

# Service Description for VC Implementation

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# 1 Service Overview

The VC implementation service includes engineering service, supervision commissioning service, one-off support service. The service targets Huawei VC products and other pre-integrated products (eg.VC terminal, terminal peripherals, MCU and business management platform).

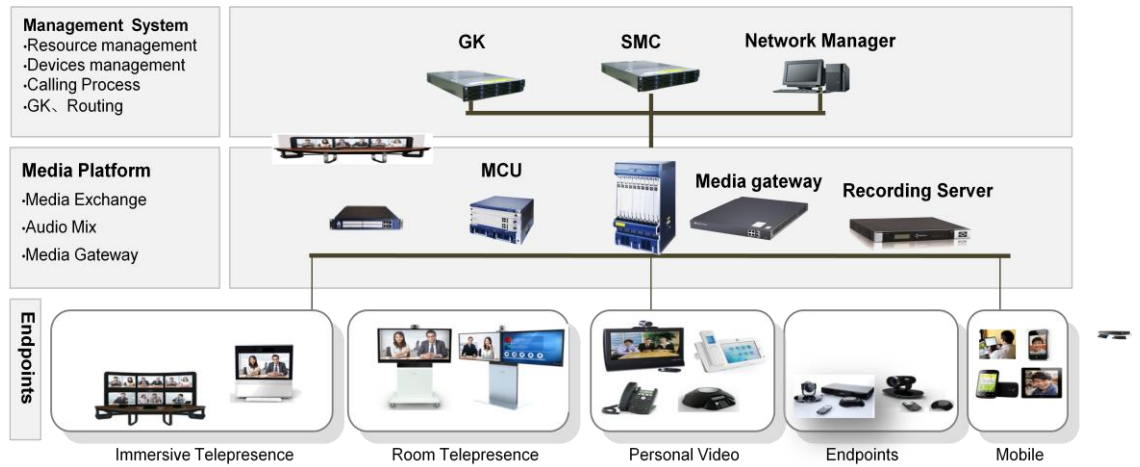


Figure 1-1: Architecture of the VC&Telepresence Solution

## 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 VC implementation service.

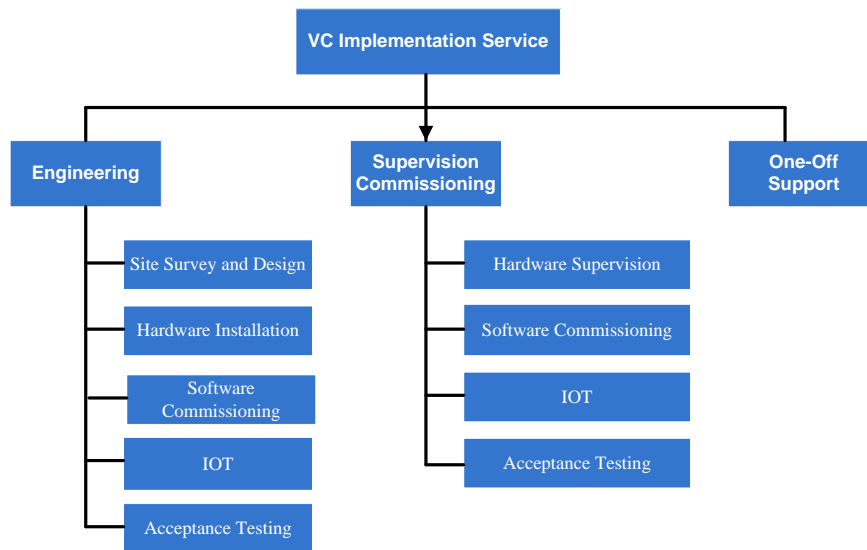


Figure 1-2: Architecture of the Implementation Service

# 2 Service Description

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## 2.1 Engineering Service

The engineering service includes five services namely, site survey and 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 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 Site survey and design

#### Definition

The site survey and design service covers the following:

- Project manager appoints service engineers to check the site conditions including interior layout, power supply and cabling environments by following *VC Site Survey and Monitoring Operation Instruction*.
- Output of related documents, including *VC MCU Survey Report*, *VC Terminal Survey Report*, *Telepresence Conference Room Survey Report* and *Telepresence Conference Room Decoration and Renovation Proposal*, to guide the equipment installation and telepresence conference room transformation.

