

GLOBAL CARRIER SERVICES DEFINITION MODULE

The following web module, including definitions of various Global Carrier Services, shall be applicable for definitions identified in the Service Schedule for Global Carrier Services ("Service Schedule") and applicable Order Forms and other documents as referred in Service Schedule or Order Forms.

Generic Definitions:

1. **"COF(Customer Order Form) or Order Form"** shall mean document, in the format provided by the Supplier, which specifies the Services, quantities, pricing, and other commercial terms agreed between the Customer and the Supplier. The COF forms part of, and is governed by, the Agreement.
2. **"CQF(Customer Qualification Form)"** shall mean document, in the format provided by the Supplier which specifies technical requirements received from customer
3. **"Solution Design Document"** shall mean solution agreed with customer to address customer's requirements based on inputs received from Customer in CQF.
4. **"Billing Frequency"** shall mean regular interval at which invoices are generated and issued by the Supplier to the Customer for the Services provided (e.g., monthly, quarterly, annually), as set out in the COF or Agreement.
5. **"Payment Term"** shall mean period from the invoice date within which the Customer must make full payment to the Supplier for the amounts invoiced (e.g., thirty (30) days from the invoice date), as specified in the Agreement.
6. **"Billing Method"** shall mean billing to customer for services used from supplier in advance or arrear based.
7. **"Invoice Method"** shall mean format and delivery method by which the Supplier issues invoices to the Customer (e.g., electronic invoicing via email or portal, paper invoice sent by post), as specified in the Agreement/COF or mutually agreed in writing.

TRANSPORT SERVICE

1.1 SCCP

1.1.1 DEFINITIONS

- i. **"ANSI"** shall mean American National Standards Institute, and shall refer to the telecommunications standards used in North America, including but not limited to U.S.A., Canada, Bermuda and Trinidad.
- ii. **"CDMA"** shall mean Code Division Multiple Access.
- iii. **"Converted MSU"** shall mean the MSU message being converted from ANSI to ITU or ITU to ANSI protocol.
- iv. **"Destination"** shall mean a mobile network operator or application service provider capable to exchange SCCP signaling.
- v. **"DPC"** shall mean destination point code.
- vi. **"Global Title Translation"** shall mean the use of the Signaling Connection Control Part (SCCP) of the SS7 protocol to route a MSU.
- vii. **"International Gateway Provider" or "IGP"** shall mean, the International Carrier providing a Mobile Operator or VAS Provider with a SCCP transport service similar to the Service provided under the Agreement.
- viii. **"MSU"** shall mean Message Signaling Unit and shall correspond to SS7 traffic bearing a TCAP MAP or CAP payload.
- ix. **"MTP"** shall mean message transfer point.
- x. **"Incoming MSUs"** shall mean MSUs, which are originated by the Customer's Signaling Partners requiring Supplier to perform Global Title Translation and to deliver SS7 traffic to Customer.
- xi. **"IMSI"** shall mean International Mobile Subscriber Identity
- xii. **"IP"** shall mean Internet Protocol.
- xiii. **"IREG"** shall mean International Roaming Expert Group
- xiv. **"ITU-T"** shall mean the International Telecommunications Union Technical, and shall refer to the telecommunications standards used in most of the world, including Europe, Asia, Africa and South America.
- xv. **"Mobile Operator" or "Operator"** shall collectively refer to the GSM/CDMA Network Operator,
- xvi. **"Outgoing MSUs"** shall mean MSUs, which are originated by the Customer requiring Supplier to perform Global Title Translation and to deliver SS7 traffic to customer's Signaling Partner.
- xvii. **"OPC"** shall mean origination point code, which corresponds to 3-005-1.
- xviii. **"Service Outage"** shall mean a total loss of signalling transport impacting the Customer's entire roaming traffic that is based upon a failure of Supplier's network but excluding Planned Interruptions of Service.
- xix. **"Signaling Connection Control Part" or "SCCP"** shall refer to the method of routing MSUs. This routing is performed by analysis and Global Title Translation of the Called Party Address in the SCCP layer of the MSU.

