

PUBLICATION 1 SERVICE DESCRIPTION FOR BUSINESS VPN SATELLITE SERVICE – MARITIME SHARED

- 1.1 Definition.** Capitalized terms used and not otherwise defined in this Service Description will have the meanings ascribed to them in the Service Level Agreement for Business VPN Satellite Service – Maritime Shared, Specific Conditions for Satellite Services, or elsewhere in the Agreement.
- "ABS" means Automatic Beam Switching.
- "ACM" means Automatic Code Modulation.
- "CIR" means Committed Information Rate.
- "D-TDMA" means Deterministic-TDMA.
- "DVB-S2" means Digital Video Broadcasting - Satellite - Second Generation.
- "IP TDMA" means Internet Protocol Time Division Multiple Access.
- "IVR" means Interactive Voice Response.
- "QoS" means Quality of Service.
- "Satellite Equipment" will have the meaning defined in the Specific Conditions for Satellite Services.
- "Service" means Business VPN Satellite Service – Maritime Shared.
- "SLO" means performance level objective.
- "TCP/IP" means Transmission Control Protocol/Internet Protocol.
- "TDM" means Time Division Multiplexed.
- 1.2 Overview.** The Orange Service provides network connectivity to movable (e.g. sea-going vessels) and non-movable (e.g. fixed offshore platform) Locations where other network connectivity solutions are inaccessible, highly degraded due to sea conditions, or other reasons. Service is only available for use with an Orange Network Service, which is a separate service and described in separate Service Description.
- 1.3 Standard Service Elements**
- 1.3.1 Types of Service.** There are three (3) types of Service:
- (a) **Standard Service:** With Standard Service, Customer's satellite bandwidth is shared between multiple Orange customers and multiple Locations. Standard Service is offered both on C and Ku band microwave frequencies. The microwave frequency bands are shared between Locations using IP TDMA technology. Orange offers an SLO with the Standard Service, as published in the Publication (unless the Parties attach the SLO to this Agreement).
 - (b) **Extended Service:** With Extended Service, Orange provides a managed solution that shares satellite capacity among Customer's remote Locations and locations of other Orange customers. Extended Service is offered both on C and Ku band microwave frequency. The microwave frequency bands are shared between Locations using IP TDMA technology. Orange offers an SLA with the Extended Service, as published in the Publication (unless the Parties attach the SLA to this Agreement).
 - (c) **Premium Service:** With Premium Service, Customer's satellite bandwidth is shared between multiple remote Customer Locations, but not with other Orange customers. Premium Service is offered both on C and Ku band microwave frequency. The microwave frequency bands are shared between Locations using IP TDMA technology. Orange offers an SLA with the Premium Service, as published in the Publication (unless the Parties attach the SLA to this Agreement).
- 1.3.2 Technology.** The Service is provided by Orange on a satellite based TCP/IP network with a star topology (a single hub Location to one or more remote Locations). A TDM broadcast downstream channel from a central hub Location is shared by a number of remote Locations. Hub and remote Location technologies are based on iDirect satellite equipment provided by Orange or Customer by third parties, which shall be an intended third-party beneficiary of Orange's rights under the Agreement solely with respect to the Service. The Locations transmit to the hub on shared upstream carriers using D-TDMA based on dynamic time plan slot assignment generated by the protocol processor. The Business VPN Satellite Service - Maritime Shared is provided by Orange from multiple teleports and satellite coverage zones. The asymmetric full duplex transmission is based on: (a) TDM in the hub to remote Location direction (outbound, downstream, or forward carrier) based on broadcast; (b) D-TDMA in the remote Location to hub direction (inbound, upstream, or return carrier); (c) Dynamic bandwidth provisioning (bandwidth-on-demand); (d) DVB-S2 standard together with ACM; (e) TCP acceleration in both directions; and (f) QoS control.
- The Service could provide fixed and dedicated capacity for IP applications via a network of two-way satellite terminals that operate in a star configuration.
- 1.3.3 Bandwidth.** Bandwidth is made available independently in the hub to remote Location direction (outbound, downstream, or forward carrier) or in the remote Location to hub direction (inbound, upstream, or return carrier) or in both directions at the same time. A bi-directional call between two remote terminals implies the use of bandwidth between Terminal 1 and the hub and between the hub and Terminal 2, and vice-versa. In such case, twice the amount of satellite capacity is used by a double satellite hop.
- 1.3.4 Forward and Return Carrier.** The forward carrier is a TDM-based transmission. For the Premium Service, the relevant forward carrier or subpart of it is devoted to the Customer network. This means that the entire capacity in the forward carrier or subpart of it is reserved for Customer and is independent from other Orange customers' networks.