## Content

The site survey and design service content varies with products.

Service Product	Service Module	Description
Site survey	Site survey	Survey of equipment layout
		Survey of the power supply to equipment
		Cabling survey
		Survey of telepresence conference room
	Site design	Equipment layout design
		Cabling design
		Equipment power calculation
		Proposal of telepresence conference room decoration and renovation

- **Survey of equipment layout:** Surveying the conference room/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 conference room/equipment room.
- **Survey of the power supply to equipment:** Surveying the conference room/equipment room to make sure that power supply available in the conference room/equipment room is sufficient to meet the requirement of the new solution that is going to be deployed.
- **Cabling survey:** This would cover surveying the cable routing, relay cable and interface type and length of the wire.
- **Survey of telepresence conference room:** This would cover surveying the size, fenestration, materials, lighting, temperature, noise, power supply and network of the telepresence conference room. This will ensure that the equipments are placed and operating in a standard environment.
- **Equipment layout design:** Work out equipment room layout diagram, power port usage diagram, etc...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.
- **Proposal of telepresence conference room decoration and renovation:** Work out *Telepresence Conference Room Decoration and Renovation Proposal* to ensure the implementation of telepresence conference room standard design and provide face-to-face FHD user experience.

## Deliverables

Module	Activities	Documents
Site survey	Survey of equipment layout	<i>VC MCU Survey Report, VC Terminal Survey Report, Telepresence Conference Room Survey Report</i>
	Survey of the power supply to equipment	
	Cabling survey	
	Survey of telepresence conference room	
Site design	Equipment layout design	<i>Telepresence Conference Room Decoration and Renovation Proposal</i>
	Proposal of telepresence conference room decoration and renovation	

## 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
6	Equipment layout design	R	S	-	R
7	Telepresence conference room decoration and renovation	S	R	-	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.

## Service Value

The value of the service lies in professional site survey of conference room/equipment room, equipment layout design and installation, project implementation guidance, economic and reasonable design of conference room/equipment room dimension and layout, providing detailed document of telepresence conference room decoration and renovation and offering customer face-to-face FHD user experience.

## 2.4.2 Hardware Installation

### Definition

Hardware installation is to install the equipments and power them up. 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	Equipment installation	Cabinet installation (except that provided by customer)
		VC terminal and peripheral installation
		MCU installation
		Board installation and adjustment
		Optional module installation
		Telepresence system component and purchased supporting component installation
	Cable installation	Cable installation
		Cable adjustment
	Hardware self-check and power-on	Hardware self-check and power-on

- **Cabinet installation:** Cabinet (except that provided by customer) installation in accordance with Huawei engineering specifications and customer requirements.
- **VC terminal and peripheral installation:** VC terminal and peripheral installation in accordance with Huawei engineering specifications and customer requirements.
- **MCU installation:** MCU installation in accordance with Huawei engineering specifications and customer requirements.



