normal hrs. on regular working days from Mon – Fri, between 19:00 - 07:00

Per day

Per hour

USD XXX XXXX

USD 125% of Normal rate

Normal hrs.on Sat between 07:00 - 19:00 Per hour

USD 150% of Normal rate

Work or Travelling on Sundays/ Holidays, Overtime in excess of 8h/day, up to 2 hours & Night work on Saturdays between 19:00- 07:00

Travelling, briefing-/debriefing time, waiting time

Per hour

Per hour

USD 200% of Normal rate

USD 100% of Normal rate

Accommodation Accommodation including breakfast USD At actual cost + 15%

Admin.fee

Minimum accommodation charges. Per

USD XXX

day

Travel Air ticket class: (Economy) USD At actual

cost + 15% Admin.fee

Travel from ABB office to airport and return (flat   
rate)

USD At actual

cost + 15%   
Admin.fee

Travel within the country / day (rent a car) without driver

Travel within the country / day (rent a car) with driver

Mobilisation Visa administration and personal health & safety preparation, if required

Non-standard health & safety docs and translations for site access, per document

Per day

USD XXX

USD At actual

cost + 15% Admin.fee

USD XXXX

USD XXXX

The site activity is subject to availability of a certified engineer. The requested starting date for site activity is to be confirmed with ABB a minimum of 6 working weeks before the requested start date. Requests to change the confirmed starting date for the service is always subject to availability i.e. the availability will not be guaranteed in case of deviation from the confirmed date. A charge will be applied in case of rescheduling as follows:

If starting date for on-site work is scheduled or

USD XXXX

rescheduled by the customer less than 6

working weeks before agreed commencement,

the customer will pay an administrative fee.

If the starting date is changed within 1 working week all run up costs will be charged. Run up costs may include but are not limited to   
briefing time, costs related to mobilization (e.g. flights, car rentals, visa).

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USD At actual

cost + 15% Admin.fee

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In case ABB is subject to withholding tax in the client’s country, the client will pay such withholding tax on behalf of ABB to the responsible authorities. The client shall submit to ABB a tax receipt for withholding tax paid.

Should taxes, custom duties or other fees and duties be levied on ABB in the client’s country in connection with the conclusion or performance of this contract, ABB reserves the right to issue final invoice adding the costs of such taxes, custom duties or other fees and duties and the client shall pay such invoice within the agreed payment period.

**Preparation, Reporting & Debriefing (at ABB Office)**

Expected briefing time: 8 hours.

Expected debriefing time: 8 hours.

**Home Leave Right**

When employed abroad more than 6 months, our personnel is entitled to home leave each 3 months abroad.

**Working Time**

A normal field service working day is 8 hours between 07:00 - 19:00.

If the work exceeds more than 4 hours on any day or 3 hours for travelling from /to (together) to work site, it shall be treated as a full day work. The minimum invoice is 8 hours per day for standard work, a single person will not be engaged to work more than   
10 hours in a day

**4.2 Terms & Conditions**

**4.2.1 Supply**

**4.2.2 Site Services**

**4.2.3 Training - at site and in office**

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**5 Appendix**

**5.1 Cabinet Typical Drawings**

[800xA Cabinet Typical Drawings](https://abb.sharepoint.com/:f:/r/sites/AdaptiveXaitPorter/Shared%20Documents/01_800xA/03_Cabinet%20Drawings?csf=1&amp;web=1&amp;e=MgxxOA)   
[Symphony Plus Cabinet Typical Drawings](https://abb.sharepoint.com/:f:/r/sites/AdaptiveXaitPorter/Shared%20Documents/02_Symphony%20Plus/Cabinet%20Drawings?csf=1&amp;web=1&amp;e=gdWj5a)