For the Standard, Extended, and Premium Services, the forward carrier is shared by Customer with other Orange customers.

The return carrier link is a D-TDMA based transmission. Each Customer network can run with a single or multiple return carrier configuration depending on the network sizing requirements. For Premium Service, the return carrier or subpart of it is fully devoted only to a single specific Customer network. For the Standard and Extended Services, the return carrier is shared by Customer with other Orange customers.

- 1.3.5 **Service Features and Functions.** The Service is provided with a range of available forward carrier and return carrier sizes from which Customer may choose. The satellite space segment is dedicated to Customer for the Premium Service, but shared among Customer's Locations for the same VPN using the Orange Network.

Customer may configure the Service Locations with dynamic CIR on available bandwidth or with no dynamic CIR. The Locations with dynamic CIR will take priority over other Locations. In addition to the transmission delay associated with satellite access services, contention on the space segment may generate delay variation (i.e. jitter), and an overhead is introduced on the return direction of data (i.e. from the remote to the hub Location), which also will affect transmission. CIR features are provided to Extended and Premium Services.

- 1.4 **Optional Service Features.** The following billable optional service features may be available with the Service upon the prior written approval of Orange, which will be based on specific tests and validations conducted by Orange and applicable laws:

- A contingency option of bundled Satellite Equipment (excluding the antenna notwithstanding that the definition of Satellite Equipment includes antenna), where the primary Satellite Equipment is secured by the secondary indoor unit and outdoor unit when failure occurs on the primary Satellite Equipment;
- Internet access may be configured on a non-satellite connected Location;
- IPSec over the Orange Network;
- Multi VPN;
- ABS permits a movable Location to roam by switching between multiple satellite beams under the following conditions:
 - Each movable Location will be identified by a unique ID.
 - No more than one satellite beam may be active at a time.
 - A specific configuration for each satellite beam is required to allow roaming.
 - Roaming is only possible between beams of the same network management system and is governed by the modem, requires a compatible remote VSAT system (e.g. antenna, low noise block converter, antenna control unit), and remote management access.
- Mission-critical sites; and
- Resiliency service options.

- 1.5 **Voice Pre-Paid Service Option.** In addition to the options described in Clause 1.4 (Optional Service Features) above, Customer may order the Voice Pre-Paid Service Option as described in this Clause 1.5, subject to additional Charges.

- 1.5.1 **Overview.** The Voice Pre-Paid Service Option is provided through Orange by a third-party vendor. Customer may order this billable option for the crew members or other persons on board Customer's vessel who may desire the Service. The Voice Pre-Paid Service Option is available only for Locations that have at least one (1) physical FXS phone installed on the vessel that is capable of being set up to receive this service option.

- 1.5.2 **Features.** Each User will have a personal, individualized PIN allowing access to the Voice Pre-Paid Service Option platform. Customer is responsible for ordering the PINs for its crew and allocating them accordingly. Each User may prepay a credit in an amount of his or her choosing to be used with the Voice Pre-Paid Service Option. Each minute will be charged against the credit according to the destination of the User's call. Users will be able to determine via an IVR feature what the amount of his or her credit is remaining and, if desired, to refill the time credit. Unless prohibited by law or regulation, Users may place calls to anywhere in the world, regardless of the location or itinerary of the vessel.

- 1.5.3 **Charges.** The Charges for the Voice Pre-Paid Service Option consist of a one-time, pre-paid charge. Users may prepay in the form of a credit as much or as little as they desire. Charges per minute will vary depending on the destination of the call. Charges for this option are in addition to the Charges for the Business VPN Satellite Service.

