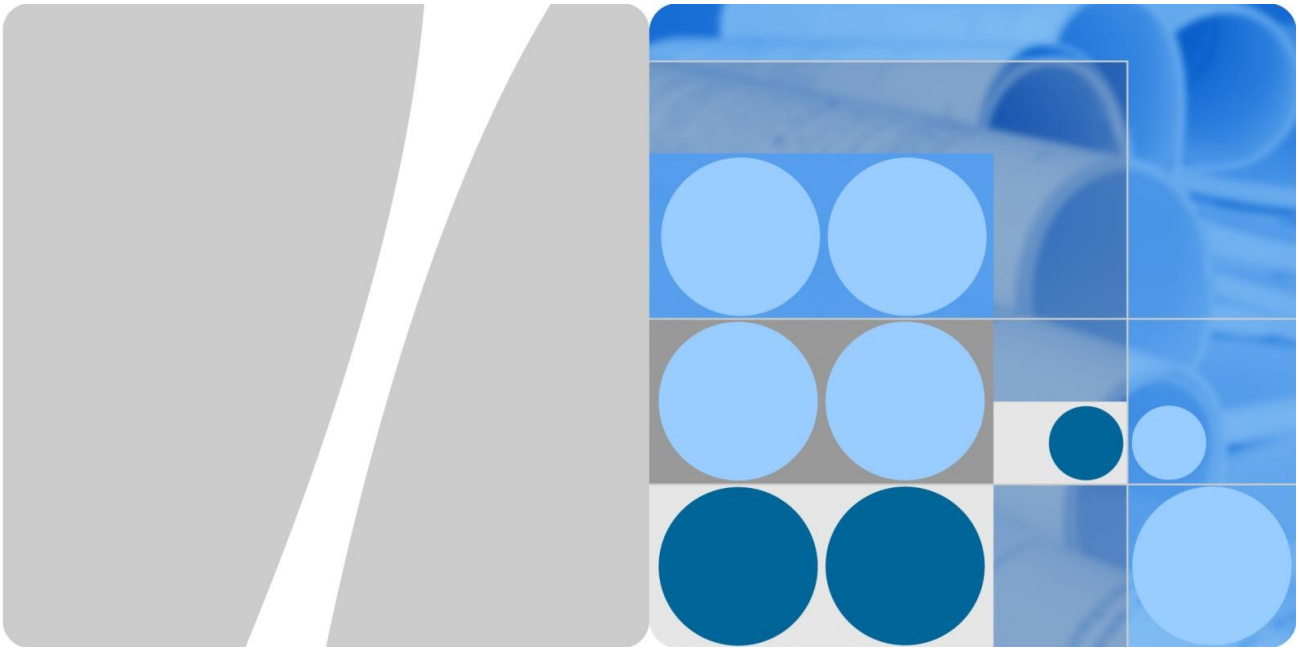

Service Description for UC Implementation

Issue 1.0

Date 2012-11-01

HUAWEI

Contents

1 Service Overview

The UC implementation service includes engineering service, supervision commissioning service, one-off support service. The service targets Huawei UC products and other pre-integrated products (eg. the whole UC system, U19XX and UC application software).