- xx. **“Stream Control Transmission Protocol” or “SCTP”** shall mean a transport-layer protocol serving in a similar role to the protocols Transmission Control Protocol (TCP) and User Datagram Protocol (UDP). It provides some of the same service features of both and is defined IETF RFC 4960.
- xxi. **“Signaling Partners” or “Roaming Partners”** shall mean the Destinations with whom Customer has elected to exchange SS7 traffic and constitutes authorized Destinations by the Customer.
- xxii. **“SMS”** shall mean Short Message Service.
- xxiii. **“SS7”** shall mean the Signaling System 7 common channel out of band signaling protocol developed by the International Telecommunications Union - Technical Standards and the American National Standards Institute (“ANSI”).
- xxiv. **“STP”** shall mean Signaling Transfer Point network node.
- xxv. **“TSC”** shall mean Technical Support Center of Tata Communications
- xxvi. **“VAS”** shall mean Value-Added Service
- xxvii. **“End User”** shall mean any person or entity deriving or making use of the Services through Customer including but not limited to, Customer, an Affiliate of Customer or a customer of Customer.

1.2 DIAMETER SIGNALING EXCHANGE

1.2.1 DEFINITIONS

- i. **“Destination”** shall mean a mobile network operator or application service provider capable to exchange Diameter signaling.
- ii. **“Diameter Routing Agent” or “DRA”** shall refer to the generic entity residing in the IGP’s domain that performs diameter signaling routing by analysis of parameters in the diameter layer of the signaling unit.
- iii. **“Diameter Signaling Exchange Service”** shall mean the Supplier’s Diameter Routing Agent which provides centralized interconnect point for subscriber mobility management, authentication, and policy control for LTE roaming between the operator’s network and roaming partners.
- iv. **“Diameter Signaling Transaction” or “Transaction Signaling Unit (TSU)”** shall mean the combination of Diameter request and answer messages exchanged between Customer and Supplier networks with the same hop-by-hop ID.
- v. **“International Gateway Provider” or “IGP”** shall mean the international carrier providing Diameter Signaling Exchange service or Similar services mentioned in services to a mobile operators.
- vi. **“Logical interface”** shall mean a virtual LAN dedicated to diameter signaling customer traffic.
- vii. **“Minimum Monthly Service Fees”** shall mean the minimum monthly recurring Service Fees for the Service as set out in the Order Form.
- viii. **“Multiprotocol Label Switching” or “MPLS”** is an IETF initiative that integrates Layer 2 information about network links (bandwidth, latency, utilization) into Layer 3 (IP) within a particular autonomous system (or ISP) in order to simplify and improve IP-packet exchange.
- ix. **“Network-to-network Interface” or “NNI”** is an interface which specifies signaling and management functions between two networks. NNI circuit can be used for interconnection of either signalling (e.g. SS7) or IP (e.g. MPLS).
- x. **“NRC”** shall mean the non-recurring charges to be made by the Customer for installing, commissioning and provisioning of the Service as set out in the Order Form.
- xi. **“Signaling Partners” or “Roaming Partners”** shall mean the Destinations with whom Customer has elected to exchange diameter traffic and constitutes authorized Destinations by the Customer.
- xii. **“Service Outage”** shall mean a total loss of signaling transport impacting the Customer’s entire roaming traffic that is based upon a failure of Supplier’s network but excluding Planned Interruptions of Service.
- xiii. **“Service Outage Credit”** shall mean the service credit further described in Service Schedule Annex-1.
- xiv. **“End User”** shall mean any person or entity deriving or making use of the Services through Customer including but not limited to, Customer, an Affiliate of Customer or a customer of Customer.

1.3 5G ROAMING SIGNALLING SERVICE

1.3.1 DEFINITIONS

- i. **“Destination”** shall mean a mobile network operator or application service provider capable to exchange 5G HTTP/2 roaming signalling.