- 1.6 **Cold Stack Option.** In addition to the options described in Clause 1.4 (Optional Service Features) and Clause 1.5 (Voice Pre-Paid Service Option) above, Customer may order the billable cold stack option (the "Cold Stack Option") as described in this Clause 1.6.

- 1.6.1 **Overview.** The Cold Stack Option is available when a vessel needs to be in "stack" (a/k/a "lay-up") for a period of time for maintenance, repairs, or to reduce operating costs. Orange provides this option only during "cold stack" (i.e. a vessel that has been laid up with little or no crew and no machinery operating, but which may have either a temporary on-deck generator or otherwise is connected to on-shore power through external cables). Customer may exercise this option only for a cold stack period of six (6) consecutive months or less in any consecutive 12 month period. Unless as otherwise prohibited by the Agreement, the Service Term of the relevant Order for this Service will be extended for the duration of time that a vessel is in cold stack.

- 1.6.2 **Features.** In order to exercise this option, the Service must be, and remain installed in at least five (5) vessels during the time that Orange provides the Cold Stack Option. No more than 20% of Customer's vessels may exercise this option at any given time. The Cold Stack Option may not be ordered anytime at Customer's discretion during the Term of the Agreement. Rather, Customer may order this option only on or before the commencement date of the Service Term of the relevant Order for the Service associated with the vessel and for which Customer wants to have this option available for such vessel. The Cold Stack Option may be exercised by Customer during the Service Term, subject to terms and conditions herein, by providing Orange with at least fifteen (15) days advance written notice prior to the commencement date of the cold stack period. Customer must specify in its written notice the duration of the cold stack period strictly in accordance herewith. Proactive monitoring of the Service is not available to Customer during the cold stack period.
- 1.6.3 **Charges.** In addition to the monthly recurring Charges for the Service (which are comprised of the Charges for the satellite space segment and the Charges for the Satellite Equipment), Customer shall pay to Orange a monthly recurring Charge in the amount of \$150 for the Cold Stack Option during the Service Term (including during the cold stack period) of the Service. An additional one-time Charge in the amount of \$200 applies for the activation of the Cold Stack Option and an additional one-time Charge in the amount of \$200 applies for the deactivation of the Cold Stack Option. Additionally, Customer must pay:
- (a) For a cold stack period of up to 3 months, Customer shall pay to Orange for each month during the cold stack period an amount equal to 3% of the monthly recurring Charge for the portion of the Service that is applicable to the satellite space segment. Such additional 3% monthly recurring satellite space segment Charge will cease to apply after the cold stack period.
 - (b) For a cold stack period of 3 to 6 months, Customer shall pay to Orange for each month during the cold stack period an amount equal to 6% of the monthly recurring Charge for the portion of the Service that is applicable to the satellite space segment. Such additional 6% monthly recurring satellite space segment Charge will cease to apply after the cold stack period.
- 1.7 **Security.** The Satellite Equipment includes an embedded encryption chip (e.g. 256 encryption), which may be activated only upon Customer's request and subject to an additional monthly recurring Charges. Notwithstanding the foregoing, however:
- NEITHER ORANGE NOR ITS THIRD-PARTY SUPPLIERS WARRANT OR GUARANTEE THE SECURITY OF CUSTOMER'S SATELLITE TRANSMISSIONS USING THE ENCRYPTION CHIP OR OTHERWISE. CUSTOMER ACKNOWLEDGES THAT UNAUTHORIZED INTERCEPTION OF SATELLITE TRANSMISSIONS MAY OCCUR AND ORANGE WILL NOT BE LIABLE FOR ANY SUCH INTERCEPTION OR OTHER BREACH OF SECURITY RELATING TO ANY SATELLITE TRANSMISSION. CUSTOMER WILL BE SOLELY RESPONSIBLE FOR ITS OWN NETWORK SECURITY POLICY AND SECURITY VIOLATION RESPONSE PROCEDURES.
- 1.8 **Acceptance Testing.** Upon completion of the physical installation of the Service, Orange will commence acceptance testing to confirm that all aspects of the Service are operational.

END OF SERVICE DESCRIPTION FOR BUSINESS VPN SATELLITE SERVICE – MARITIME SHARED