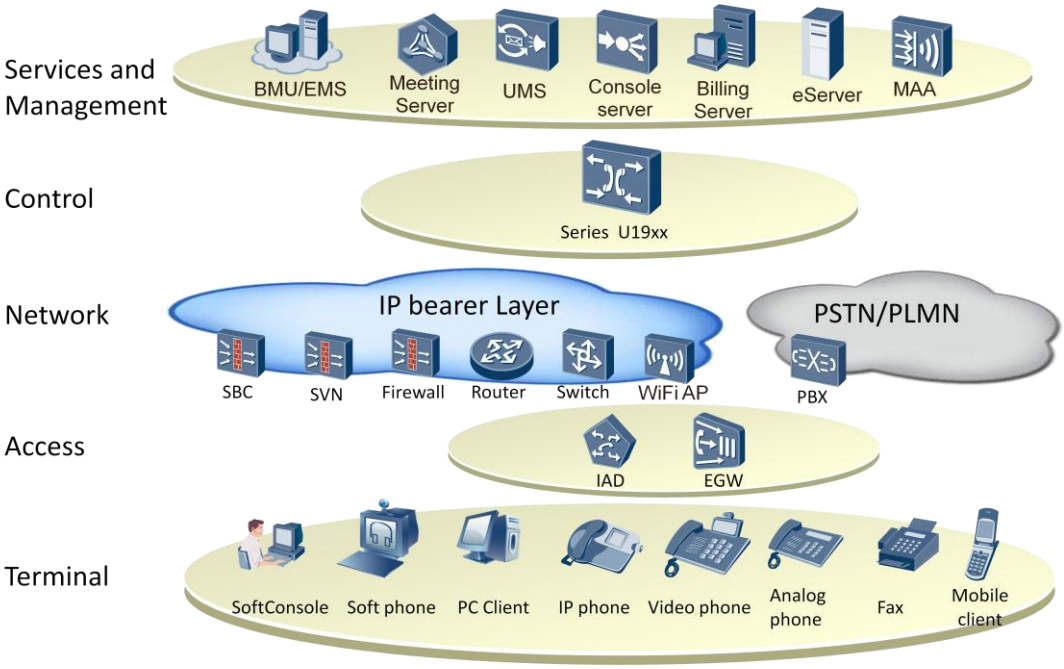

Figure 1-1: Architecture of the Huawei UC

1.1 Service Architecture

Huawei has a wealth of system implementation service experience and hence can provide customers with high quality system implementation service. The diagram below shows the various services and packages that can be parts of the UC implementation service.

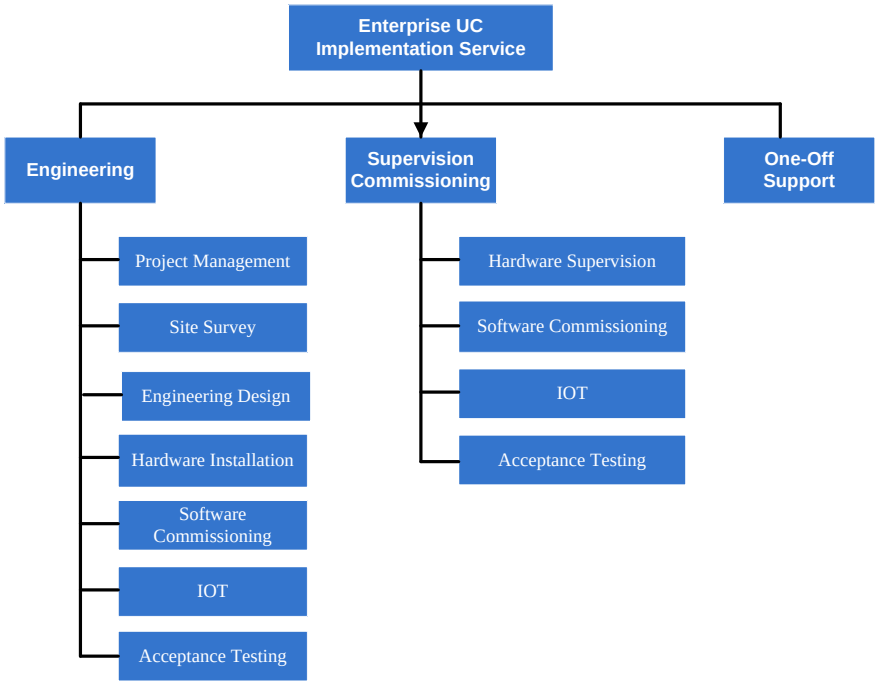

Figure 1-2: Architecture of the Implementation Service

2 Service Description

2.1 Engineering Service

The engineering service includes seven services namely, project management, site survey, engineering design, hardware installation, software commissioning, IOT(interoperability testing) and acceptance testing.

The engineering service of Huawei relies very heavily on the extensive engineering experience that Huawei has gained over long period of time by implementing projects across the globe to many customers in varying geographies. The engineering service takes care of the hardware and software installation, commissioning, debugging etc and ensures that the projects are managed in a global manner to facilitate a smooth and quick completion.