- ii. **“Security Edge Protection Proxy” or “SEPP”** shall refer to the supplier's network entity residing in the IGP's domain that performs HTTP/2 signaling routing by analysis of parameters in the HTTP/2 layer of the signaling unit. The Supplier's Security Edge Protection Proxy node which provides centralized interconnect point for subscriber mobility management, authentication, and policy control for 5G roaming between the operator's network and roaming partners.
- iii. **“HTTP/2”** shall mean the Hyper Text Transfer Protocol is a signaling protocol developed by HTTP working group Internet Engineering Task Force (IETF) with RFC7540 standards.
- iv. **“Incoming HTTP/2 Signalling MSU”** shall mean MSUs, which are originated by the Service User's Signaling Partners requiring Tata Communications to deliver HTTP/2 traffic to Service User.
- v. **“Outgoing HTTP/2 Signalling MSU”** shall mean MSUs, which are originated by the Service User. Tata Communications to deliver HTTP/2 traffic to roaming partners of Service User.
- vi. **“International Gateway Provider” or “IGP”** shall mean the international carrier providing to a mobile operator Signalling services.
- vii. **“Logical interface”** shall mean a virtual LAN dedicated to HTTP/2 signaling customer traffic.
- viii. **“Minimum Monthly Service Fees”** shall mean the minimum monthly recurring Service Fees for the Service as set out in the Order Form.
- ix. **“Multiprotocol Label Switching” or “MPLS”** is an IETF initiative that integrates Layer 2 information about network links (bandwidth, latency, utilization) into Layer 3 (IP) within a particular autonomous system (or ISP) in order to simplify and improve IP-packet exchange.
- x. **“Network-to-network Interface” or “NNI”** is an interface which specifies signaling and management functions between two networks. NNI circuit can be used for interconnection of either signalling (e.g. SS7) or IP (e.g. MPLS).
- xi. **“NRC”** shall mean the non-recurring charges to be made by the Customer for installing, commissioning and provisioning of the Service as set out in the Order Form.
- xii. **“Signaling Partners” or “Roaming Partners”** shall mean the Destinations with whom Customer has elected to exchange signalling traffic and constitutes authorized Destinations by the Customer.
- xiii. **“Service Outage”** shall mean a total loss of signaling transport impacting the Customer's entire roaming traffic that is based upon a failure of Supplier's network but excluding Planned Interruptions of Service.
- xiv. **“Service Outage Credit”** shall mean the service credit further described in Service Schedule Annex-1.
- xv. **“End User”** shall mean any person or entity deriving or making use of the Services through Customer including but not limited to, Customer, an Affiliate of Customer or a customer of Customer.

1.4 IPX DATA ROAMING SERVICE

1.4.1 DEFINITIONS

- i. **“GRX”** means GPRS roaming exchange service.
- ii. **“GRX Provider”** means an IPX provider that offers GRX services only.
- iii. **“IP”** means Internet Protocol.
- iv. **“IPX” or “IP Packet eXchange”** means a telecommunications interconnection model for the exchange of IP based services between customers of separate mobile and fixed operators as well as other types of service providers.
- v. **“IPX Provider”** means a provider that offer IPX services.
- vi. **“Service Interconnection Point” or “SIP”** means the logical or physical element which acts as the demarcation point between the Customer's domain and the Supplier's domain, representing the point at which Service is available and specific Service level targets are committed and measured.
- vii. **“End User”** shall mean any person or entity deriving or making use of the Services through Customer including but not limited to, Customer, an Affiliate of Customer or a customer of Customer.
- viii. **“Access Port”** means the access point to which the Customer is connected to the Supplier Network via a provider edge router, and which is the Service Access Point for the delivery of Unmanaged Service to the Customer.
- ix. **“Backbone Core”** means all equipment, including routers and circuits, between Supplier's core routers.
- x. **“Business Day”** means any day other than Saturday, Sunday or a day which is a public holiday in the country where the Service is provided.
- xi. **“Business Hour”** means any hour from 9am to 5pm on a Business Day.
- xii. **“Class of Service” or “CoS”** means the priority of the IP packets that can be set and sent to Supplier Network.. The different Class of Service determines different prioritization of the traffic on the Supplier Network and hence determines the credits available in the Packet Delivery, Round Trip Delay and Jitter targets.
- xiii. Table below shows the correspondence between any CoS in case of 6 CoS or 4 CoS NNI.