- **Board installation and adjustment:** Board installation or adjustment according to the planned board layout.
- **Optional module installation:** Installation of optional modules of E1, 4E1, DSP, etc...
- **Telepresence system component and purchased supporting component installation:** Telepresence system component and purchased supporting component installation in accordance with Huawei engineering specifications and customer requirements.
- **Cable installation:** Connecting the Huawei equipment and its ancillary equipments using interconnecting cables and fibers.
- **Cable adjustment:** Cabling adjustment of Huawei equipment and its ancillary equipments to a different scenario.
- **Cabling:** Cable routing, binding and marking according to Huawei standard cabling process to achieve perfect sound effect and facilitate maintenance.
- **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	<i>Site Readiness Checklist, Kickoff Agreement</i>
Unpacking inspection	Take the goods out of the box and verify the inventory against the BOM	<i>BOM List signed by the customer</i>
Equipment installation	Installation of cabinet, terminal, MCU, telepresence component and purchased component	-
Cabling	Connect the cables and pigtailed to the Huawei equipments and make sure that the interconnections between the Huawei equipment	-
Hardware self-check	Complete equipment hardware self-check	<i>VC Hardware Quality Check Report</i>
Power-on	Power-on preparation and power-on status check	<i>Hardware Installation Completion Report</i>

## Responsibility Matrix

No.	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
1	Unpacking inspection	R	R	R	R

No.	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
2	Confirmation on the packing list with signature	R	R	R	R
3	VC switching platform installation				
3.1	VC switching platform MCU installation	R	S	-	R
3.2	VC switching platform hardware installation	R	S	-	R
4	Power supply system installation				
4.1	Provision and installation of power distribution frame and multi-purpose power socket	-	R	-	R
4.2	Provision and installation of emergency power supply system	-	R	-	R
4.3	Provision and installation of battery	-	R	-	R
4.4	Provision and installation of power rectifier	-	R	-	R
4.5	Provision and installation of power inverter	-	R	-	R
5	Power cable installation				
5.1	Provision and installation of all power cables connecting VC equipment and power distribution frame or multi-purpose power socket	R	-	-	R
5.2	Provision and installation of power cables connecting client-side power supply equipments	-	R	-	R
6	Ground cable installation				
6.1	Provision and installation of ground cables of client-side power supply equipments	-	R	-	R
6.2	Provision and installation of ground cables of VC equipments	R	-	-	R

No.	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
6.3	Installation of ground cables of other equipments in the client's equipment room	-	R	-	R
6.4	Provision and installation of ground cable plate	-	R	-	R
7	Transmission cable installation				
7.1	Provision and commissioning of cables connecting VC equipments and client's transmission equipment, preparation of cable connectors on the VC equipments	R	-	-	R
7.2	Provision and installation of cable connectors on the client's transmission equipments	-	R	-	R
8	VC terminal installation				
8.1	Installation and commissioning of VC terminal hardware and software excluding software client Openeye	R	-	-	R
8.2	Installation and commissioning of PCs or servers and software related to VC terminal maintenance (only in the case that Huawei terminal maintenance console is purchased by the customer)	R	-	-	R
8.3	Installation and commissioning of VC terminal peripherals including TV, projector, microphone, speaker, power amplifier, mixing console, etc...(only in the case that the peripherals are provided by Huawei)	R	-	-	R

No.	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
8.4	Installation and commissioning of VC terminal peripherals including TV, projector, microphone, speaker, power amplifier, mixing console, etc...(only in the case that the customers procure these items themselves)	-	R	-	R
9	Preparation of equipment operating circumstances				
9.1	Installation of cables and connectors of equipments provided by Huawei	R	-	-	R
9.2	Installation of cables of equipments procured by customers themselves	-	R	-	R
9.3	Provision and installation of air conditioner	-	R	-	R
9.4	Provision and installation of lighting equipments in the conference room	-	R	-	R
9.5	Provision and installation of multi-purpose power socket	-	R	-	R
9.6	Installation of power distribution frame	-	R	-	R
10	Hardware self-check	R	-	S	R
11	Hardware related documents	R	-	S	R

## Service Value

Relying on the extensive engineering experiences and close cooperation with local subcontractors, Huawei provides full equipment installation adapted to meet various norms and different customer's individual requirements.

Hardware installation service features standardized implementation process covering comprehensive quick install guide and hardware installation SOP to ensure a low-cost, fast and correct delivery.

## 2.4.3 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 configuration of VC terminal, MCU, service platform and telepresence system.