2.2 Supervision Commissioning Service

This includes software commissioning activities and technical guidance for hardware installation in case of any challenges faced. To be able to fix all the technical problems and provide answers to the questions that might arise during hardware installation, to ensure that all the installed equipments are functioning as expected, to complete the audit of the quality checklist for the installation and to support the construction workers to be able to complete all the activities correctly and in time.

Supervision commissioning service includes hardware supervision, software commissioning, IOT(interoperability testing) and acceptance testing.

2.3 One-Off Support Service

When a customer who is not on support contract encounters a problem and urgently needs to resolve it, Huawei can appoint experienced engineers to the customer's site, helping the customer quickly resolve the problem. Huawei will charge on per man day basis or per man hour basis or a flat rate based on the requirements and agreement with the customer.

2.4 Service Details

2.4.1 Project Management

Definition

Project Management will be carried out in such a way that it meets the customer demands. This will be carried out based on the project management processes of PMP, EPC and general standards. The entire project implementation will be monitored and managed to ensure the quality of the project deliverables and also to ensure that the project is completed according to the project plan.

Content

Service Product	Service Module	Description
Project management	Quality management	Project engineering quality management
	Progress management	Project timetable management
	Communication management	Supplier communication
		Subcontractor communication
		Customer communication
	Cost management	Purchase cost
		Labor cost
	Scope management	Scope management
	Technology management	Technology management
	Risk management	Risk management
	Customer satisfaction management	Project service satisfaction management

- **Quality management**: Quality planning, quality assurance, quality control and completion of the project's quality assessment.
- **Progress management:** Effort and duration estimates, preparation of the schedule, monitoring and tracking the project schedule, and controlling the implementation of the project.
- **Communication management**: Establish a protocol for communication between the different stake holders in a project including the suppliers and subcontractors. Effectively manage the different entities by ensuring a proper communication mechanism is in place. Communicate with customers about project implementation and engineering progress.
- **Cost management:** Properly estimate the purchase and implementation costs and monitor the project cost accounting to ensure that the implementation service cost remains at an appropriate level.
- **Scope management**: Manage the project scope based on Huawei rich engineering experience

- **Technology management**: Manage technology related challenges relying on Huawei technology platform and the availability of Huawei experts who provide remote supports.
- **Risk management**: All the risks are identified very early and in a timely manner so as to mitigate those risks and complete the project as per the plan.
- **Customer satisfaction management**: To be in constant touch with the customer and communicating with the customer on a regular basis on the progress of the project, coordinating with the customer for any customer dependencies related to the project and completing the project to the highest satisfaction of the customer.

Deliverables

Module	Activities	Documents
Quality management	Quality planning, quality assurance and control	Project quality assessment report
Progress management	Effort and duration estimates, project planning and tracking	
Communication management	Supplier management	Experience summary report
	Subcontractor management	
	Customer communication	
Cost management	Procurement cost estimates and decision-making	
	Manpower planning, team building	
Scope management	Ensure the scope is signed off, ensure all the agreed deliverables are delivered	
Technical management	Manage and control the technical part of a project	
Risk management	Identify and highlight all the risks from time to time	
Customer satisfaction management	Sharing project update on a regular basis with the customers	

Responsibility Matrix

No.	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
1	Quality management	R	S	-	R
2	Progress management	R	S	-	R

No.	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
3	Communication management	R	S	-	R
4	Cost management	R	S	-	R
5	Scope management	R	S	-	R
6	Technology management	R	S	-	R
7	Risk management	R	S	-	R
8	Customer satisfaction management	R	S	-	R

Note:

The entity responsible can be identified as "R" and there can only be one party responsible;

If both the customer and Huawei are responsible then mark both as "R";

The party who has to provide the information or be informed is identified as "I";

The party who will play a support role is identified as "S";

This will apply to all the following sections unless otherwise stated and agreed.

2.4.2 Site Survey

Definition

A site survey is to check the site conditions (including interior layout, power supply and cabling environments) based on the equipment configuration list.