Diffserv PHB	6 CoS	4 NNI CoS
EF	1	1
AF41	2	NA
AF31	3	2
AF21	4	3
AF11	5	3
BE	6	4

- xiv. **"Class of Service Package"** means predetermined packages of Classes of Service and which is a standard of service ordered by the Customer as set out in the Customer Order Form.
- xv. **"Customer Premises Equipment"** or **"CPE"** – shall mean equipment provided by Customer or Supplier and used in conjunction with the Supplier Network in order to receive the Service.
- xvi. **"DNS"** means the Domain Name System service for access point name (**"APN"**) name resolution.
- xvii. **"End to End Monitoring"** means the monitoring of the Service level targets from the Customer Site to another Customer Site including Local Loop and CPE.
- xviii. **"Fault Isolation"** means the process of finding the cause of an identified or reported fault so as to take the corrective measures.
- xix. **"Fault Reporting"** means the process of reporting or notifying about an identified fault with reference to the SAP of a Service by Supplier to Customer.
- xx. **"IPX Transport"** means the service element which enables Customer to gain connectivity and physical access to Supplier's IPX network/platforms via CPE and local loop. IPX Transport is a mandatory prerequisite for the provisioning of Transport, VAS and Managed Service Group related Services. IPX Transport provides connectivity based upon CoS and resiliency options set out in the relevant Customer Order Form.
- xxi. **"Jitter"** (or inter-packet differential arrival delay) means the variation between packets in their deviation from the ideal instant as they traverse the Supplier Network.
- xxii. **"Monthly Recurring Charge"** or **"MRC"** shall mean the monthly recurring charges for the Service as set out in the Customer Order Form.
- xxiii. **"Mean Time to Restore"** or **"MTTR"** is the average time to restore service for a specific connection during Service Outage(s). The length of all Service Outages related to Customer is totaled at the end of the billing month and is divided by the total number of Trouble Tickets opened by Customer for that month.
- xxiv. **"Network Monitoring"** means the monitoring of the Service level targets from the Supplier Network excluding Local Loop and CPE.
- xxv. **"Non-Recurring Charge"** or **"NRC"** shall mean the one-time non-recurring charges to be made by the Supplier for installing, commissioning and provisioning of the Service as set out in the Customer Order Form.
- xxvi. **"Outage Classifications"** is defined as the priority as it relates to the severity of a particular Service Outage.
- xxvii. **"Packet Loss"** means the unsuccessful delivery of accepted IP packets, marked with specified COS, from Supplier Network to the SAPs.
- xxviii. **"Peering"** is defined as the interconnection of the IPX Transport Service with an equivalent service provided by a number of third party service provider.
- xxix. **"Planned Maintenance"** means any preventative, routine or scheduled maintenance which is performed with regard to the IPX Transport Service, the Supplier Network or any component thereof, which Supplier or its agents reasonably believe is necessary in order to maintain the Service or prevent or remedy a defect which may affect Customer's use or access to the Services. Supplier shall endeavor to give Customer at least seven (7) day notice of any Planned Maintenance event.
- xxx. **"PoP"** means Supplier Point of Presence.
- xxxi. **"Qualifying Incidents"** shall mean the incidents for which Customer raises a Trouble Ticket and which are confirmed by Supplier as a fault or Service degradation or an incident where a Trouble Ticket is raised by Supplier.
- xxxii. **"Qualified Down Time"** means that portion of a Qualifying Incident that is not an Excused Outage.
- xxxiii. **"Round Trip Delay"** or **"Latency"** means the average time taken by a packet to traverse from one Service Access Point to another and back to the first one.