**5.2 Safety Requirements Checklist**

**5.3 Standard Abbrevation List**

**5.3.1 List of Abbreviations**

**Table 5.1 Abbreviation List**

**Abbreviation Full name**   
APC Advanced Process Control

APL Advanced Physical Layer

ATEX Explosive Atmospheres (ATmospheres EXplosibles)   
BF Brownfield

BPCS Basic Process Control System

C&E Cause & Effect

CAP Critical Action Panel

CED Contactor Engineering Database

CCR Central Control Room

CER Central Equipment Room

DCS Distributed Control System

DCU Drive Control Unit (Thruster Ctr, Marinel)   
DIG Data Interface Gateway

EP Engineering and Procurement

EPC Engineering, Procurement and Construction   
EPCH Engineering, Procurement, Construction and Hook-up EPCI Engineering, Procurement, Construction and Installation ESD Emergency Shutdown System

EWS Engineering Work Station

F&G Fire and Gas System

FA Framework Agreement

FAT Factory Acceptance Test

FCA Free Carrier

FDM Field Device Manager

FEED Front End Engineering Design

FISCO Fieldbus Intrinsically Safe Concept   
FTC Field Termination Cabinet

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**Abbreviation Full name**   
GF Greenfield

GL Guideline

HAZOP Hazard and Operability Study   
HIPPS High Integrity Pressure Protection System   
HMI Human Machine Interface

HVAC Heat Ventilation and Air Conditioning

IAC Internode Application Communication (ABB AC800M Controller Node

Function)

IACS Industrial Automation and Control System

IEC International Electrotechnical Commission

IED Intelligent Electrical Devices

IMO International Maritime Organisation

GSE Health Safety and Environment

IAS Integrated Automation System (Marine)

IMS Information Management System

I/O Input / Output

IS Intrinsically Safe

KPI Key Performance Indicator

LBF Large Brownfield

LAN Local Area Network

LER Local Equipment Room

LCI Life Cycle Information

LOPA Layer Of Protection Analysis

LSD Large Screen Display

LTS Long-Term Support

LQ Living Quarter

LV Low Voltage

MAC Main Automation Contractor

MCB Miniature Circuit Breaker

MCC Motor Control Centre

M&M Maintenance and Modification

MTP Module Type Packages

MSI Multi System Integration

NFPA National Fire Protection Association

OMMU Operation, Maintenance, Modification and Upgrade (incl. repair)   
OPC Open Platform Communications

OPC UA OPC Unified Architecture

OPAF Open Process Automation Forum

OPAS Open Process Automation Standard   
OSAT On-Site Acceptance Test

OTS Operator Training Simulator

OWS Operator Workstation

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**Abbreviation Full name**

P&ID Piping and Instrumentation Diagram

PAC Provisional Acceptance Certificate

PCS Process Control System

PDCS Power Distribution Control System   
PO Purchase Order

PPM Process Power Manager

PSA Project Specific Agreement

PSD Process Shutdown System

RCCR Remote Central Control Room (Onshore)   
RFOC Ready for Operation Certificate

RIO Remote I/O

RTD Resistor Temperature Detector

SAS Safety and Automation System

SCD System Control Diagram

SIRL Supplier Information Requirement List

SIF Safety Instrumented Function

SIL Safety Integrity Level

SIS Safety Instrumented System

SOW Scope of Work

SPIR Spare Part List and Interchangeability Record SURF Subsea, Umbilical, Riser and Flowline   
SW Software

TCP/IP Transmission Control Protocol/Internet Protocol TCO Total Cost of Ownership

TCS Turbine Control System

TR Technical Requirement

UPS Uninterrupted Power Supply

VDU Visual Display Unit

VSD Variable Speed Drive

XML Extensible Markup Language

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**5.4 Health, Safety & Environment Management Plan**

Health, Safety and Environment (HSE) shall always be the focus at all levels in the project, from managers to each employee. All activities shall be performed in such a way that HSE is given the same priority as other business activities. Project activities shall be planned and implemented in such a way that Health and Safety are promoted for all project members, a safe and beneficial working environment is provided, and the environment and property are protected.

No activities shall compromise the safety of people and the environment. All project members are required to comply with this policy in all activities in such a way that nobody is subject to occupational injury or disease, pollution of the environment is avoided.

Project Health, Safety and Environmental requirements will be documented within the project HSE plan. This is a live document and will be maintained for the duration of the project.

**5.5 Quality Plan**

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