Content

The site survey content varies with products.

Service Product	Service Module	Description
Site survey	Site survey	Survey of equipment layout
		Survey of the power supply to equipment
		Survey of the equipment monitoring system
		Cabling survey

- **Survey of equipment layout**: Surveying the equipment room, including indoor and outdoor environment, the structure and size, the existing equipment distribution and customer ancillary facilities (example: power, ground bar, air conditioning, alignment of rack and availability of raised floor), to ensure that the equipment can be mounted and installed properly in the equipment room.

- **Survey of the power supply to equipment**: Surveying the equipment room to make sure that power supply available in the equipment room is sufficient to meet the requirement of the new solution that is going to be deployed.
- **Survey of the equipment monitoring system**: This would cover surveying the equipment room for the proper air conditioning (temperature), humidity, smoke detectors, controlled access to the data center, susceptibility to flooding, main power switch etc…This will ensure that the equipments are placed and operating in a monitored environment.
- **Cabling survey**: This would cover surveying the cable routing, relay cable and interface type, non-standard placed cabinet cascade cable, external cable, cabling rack and DDF/ODF provided by Huawei.

Deliverables

Module	Activities	Documents
Site survey	Survey of equipment layout	Survey report, dispatch materials confirmation report.
	Survey of the power supply to equipment	
	Survey of the equipment monitoring system	
	Cabling survey	

Responsibility Matrix

No.	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
1	Coordination for site survey	S	R	-	R
2	Survey preparation and site access	S	R	-	R
3	Equipment room environmental parameters confirmation	S	R	-	R
4	Installation environment related data acquisition	R	S	-	R
5	Site survey result and memorandum of understanding (MOU)	S	R	-	R

2.4.3 Engineering Design

Definition

Engineering design covers preparing an implementation design based on the survey report. This design will include the design drawing and specifications on the interior layout, power, rack and network. The design document will be the reference guide for all the equipment installation related activities.

Content

The engineering design content varies with products.

Service Product	Service Module	Description
Engineering design	Engineering design	Equipment layout design
		Cabling design
		Equipment power calculation

- **Equipment layout design**: Work out equipment room layout diagram, power port usage diagram, and DDF/ODF/MDF port usage diagram to ensure that the project is implemented according to the design.
- **Cabling design**: Provide cabling diagram for the equipment room, ground bar usage diagram, internal cable connection table for equipment, and external cable connection table for equipment to ensure that the standard design and construction norms are adhered to.
- **Equipment power calculation**: The power consumption table showing the power requirement of each component will help in understanding if the power supply system in the equipment room has enough power to meet the overall system requirements.

Deliverables

Module	Activities	Documents
Engineering design	Equipment layout design	Equipment room layout diagrams, power consumption tables and cable connection tables.
	Cabling design	
	Equipment power calculation	

Responsibility Matrix

No.	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
1	Power supply access	S	R	-	R
2	Ground system	S	R	-	R
3	Equipment layout design	R	S	-	R

No.	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
4	Cabling design	R	S	-	R

2.4.4 Hardware Installation

Definition

Hardware installation is to install the equipments and power up them. The equipments include the main equipments and all the other ancillary materials shipped with the master equipment.

Content

The following table lists details of the hardware installation service.

Service Product	Service Module	Description
Hardware installation	Voice access gateway: U2990, U1910/U1930/U1960/U1980, IAD132/IAD1224.	Cabinet installation(on condition that the cabinet is provided by Huawei) in accordance with Huawei engineering specifications and customer requirements
		Sub rack or host installation in accordance with the Huawei engineering specifications and customer requirements
		Board installation or adjustment according to the planned board layout
	Universal server: E6000, RH2285. Storage array: S2600.	Cabinet installation(on condition that the cabinet is provided by Huawei) in accordance with the Huawei engineering specifications and customer requirements
		Sub rack or host installation in accordance with the Huawei engineering specifications and customer requirements
		Board installation or adjustment according to the planned board layout
		Ensure that servers are in place
	Cable installation	Connecting the main equipment and its ancillary equipments using interconnecting cables and trunk lines
		Power cable installation

Service Product	Service Module	Description
		Cabling adjustment of main equipment and its ancillary equipments to a different scenario may be involved
	Hardware self-check and power-on	Complete the quality checklist for quality inspection of the equipments that have been installed completely and if any of the criteria is not met then do the necessary rectification. Verify that the hardware is correctly installed, power on and ensure that all the indicators are normal.