- xxxiv. **"Service Access Point" or "SAP"** means the logical or physical element which acts as the demarcation point between the Customer's domain and the Supplier's domain, representing the point at which Service is available and specific Service level targets are committed and measured.
- xxxv. **"Service Availability"** means the percentage of time the Supplier Network is available for Service at the Service Access Point.
- xxxvi. **"Service Outage Credits"** shall mean the credits provided by Supplier to Customer for Service Unavailability or failure to meet other Service level targets as set out in Service Schedule Annex-2.
- xxxvii. **"Service Outage"** means an instance when the Customer is unable to convey traffic to one (1) or more Sites via the Supplier Network (other than an Excused Outage) which results in Service Unavailability.
- xxxviii. **"Service Unavailability"** means the duration of any Qualified Down Time experienced at a Service Access Point
- xxxix. **"Site" or "Managed Site"** shall mean the site owned or controlled by the Customer which is directly connected to Supplier's PoP and which hosts a physical element(s) which is managed by Supplier as set out in the Customer Order Form.
- xl. **"Tier 1 PoP", "Tier 2 PoP" and "NNI PoP (Partner NNI)"** means a PoP so listed in the Customer Order Form or the Appendix.
- xli. **"Time To Restore" or "TTR"** means the total time taken to resolve a Severity 1 connectivity fault for a particular Qualifying Incident exhibited at a SAP.
- xlii. **"Trouble Ticket"** means the official method used by Customer to advise Supplier of a potential Service Outage.
- xlili. **"WAN Interface"** means the physical interface of the CPE, at which the Local Loop is terminated, connected to the Supplier Network.
 - a. **"IPX Transport IPSec BackupConnection"** is a flavor of the Extended Access Service when it is used to provide a secondary IPX Dedicated solution at a Site with a primary IPX solution that can be based on a IPX Transport Service (using a Leased Line) or an Extended Access Service.
 - b. **"IPSec" (Internet Protocol Security)** means a set of IP security standards that comprises a tunnel protocol that employs authentication, encryption, and non-repudiation services to ensure the secure and confidential delivery of IP data transported inside IPSec packets across a public (Internet) IP network.
 - c. **"Leased Line"** means a dedicated point to point data connection, used to transmit digital data between Customer's premise and a data network provider PoP. Dedicated means that the bandwidth is reserved for the Customer and available at all time between the two ends of the Leased Line. As opposed to Broadband Circuits that provide shared bandwidth.
 - d. **"Qualifying Incidents"** shall mean the incidents for which Customer raises a Trouble Ticket and which are confirmed by Supplier as a fault or Service degradation or an incident where a Trouble Ticket is raised by Supplier.
 - e. **"Service Gateway"** means the designated Supplier router terminating the IPSec tunnels and mapping IP traffic from the corresponding remote Customer Sites to the IPX Transport Service.
 - f. **"Tier 1 Countries"** are Australia, Austria, Belgium, Canada, Cyprus, Denmark, Finland, France, Germany, Hong Kong, Ireland, Japan, Luxembourg, Malta, Monaco, Netherlands, Norway, Poland, Portugal, Singapore, South Korea, Spain, Sweden, Switzerland, Taiwan, United Kingdom and the United States.
 - g. **"Tier 2 Countries"** are Bahrain, Bolivia, Brazil, Chile, Croatia, Czech Republic, Ecuador, Egypt, Estonia, Greece, Hungary, Israel, Italy, Latvia, Lithuania, Malaysia, Mexico, New Zealand, Peru, Russia (Moscow, St Petersburg), Slovakia, Slovenia, Saudi Arabia, South Africa, Turkey and United Arab Emirates.

VALUE ADDED SERVICES (VAS)

1.1 Wireless Global Roaming (WGR) SERVICE

1.1.1 DEFINITIONS

- i. **"CDMA"** shall mean Code Division Multiple Access
- ii. **"Destinations"** shall mean the GSM Network Operators or the ESMR Network Operators or the UMTS network operator which are provided by Supplier with a SS7 transport, routing management and conversion service involving the carriage of MSUs, similar to the Service. Supplier Destinations are attached hereto as Schedules 1 and 4 and incorporated by reference herein.
- iii. **"ESMR"** shall mean enhanced specialized mobile radio.
- iv. **"GCSC"** shall mean Supplier' Global Customer Service Centre.

