

PUBLICATION 1 SERVICE DESCRIPTION FOR IOT MANAGED GLOBAL CONNECTIVITY: IOT CONNECT EXPRESS SERVICES

1.1 Service Definition

The IoT Connect Express service (the "**Service**") is subject to the Specific Conditions for Managed Global Connectivity; IOT Connect Advanced Services. The Service provides Customer with end-to-end connectivity between its fleet of Machines equipped with SIM Cards and a central server:

- regardless of the country where the SIM Card is located (as long as there are existing roaming agreements in place permitting the provision of IOT Connect Express Service with the in-country operators), and
- whether the Machine is moving or standing still.

The Service can be used directly by Customer for its own needs (business operations and process, monitoring, control, etc.) or can be integrated by Customer in a turn-key solution offering Value Added Solutions and application to end users.

Capitalized terms used and not otherwise defined in this Service Description will have the meanings ascribed to them elsewhere in the Agreement.

1.2 Service Overview

The Service includes the following elements:

- the supply of SIM Cards and their provisioning;
- the collection, transport and delivery of Customer data on Mobile Networks;
- Subject to Clause 1.8, the end-to-end communication set-up and operation between the SIM Cards and Customer central server;
- the access to an M2M connectivity Management Platform (M2M Portal and APIs) to operate and manage the Service and monitor SIM Cards' activity;
- IoT Service Managed Initial which will assist Customer for commercial and technical questions.

The Customer may order optional elements that may be subject to additional charges:

- a secured access between Customer central server location and Orange core network location, as described in Clause 1.8;
- the connection to Orange SMS server (SMS-C) to exchange texts between the Customer application server and Machines, as described in Clause 1.8;
- the support of a dedicated Service Manager as Single Point of Contact for Customer;
- the creation of a test or prototype phase allowing Customer to start in pre-production and anticipate solution integration.

The Service does not include:

- the supply of devices and/or communication modems to Customer;
- the integration of the Service into a Customer Value Added Solution or Customer IT systems; and/or
- the supply of the connectivity between the Customer central servers and the break-out of Orange Mobile Network.

1.3 IoT SIM Cards

1.3.1 IoT Dedicated SIM Cards & Chips

For mass production, Orange offers a wide range of SIM Card or Chip form-factors and specifications. Customer will select the type of SIM Card(s) based on its own requirements. A minimum order of 1,000 SIM cards batch applies.

For pre-production, pilot phase or for test purposes, Customer may order other form factors and quantities. This will be subject to further analysis and/or additional charges.

1.3.2 SIM Cards & Chips Portfolio

The types of SIM Cards that can be provided are:

1.3.2.1 SIM Cards Form-Factor

The M2M SIM Cards are ETSI normalized (TS 102 221) and ROHS compliant.

Standard 2FF / 3FF/ 4FF	Reinforced 2FFR / 3FFR
<ul style="list-style-type: none"> ▪ USIM card (ETSI - TS 102 221). ▪ 64k memory. ▪ SIM cards size: <ul style="list-style-type: none"> ▪ 2FF: 25 x 15 mm ▪ 3FF: 15 x 12 mm ▪ 4FF: 12.3 x 8.8 mm ▪ Operational and Storage Temperature: TS (-25°C to +85°C). 	<ul style="list-style-type: none"> ▪ USIM card (ETSI - TS 102 221). ▪ 64k memory. ▪ SIM cards size: <ul style="list-style-type: none"> ▪ 2FF: 25 x 15 mm ▪ 3FF: 15 x 12 mm ▪ Reinforced plastic (PTFE). ▪ Operational and Storage Temperature: TB (-40°C to +105°C). ▪ Humidity: HA (high humidity).

Standard 2FF / 3FF/ 4FF	Reinforced 2FFR / 3FFR
<ul style="list-style-type: none"> ▪ Fretting Corrosion: FA (connector fretting). ▪ Data Retention Time: RA (10 years at 85°C). ▪ Minimum Updates: UB (500,000 update cycles). 	<ul style="list-style-type: none"> ▪ Fretting Corrosion: FA (connector fretting). ▪ Data Retention Time: RA (10 years at 85°C). ▪ Minimum Updates: UB (500,000 update cycles).

1.3.2.2 **SIM Cards Chip**

The M2M SIM Cards chips are ETSI normalized (TS 102 671) and ROHS compliant.

The format is fully standardized (VQFN-8A), compatible with "pick & place" process, and anti-theft mechanism (soldered and unusable in a standard device).

Basic MFF2	Industrial MFF2	Automotive MFF2
<ul style="list-style-type: none"> ▪ USIM chip (ETSI - TS 102 671). ▪ 64k memory. ▪ SIM chip size: 5 x 6 mm. ▪ Operational and Storage Temperature: TS (-25°C to +85°C). ▪ Data Retention Time: RA (10 years at 85°C). ▪ Minimum Updates: UB (500,000 update cycles). 	<ul style="list-style-type: none"> ▪ USIM chip (ETSI - TS 102 671). ▪ 64k memory. ▪ SIM chip size: 5 x 6 mm. ▪ Operational and Storage Temperature: TB (-40°C to +105°C). ▪ Moisture/Reflow conditions: MA (JEDEC J-STD-020D). ▪ Humidity: HA (high humidity). ▪ Data Retention Time: RA (10 years at 85°C). ▪ Minimum Updates: UB (500,000 update cycles). 	<ul style="list-style-type: none"> ▪ USIM chip (ETSI - TS 102 671). ▪ 128k memory. ▪ SIM chip size: 5 x 6 mm. ▪ Operational and Storage Temperature: TB (-40°C to +105°C). ▪ Moisture/Reflow conditions: MA (JEDEC J-STD-020D). ▪ Humidity: HA (high humidity). ▪ Corrosion: CA (salt atmosphere according to JESD22-A107). ▪ Vibration: VA (automotive vibration according to JESD22-B103). ▪ Shock: SA (automotive shock according to JESD22-B104). ▪ Data Retention Time: RC (15 years at 85°C). ▪ Minimum Updates: UC (1,000,000 update cycles).