Deliverables

Module	Activities	Documents
Pre-installation preparation	Installation tool preparation and site readiness confirmation	Site readiness checklist
Unpacking inspection	Take the goods out of the box and verify the inventory against the BOM	BOM list signed by the customer
Equipment installation	Installation of the rack and sub rack	-
Cabling	Connect the cables and trunks to the Huawei equipments and make sure that the interconnections between the Huawei equipment	-
Hardware self-check	Post installation of the equipments do a self test of the hardware equipments	Installation quality check report
Power-on	Power-on preparation and power-on status check	Project hardware installation completion report

Responsibility Matrix

No.	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
1	Equipment supply	R	S	S	R
2	Installation of rack (except rack provided by customer)and sub rack	R	S	S	R

No.	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
3	Installation of trunk and Power cables	R	S	S	R
4	Unpacking inspection	R	R	R	R
5	Confirmation on the packing list with signature	R	R	R	R
6	Hardware self-check	R	-	S	R
7	Output of hardware-related documents	R	-	S	R

2.4.5 Software Commissioning

Definition

Software commissioning is to perform software adaptation, configuration and debugging to ensure that the equipment is operational. The software commissioning service primarily covers the following:

- Preparation of system design documents (provided by customer).
- Preparation of commissioning data.
- Software version and license application and installation.
- Configuration data loading.
- Perform software self-check.
- Commissioning of the relevant components.

Content

Service Product	Service Module	Description
Software commissioning	Hardware gateway commissioning: U2990, U1910/U1930/U1960/U1980, IAD132/IAD1224.	Host software loading
		UAP Configuration following U29XX/u19XX/SoftCo configuration instructions and system design documents
		License loading
		Do a software self-check by following UAP quality check standard to ensure the accuracy and integrity of software commissioning

Service Product	Service Module	Description
	Basic software installation(operating system, database, VCS)	Install Windows or Linux by following system design documents(provided by customer)
		Install project supporting database software and its patch package
	UC software installation	Installation and configuration of UC application software including BMU, eSpace server and bill server.
		Installation and configuration of data conferencing software
		Installation and configuration of UMS software
		Installation and configuration of EMS software
		License loading
	UC business commissioning(items selecting according to design document provided by customer)	PC client basic business commissioning: 1. Subscription and cancellation 2. Login and logout of PC client 3. Directory and group 4. Subscriber Status, instant message and group message 5. Voice call and video call
		Conference service commissioning: 1. Voice conference 2. Conferencing 3. Video conference
		eSpace Mobile
		Public network access: 1. PC client public network access 2. Mobile client public network access
		CDR
		UMS
		Console system

Service Product	Service Module	Description
		BMU: 1. Management of BUM users and directory 2. Management of EMS alarm, configuration and performance statistics
	Security and antivirus software	Antivirus software deployment
		Security hardening deployment
	Integration test	Interoperability test within the system modules
	Software self-check	UC software self-check by following *UC 1.1 quality check standard* to ensure the accuracy and integrity of software commissioning

Deliverables

No.	Activities	Documents
1	Software version and license application and verification	Software version and license
2	Software adaption	-
3	System commissioning including license loading	Configuration file
4	Software self-check	Self-check report(optional)

Responsibility Matrix

No.	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
1	Software version and license application and verification	R	-	R	-
2	Software adaption	R	-	R	-
3	System commissioning including license loading	R	S	R	S
4	Software self-check	R	S	R	S

2.4.6 IOT

Definition

IOT is to test the interoperability between interfaces of different pieces of equipment; the interoperability will involve network, protocol, service etc…