- v. **"Global Title Translation"** shall mean the use of the signaling connection control part (SCCP) of the SS7 protocol to route a MSU.
- vi. **"GSM"** shall mean global system for mobile communications. g) **"GSM Network Operator"** shall mean any operator of a network using the GSM standard over the 850 MHz, 900 MHz, 1800 MHz or 1900 MHz frequency band.
- vii. **"ISC"** shall mean international switching center.
- viii. **"Major Service Upgrade"** shall mean any upgrade made by Supplier to the Service which requires Supplier to perform any significant change to the facilities and auxiliary equipment used by Supplier in the provision of the Service and shall be considered as a Hazardous Situation.
- ix. **"MSU"** shall mean Message Signaling Unit and shall correspond to SS7 traffic bearing a TCAP MAP or CAP payload. For the purpose of this Contract, SS7 traffic used for network maintenance and management is not considered as MSUs from the billing standpoint.
- x. **"MTP"** shall mean message transfer point.
- xi. **"Outgoing MSUs"** shall mean MSUs, associated with the Service, which are originated by the Customer requiring Supplier to perform Global Title Translation.
- xii. **"Roaming Arrangements"** shall mean the necessary bilateral roaming arrangements between the Customer and the Destinations.
- xiii. **"Service Outage"** shall mean an interruption of service of a commercial roaming relationship between Customer and a destination that is based upon a failure of the Supplier network, but excluding Planned Interruptions of Service.
- xiv. **"SMS"** shall mean Short Message Service
- xv. **"SS7"** shall mean the signaling system 7 common channel out of band signaling protocol developed by the International Telecommunications Union - Technical Standards and the American National Standards Institute ("ANSI").
- xvi. **"STP"** shall mean Signaling Transfer Point.
- xvii. **"Supplier's DPC"** shall mean Supplier' destination point code, which corresponds to 3-005-1.
- xviii. **"UMTS"** shall mean Universal Mobile Telecommunication System.
- xix. **"UTC"** shall mean Universal Time Coordinated.
- xx. **"ROMINT"** shall mean Roaming International that refers to roaming signalling conversion between ANSI and ITU plane.
- xxi. **"ROMNAT"** shall mean Roaming National that refers to roaming signalling between ANSI and ANSI OR ITU and ITU plane

1.2 VoLTE Roaming Interworking Service

1.2.1 DEFINITIONS

- i) **"Home Network"** shall mean a mobile network operator service provider in which subscriber permanently registered.
- ii) **"Visitor Network"** shall mean a mobile network operator service provider in which subscriber temporarily registered outside Home Network.
- iii) **"Roamers"** shall mean subscribers travelling from Home Network to Visitor Network.
- iv) **"VoLTE"** shall mean Voice over LTE (Long Term Evolution)
- v) **"VoLTE Roaming Interworking"** or **"VoLTE IWF"** shall refer to the Supplier's network entity residing in the IGP's domain that enables interworking between VoLTE registration on Customer's network and circuit switch registration on the Home Network side and enables voice and Short Messaging Service (SMS) services for inbound Roamers of Customer who are travelling from 2G/ 3G/ 4G Home Networks with VoLTE Roaming capable devices and LTE roaming enabled Subscriber Identity Module (SIM) or interworking between circuit switch registration of Customer's network and VoLTE registration on Visitor Network side and enables voice and SMS services for outbound Roamers of Customer who are travelling from 2G/3G/4G Home Network with VoLTE Roaming capable devices and LTE roaming enabled SIM.
- vi) **"VoLTE IWF"** shall mean the VoLTE Interworking Function.
- vii) **"Unique Subscriber Count"** shall mean number of Unique inbound Roamers registered daily in Supplier's VoLTE IWF or Unique outbound Roamers registered daily in Supplier's VoLTE IWF. Monthly invoice shall contain sum of daily Unique Subscriber Count for that particular month.
- viii) **"International Gateway Provider"** or **"IGP"** shall mean the international carrier providing to a mobile operator with a 2G/ 3G/ 4G/ 5G roaming signaling service similar to the Service provided under the Service Schedule.

- ix) **“Minimum Monthly Service Fees”** shall mean the minimum monthly recurring Service Fees for the Service as set out in the Order Form.
- x) **“Multiprotocol Label Switching”** or **“MPLS”** is an IETF initiative that integrates Layer 2 information about network links (bandwidth, latency, utilization) into Layer 3 (IP) within a particular autonomous system (or ISP) in order to simplify and improve IP-packet exchange.
- xi) **“Network-to-network Interface”** or **“NNI”** is an interface which specifies signaling and management functions between two networks. NNI circuit can be used for interconnection of either signalling (e.g. SS7) or IP (e.g. MPLS).
- xii) **“NRC”** shall mean the non-recurring charges to be made by the Customer for installing, commissioning and provisioning of the Service as set out in the Order Form.
- xiii) **“Signaling Partners”** shall mean the destinations with whom Customer has elected to exchange 2G/ 3G/ 4G traffic and constitutes authorized destinations by the Customer.
- xiv) **“Service Outage”** shall mean a total loss of signaling transport impacting the Customer's entire roaming traffic that is based upon a failure of Supplier's network but excluding Planned Interruptions of Service.
- xv) **“Service Outage Credit”** shall mean the service credit further described in Service Schedule Annex-1.
- xvi) **“Customer”** shall mean the service user whose inbound or outbound Roamers shall use VoLTE interworking service.
- xvii) **“Governmental Authority”** shall mean any governmental or quasi-governmental body, whether foreign or domestic, including any department, agency, commission, bureau or other administrative or regulatory bodies, courts, public utilities and communications authorities (e.g., the U.S. Federal Communications Commission, USAC or Telecom Regulation Authority of India).
- xviii) **“End User”** shall mean any person or entity deriving or making use of the Services through Customer including but not limited to, Customer, an Affiliate of Customer or a customer of Customer.