### Content

Service Product	Service Module	Description
Software commissioning	Terminal commissioning	Software upgrading
		Configuration
	MCU commissioning	Software upgrading
		Configuration
		License loading
	Service platform commissioning	GK configuration
		RM configuration
		License loading
	Telepresence system configuration	Main components upgrading
		Main components configuration
		Tri-lens camera adjustment

- **Terminal commissioning:** Software version upgrade and configuration of VC terminal parameters according to the design document provided by customer.
- **MCU commissioning:** Software version upgrade, configuration of parameters and license loading of MCU according to the design document provided by customer.
- **Service platform commissioning:** License loading and configuration of GK, RM and business management platform according to the design document provided by customer.
- **Telepresence system configuration:** Upgrade and configuration of main telepresence system components including host, terminal, touch screen, etc... Adjustment of tri-lens camera for optimal video effects according to the design document provided by customer.

### Deliverables

No.	Activities	Documents
1	Software version and license application and verification	Software version and license
2	Software version adaption	-
3	Data and license loading	Equipment configuration parameters

- **Software version and license application and verification:** Apply for software version and license according to the contract, and then do necessary verification.
- **Software version adaption:** Software version loading and upgrade following corresponding instructions.
- **Data and license loading:** Configuration files and license loading and activation following corresponding instructions.

## Responsibility Matrix

No.	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
1	Preparation for commissioning data	S	R	S	R
2	Commissioning tools and instruments preparation	S	R	S	R
3	Software version and license application and verification	S	R	R	S
4	Software version adaption	R	S	R	R
5	Data and license loading	R	S	S	R

## Service Value

The service helps customer's complete software commissioning in a short time and focus on core business, and facilitates smooth, fast and satisfactory project delivery.

## 2.4.4 IOT

### Definition

IOT is to test interoperability of equipments and conference sites, including video-audio loopback testing, point to point call testing, site call testing, multipoint conference testing and telepresence conference sites testing.

### Content

Service Product	Service Module	Description
Interoperability testing	Video-audio loopback testing	Video loopback testing
		Audio loopback testing
	Interoperability testing of conference sites	Point to point call testing
		Site call testing
		Multipoint conference testing

Service Product	Service Module	Description
		Telepresence conference sites testing

- **Video loopback testing:** Video loopback testing on the terminals to ensure the video connectivity of local site and between local site and remote sites.
- **Audio loopback testing:** Audio loopback testing on the terminals to ensure the audio connectivity of local site and between local site and remote sites.
- **Point to point call testing:** Examine IP point to point call and video-audio function.
- **Site call testing:** Examine site call function of terminals.
- **Multipoint conference testing:** Examine meeting schedule function of business management platform and video-audio function of multipoint conference terminals.
- **Telepresence conference sites testing:** Examine meeting schedule function of business management platform and video-audio function of telepresence conference system.

## Deliverables

No.	Activities	Documents
1	Interoperability testing	Acceptance report

## Responsibility Matrix

No.	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
1	Commissioning data preparation	S	R	R	S
2	Tools and instruments preparation	S	R	R	S
3	Interoperability testing	R	S	R	S

## Service Value

Ensure that the equipments run at the customer's site with long term stability and also meet the customer demands.

## 2.4.5 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. Acceptance testing primarily includes system test, user acceptance test, trial run and final acceptance test.

## Content

Service Product	Service Module	Description
Acceptance testing	System test	VC system overall test
	User acceptance test	Equipments transfer
		User acceptance test
		Documents transfer
	Trial run	The whole system test run
	Final acceptance test	Results confirmation of all test stages
		Retest if necessary
		Inventory check
Evaluation of engineering quality		