Content

Service Product	Service Module	Description
IOT	Interoperability test of the internal components	If only a part of the whole system is in Huawei scope then complete the installation and commissioning of only those components, and support the integration with other systems if required and in scope.
	Interoperability test with LDAP directory	Integration solution development including setting of synchronization field, period etc…
		Network connectivity
		Interoperability test and function verification
	Interoperability test with telepresence conference	Ensure that the telepresence conference system is operational and normal startup
		Network connectivity with telepresence conference system
		Interoperability test with telepresence conference system following UC installation and configuration instructions and system design documents (provided by customer)
		Functions verification
	Interoperability test with Outlook	Ensure that Windows Outlook is operational and normal startup
		Network connectivity with Windows Outlook
		Interoperability test with Windows Outlook following UC installation and configuration instructions and system design documents(provided by customer)

Service Product	Service Module	Description
		Functional verification

Deliverables

No.	Activities	Documents
1	Interoperability test with third party system	Configuration files
2	Software self-check	Self-check report(optional)

Responsibility Matrix

No	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
1	Completion of third party system commissioning	S	R	S	R
2	Interoperability test with third party system	R	R	R	R
3	Software self-check	R	S	R	S

2.4.7 Acceptance Testing

Definition

Acceptance testing covers testing of the equipments that have been sold and delivered. This testing ensures that the equipment meets the basic operation and maintenance requirements, bears the customer service and will be able to run at the customer's site with long term stability.

Content

Service Product	Service Module	Description
Acceptance testing	Hardware functional acceptance testing	This testing is performed by a third party authorized by the customer or the client. This testing takes care of the basic functional testing of the equipment and also checks for the number and type of the equipment delivered in conformance with the contract. The test also makes sure that the redundancy and the survivability features are working

Service Product	Service Module	Description
	Software functional acceptance testing	This is performed by a third party authorized by the customer or client. The testing focuses on testing the software function and licensing mechanism. The testing would give an assurance that the software functions as per the specifications and meets the basic customer requirements in terms of the operations, maintenance, software redundancy and providing performance statistics.
	Acceptance document and report	This includes the test cases with the description of the test scenarios, prerequisites for each test case, expected result for the test case and the exit or the acceptance criteria for the test case. This also includes the table with the names of the people who can authorize or sign off on the test cases.

Deliverables

No.	Activities	Documents
1	Test Case Design	Customized product acceptance manual
2	Tools preparation	-
3	Hardware functionality acceptance	-
4	Software functionality acceptance	-
5	Problems processing	-
6	Sign test results to confirm	Acceptance manual, signature form
7	Acceptance document	Acceptance report, acceptance manual and signature form

- **Test Case Design**: Test cases design based on the customer needs and operating environment.
- **Tools preparation**: Coordination with the team from the customer end who are required to prepare the acceptance test tools, test terminals etc…, for example: test card, measuring instrument, test terminal etc…
- **Hardware functionality acceptance**: Perform the testing with the test cases affirmed by customer or third party authorized by the customer, and confirm on the basic functioning of the equipment hardware.

- **Software functionality acceptance**: Perform the testing with the test cases affirmed by customer or third party authorized by the customer, and confirm on the basic functioning of the equipment software.
- **Problems processing**: All the failed test cases are followed up with the required remedial action to close the problem
- **Sign test results to confirm**: Sign off on the test cases with the client or the customer authorized third party after performing the test.
- **Acceptance document**: This document contains the test cases with a detailed description of the scenario, the prerequisites for the test case execution, the expected test results, the acceptance criteria and the sign off table consisting of names of people who are authorized to sign off on the test cases.

Responsibility Matrix

No.	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
1	Tools preparation	S	R	S	R
2	Acceptance application	R	S	R	S
3	Defining of acceptance criteria, test items, and fault classification	R	R	R	R
4	Acceptance test based on the acceptance criteria agreed on by both parties	R	R	R	R
5	Confirmation on the acceptance result with signature	R	R	R	R
6	Output of acceptance documents	R	-	R	-

2.4.8 Hardware Supervision

Definition

Hardware Supervision service provides technical guidance in the process of equipment installation. Answers all the questions that come up during engineering activities related to the products. Guide the construction workers to properly work towards a quick and timely completion of all the tasks.