1.3 MANAGED SMS FIREWALL SERVICES

1.3.1 DEFINITIONS

- i. **A2P SMS** shall mean SMS originating from various applications and sent over SS7, targeted to be sent to a person on his/her MSISDN.
- ii. **Hosted MSF Platform** shall mean the facilities, equipment and hardware, operating system, processes, storage interfaces, and the Managed SMS Firewall application used by Supplier as an Application Service Provider in providing the MSF Service.
- iii. **Fraud Detection:** Fraud is detected based on the rules agreed with the Customer and configured on the platform. Managed SMS firewall does not identify fraud scenario on its own if no rules are configured.
- iv. **MO SMS** shall mean Mobile Originated Forward SMS message.
- v. **MT SMS** shall mean Mobile Terminated Forward SMS message.
- vi. **Online Self-Care** shall mean the web based portal linked to Supplier' customer zone portal that can be used for viewing reports of SMS firewall application, viewing SMS rules configured for the customer and view blacklist/whitelist.
- vii. **Selected Location** shall mean the origination or destination address of a message applicable for applying rules of SMS filtering.
- viii. **Selection Criteria** shall mean the preference parameters used for processing the MSF Service.
- ix. **Service Outage** shall mean the loss of SMS filtering ability across all monitored SMS ORIGINATIONS.
- x. **SMS Count Tier** shall mean the tier of number of incoming SMS received by the MNO on International SCCP on Tata Communication network in a calendar month.
- xi. **SMS ORIGINATIONS** shall mean the Public Land Mobile Networks of the originating party of the SRI_SM, MO SMS or MT SMS message.
- xii. **Sources of SMS traffic** shall mean the originating or routing points of SMS in SMS ORIGINATIONS, IGP's, SMS Hubs or A2P SMS providers.
- xiii. **SRI_SM** shall mean Send Routing Information for SMS.
- xiv. **“Governmental Authority”** shall mean any governmental or quasi-governmental body, whether foreign or domestic, including any department, agency, commission, bureau or other administrative or regulatory bodies, courts, public utilities and communications authorities (e.g., the U.S. Federal Communications Commission, USAC or Telecom Regulation Authority of India).
- xv. **“End User”** shall mean any person or entity deriving or making use of the Services through Customer including but not limited to, Customer, an Affiliate of Customer or a customer of Customer.