- **System test:** Huawei appoints engineers to do the system test and list all the test related items, methods, tools and parameters for the preparation of the test report, and is responsible to regularly inform customers of work schedule, problems met during the test and their solutions. The test happens after all the system components are installed.
- **User acceptance test:** The test is to inspect hardware installation quality, equipment status, technical data and spare parts based on detailed user acceptance test plan provided by Huawei. The test happens at the transfer of the equipments and should be completed by Huawei and the customer.
- **Trial run:** During the three months trial run period, the customer is responsible to do the routine test according to the specification and keep a detailed record of the maintenance, user complaints, warnings, faults in software and hardware, fault repairing, damaged components replacement and bug fix.
- **Final acceptance test:** The final acceptance test includes results confirmation of all test stages, necessary retests, inventory check and evaluation of engineering quality. The both sides signed *Final Acceptance Test Certificate* and completion technical document provided by Huawei are generated after this test.

## Deliverables

No.	Activities	Documents
1	Test cases design	Customized product acceptance manual
2	Tools preparation	-
3	System test	Test report
4	User acceptance test	<i>User acceptance Test Certificate</i>



No.	Activities	Documents
5	Trial run test	-
6	Final acceptance test	<i>Final Acceptance Test Certificate</i>

- **Test cases design:** Test cases design based on the customer needs and operating environment.
- **Tools preparation:** Huawei provides test items, methods, indicators and necessary instruments.
- **User/final acceptance test certificate:** Sign off on the test cases with the client or the customer authorized third party.
- **Transfer of acceptance documents:** Transfer the completion documents to the customer.

## Responsibility Matrix

No	Service Activities	Engineering Service		Supervision Commissioning Service	
		Huawei	Customer	Huawei	Customer
1	Tools preparation	R	S	R	S
2	Acceptance application	R	-	R	-
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	S	R	S	R
5	Confirmation on the acceptance result with signature	R	R	R	R
6	Transfer of acceptance documents	R	-	R	R

## Service Value

The service provides professional acceptance documents and customized interoperability test cases to ensure that the equipments run at the customer's site with long term stability and also meets the customer demands.

## 2.4.6 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.

## Service Value

Relying on profound knowledge of video conference, Huawei provides professional installation service and solutions to ensure the fast, correct and high quality project delivery.

### **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 Abbreviations and Acronyms

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## A

<b>AC</b>	Alternating Current
<b>ADSL</b>	Asymmetric Digital Subscriber Line
<b>ALM</b>	Alarm

## B

<b>BRI</b>	Basic Rate Interface
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## C

<b>CAS</b>	Channel Associated Signaling
<b>CCD</b>	Charge Coupled Device
<b>CCS</b>	Common Channel Signaling
<b>CIF</b>	Common Intermediate Format
<b>CRC</b>	Cyclic Redundancy Check
<b>CVBS</b>	Composite Video Base Signal

## D

<b>DNS</b>	Domain Name Server
<b>DSCP</b>	Differentiated Services Code Point

## E

<b>ETS</b>	European Telecommunications Standards
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## F

<b>FTP</b>	File Transfer Protocol
<b>FE</b>	Fast Ethernet

## G

<b>GE</b>	Gigabit Ethernet
<b>GK/gk</b>	Gatekeeper
<b>I</b>	
<b>IEC</b>	International Electrotechnical Commission
<b>IP</b>	Internet Protocol
<b>ITU</b>	International Telecommunications Union
<b>IVR</b>	Interactive Voice Response
<b>M</b>	
<b>MCU</b>	Multipoint Control Unit
<b>MTBF</b>	Mean Time Between Failures
<b>MTTR</b>	Mean Time To Repair
<b>N</b>	
<b>NAT</b>	Network Address Translation
<b>NTSC</b>	National Television Standards Committee
<b>Q</b>	
<b>QCIF</b>	Quarter Common Intermediate Format
<b>QoS</b>	Quality of Service
<b>R</b>	
<b>RM</b>	ResourceManager
<b>S</b>	
<b>SC</b>	SwitchCentre
<b>T</b>	
<b>ToS</b>	Type of Service
<b>TP</b>	Telepresence
<b>V</b>	



**VC**            Video Conference