Content

Service Product	Service Module	Description
Hardware supervision	Unpacking inspection	Provide guidance in the process of unpacking
	Technical guidance on hardware installation	Provide the required training to the people involved in hardware installation and guide them in various scenarios to complete the task
	Guidance in case of hardware installation problems	Provide the necessary on-site supervision
		Provide necessary technical support to the hardware personnel and responding to their technical inquiries
		Report any problem pertaining to the hardware delivery or the goods delivered
		Coordinate with the respective teams in case of damage to the goods during the installation
	Hardware installation quality inspection and guidance	Resolving of other technical issues related to hardware installation
		Provide guidance on the hardware installation quality checks and share the quality standards documents that can be referred when needed

- **Unpacking inspection**: Guide the hardware installation team to unpack and inspect the goods. To confirm along with the customer regarding the goods that have arrived and resolve any issues related to the goods.
- **Technical guidance on hardware installation**: To be able to answer the questions related to the hardware installation process, including phone support or site support to carry out the installation specific to the customer as per the agreement.
- **Guidance in case of hardware installation problems**: To guide and handle the problems relating to the hardware installation process or the materials shipped not meeting the quality requirement and offer solution to the stated problem.
- **Hardware installation quality inspection and guidance**: Provide guidance on the hardware installation and quality check process and ensure that the quality of hardware installation meets the customer requirements.

NOTE

1. The hardware supervision service only provides technical support and does not cover detailed hardware installation operations and activities.

2. The hardware supervision service and the hardware installation service must not be provided simultaneously.
3. The engineering service does not contain any supervision service. The Supervision commissioning service only provides the hardware supervision service.

3 Acronyms and Abbreviations

A

AC	Alternating Current
AP	Access Point

C

CA	Certificate Authority

D

DB	Database
DC	Direct Current
DG	Disk Group
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Server

E

E1	A European standard for high-speed data transmission at 2.048 Mbit/s. It provides thirty-two 64 kbit/s channels. A time division multiplexing frame is divided in to 32 timeslots numbered from 0 to 31. Timeslot 0 is reserved for frame synchronization, and timeslot 16 is reserved for signaling transmission. The rest 30 timeslots are use as speech channels. Each timeslot sends or receives an 8-bit data per second. Each frame sends or receives 256-bit data per second. 8000 frames will be sent or received per second. Therefore the line data rate is 2.048 Mbit/s.
EMS	Element Management System

H

HA	High Availability

I

IAD	Integrated Access Device
IM	Instant Messaging
IME	Installation & Maintenance Engineer
IMS	IP Multimedia Subsystem
IOT	Interoperability Testing
IP	Internet Protocol
IT	Information Technology

L

LAN	Local Area Network
LDAP	Lightweight Directory Access Protocol
LUN	Logical Unit Number
LV	Logical Volume
LVM	Logical Volume Manager

M

MAA	Multimedia Authentication Answer
MAC	Message Authentication Code
MAS	Mobile Agent Server
MCU	Multipoint Control Unit
MDT	multicast distribution tree
MFC	Metalized Film Capacitor
MGCP	Media Gateway Control Protocol
MPU	Main Processing Unit

N

NAT	Network Address Translation
NTP	Network Time Protocol

O

OMU	Operation and Maintenance Unit

P

PBX	Private Branch Exchange
PRA	Primary Rate Access
PSTN	Public Switched Telephone Network

S

SBC	Session Border Controller
SIP	Session Initiation Protocol
SMP	Service Management Point
SMS	Service Management System
SNTP	Simple Network Time Protocol
SS7	Signaling System No. 7
SVN	Secure Sockets Layer Virtual Private Network

U

UA	User Agent
UC	Unified Communication
UMS	Unified Message System
UPS	Uninterruptible Power Supply

V

VCS	Veritas Cluster Server
VG	Volume Group
VLAN	Virtual Local Area Network
VPN	Virtual Private Network
VoIP	Voice Over IP