1.4 SoR STEERING OF ROAMING (MANAGED ROAMING SERVICES)

1.4.1 DEFINITIONS

- i. **“Hosted ASP Platform”** shall mean the facilities, equipment and hardware, operating system, processes, storage interfaces, and the Managed Roaming application used by Supplier as an Application Service Provider in providing the MR Service
- ii. **“HPLMN”** shall mean Home Public Land Mobile Network. In this case it also indicates the Customer’s mobile network.
- iii. **“Location Update” or “LU”** shall mean the incoming location update message sent by the VPLMN and destined for the Customer’s HPLMN as defined by the 3GPP GSM standard, and intercepted by the Service.
- iv. **“Outbound Roamers”** shall mean the Customer subscribers out-roaming into VPLMNs.
- v. **“Outgoing ISD message”** shall mean the outgoing Insert Subscriber Data message sent by the service’s user HPLMN and destined for their roaming VPLMN partners as defined by the 3GPP GSM standard, and intercepted by the Service.
- vi. **“Preferred VPLMN”** shall mean the VPLMN selected as one of the preference by the Customer and configured in the preference list.
- vii. **“Registration Attempt”** shall mean one tentative to attempt to detect the first available preferred VPLMN roaming partner on which an Outbound Roamer of the Service’s User can be registered.
- viii. **“Selected Location”** shall mean the location i.e. country, city, region, state or other geographical arrangement selected by the Customer where the preferred VPLMN are located
- ix. **“Selection Criteria”** shall mean the preference parameters used for processing the MR Service.
- x. **“Service Outage”** shall mean mean the loss of steering ability across all steered countries.
- xi. **“VPLMN”** shall mean Visited Public Land Mobile Network
- xii. **“WSMS”** shall mean Welcome SMS Service.
- xiii. **“BRG”** shall mean Border Roaming Gateway Service.
- xiv. **“ULA”** shall mean Update Location Answer diameter protocol message.
- xv. **“ULR”** shall mean Update Location Request diameter protocol message.
- xvi. **“APN”** shall mean Access Point Name.
- xvii. **“M2M”** shall mean Machine to Machine.
- xviii. **“IoT”** shall mean Internet of Things.
- xix. **“VLR”** shall mean Visitor Location Register.
- xx. **“IMSI”** shall mean International Mobile Subscriber Identity
- xxi. **“SMPP”** shall mean Short Message Peer-to-Peer is an open, industry-standard protocol designed for the transfer of short message data between External Short Messaging Entities (ESMEs), Routing Entities (REs), and Short Message Service Centers (SMSCs). It is widely used in the telecommunications industry to facilitate the exchange of SMS messages, including EMS, voicemail notifications, Cell Broadcasts, WAP messages, USSD messages, and more.
- xxii. **“SMS”** shall mean Short Message Service a system that enables mobile phone or IoT device users to send and receive text messages.
- xxiii. **“FSM-MT”** shall mean SS7 MAP Forward Short Message for SMS MT (Mobile Terminated).
- xxiv. **“MAP”** shall mean Mobile Application Part is a protocol that typically runs on top of the SS7 protocol.
- xxv. **“GUI”** shall mean Graphical User Interface.
- xxvi. **“Governmental Authority”** shall mean any governmental or quasi-governmental body, whether foreign or domestic, including any department, agency, commission, bureau or other administrative or regulatory bodies, courts, public utilities and communications authorities (e.g., the U.S. Federal Communications Commission, USAC or Telecom Regulation Authority of India).
- xxvii. **“End User”** shall mean any person or entity deriving or making use of the Services through Customer including but not limited to, Customer, an Affiliate of Customer or a customer of Customer.

1.5 ROAMPULSE ADVANCED MONITORING AND REPORTING

1.5.1 DEFINITIONS

- i. **“Incident”** shall mean an event or occurrence that is not part of the system operation and which causes or may cause an interruption to or reduction in the quality of that system operation.
- ii. **“Normal Operation”** shall mean when the system is functioning as before a reported Incident occurred.

- iii. **“Overusage”** shall mean exceeding the contractually allocated number of licensed users concurrently using the system. This occurs when Service User use is in excess of the committed user licenses.
- iv. **“Patch Release”** shall mean maintenance fixes that Tata Communications releases to the Service User from time to time pursuant to the terms of this Agreement.
- v. **“Personal Information”** means any information or set of information relating to a person that identifies such person or could be used to identify such person, including without limitation, a person's name, address, telephone number, or email address;
- vi. **“Third Party Product(s)”** means any software and/or hardware that are either; i) not included as an integral part of the Service that are supplied to Customer under this Annex, or ii) that are not produced by Supplier but which are provided on a resold or white-label basis. Third Party Products may include hardware (other than CPE ordered using Supplier's CPE Addendum), open source software and other related products.
- vii. **“User”** shall mean Services User and its users.
- viii. **“Governmental Authority”** shall mean any governmental or quasi-governmental body, whether foreign or domestic, including any department, agency, commission, bureau or other administrative or regulatory bodies, courts, public utilities and communications authorities (e.g., the U.S. Federal Communications Commission, USAC or Telecom Regulation Authority of India).
- ix. **“End User”** shall mean any person or entity deriving or making use of the Services through Customer including but not limited to, Customer, an Affiliate of Customer or a customer of Customer.