1.3.2.3 **SIM Card Settings**

All SIM Cards will be provided with dedicated settings:

SIM Setting	Default Setup	Comment
PIN1 (Personal Identification Number)	Disabled Set to 0000	Option: can be enabled and the code can be changed on demand. PIN blocked after three (3) incorrect attempts.
PUK1 (Personal Unblocking Key)	SIM specific	SIM Card blocked after ten (10) incorrect attempts.
PIN2 (Personal Identification Number)	Enabled Set to 00000000	Option: code can be changed on demand. PIN blocked after three (3) incorrect attempts.
PUK2 (Personal Unblocking Key)	SIM specific.	SIM Card blocked after ten (10) incorrect attempts.
ADN (Abbreviated Dialing Numbers)	2 positions	Can be edited.
SDN (Service Dialing Numbers)	10 positions	Cannot be edited.
FDN (Fixed Dialing Numbers)	2 positions	Can be edited after PIN2 control.
SMS	6 positions	SMS storage can be edited.
PLMN (List of roaming networks to use in priority)	80 positions	List controlled by Orange, cannot be modified by the Customer

1.3.2.4 **SIM Card Shipments**

Orange strongly recommends that Customer establishes a delivery planning in line with its planned production forecasts in order to improve the delivery process and the logistics on the SIM Cards manufacturer’s side. For large volumes, it can facilitate the delivery planning and the resource commitment.

The typical manufacturing lead times before the shipment of SIM Cards, which may vary depending on the SIM Card manufacturer’s workload, are:

- If order is not anticipated (there is no existing stock): around 4-6 weeks;
- If order is anticipated (there is existing stock): around 1 week.

The actual shipment of SIM Cards may take from 48 to 72 hours within Europe, and up to 1 week to the rest of the world. Additional local delays may occur due to tax and customs administration or any specific requirement from Customer.

Shipment of SIM Cards is subject to the laws of the country of destination and export, import and customs laws and regulations (such as the export and re-export controls under the U.S. Export Administration Regulations or similar regulations of the U.S. or any other country) may apply.

1.3.3 **SIM Card Warranty**

SIM Cards have a 36 months warranty starting from the date of receipt of the SIM Cards by the Customer. Upon request from Customer and subject to the Manufacturer’s agreement and/or additional charges, the warranty term may be extended.

The warranty will not apply if Customer does not comply with Orange’s Specific Conditions.

The warranty only covers the SIM Card itself, i.e. Orange will only make available the replacement SIM Card itself. This means, e.g. that the warranty does not cover any logistics costs for the recovery of Machines, nor the cost of removal of the SIM Card from the Machine.

1.4 **SIM Cards Provisioning & Network Features**

1.4.1 **Network Settings**

Orange has defined specific provisioning profiles. Only the agreed profiles are activated in the HLR for the SIM Cards used by Customer. Most of the parameters are provisioned by default and cannot be changed except for some optional features.

The list below gives the standard provisioning profiles of the SIM Cards:

Usage Type / Bearers	SIM Profile(*1)	
	Data Only	Data + Voice
Packet Data (outgoing / incoming) Data mainly used for data transfer from Machines to servers.	Activated	Activated
SMS (Mobile Originated / Mobile Terminated)	Activated	Activated
Voice (Mobile Originated Calls/ Mobile Terminated Calls) Voice mainly used for alarms / security / emergency calls.	Non-activated	Activated

*1 The SIM Cards profile cannot be changed. Should the Customer need a change, Customer will order new Sim cards including the new requested profile.

Common Settings	Provisioning
Different MSISDN per bearer (*2)	Deactivated
Mobile Number Portability	Deactivated
OTA capability (over-the-air remote SIM Card management by the operator)	Activated
Orange Camel Network signaling (used for voice filtering)	Deactivated (change optional)
International Mode	Activated
Commercial List exclusion	Activated
Welcome Messages (SMS welcome messages when entering a new country)	Deactivated
Bill Shock Alert (SMS message received when the billing exceeds a defined amount in roaming)	Deactivated
WHA (payment service using Orange mobile invoice)	Deactivated

*2 ‘Data only’ profile: Data number provisioned and used for Data and SMS traffic, or ‘Data + Voice’ profile: voice number provisioned and used for Data, SMS, and Voice traffic.

Packet Data Settings	Provisioning
Orange shared APN with private IP addresses	Offer related
Orange shared APN with public IP addresses	Offer related (*3)
Customer dedicated/private APN (*4)	Offer related
Multiple APNs : can be used depending on the ability of the device to manage several APNs (*4)	Activated
Multimedia content filtering	Activated
Video Conferencing	Deactivated

*3: The offer of shared APN to the Internet with public IP addresses is restricted due to availability of public IP addresses.

*4: Customer is informed that provisioning shared APN together with dedicated APN to secured data connections may create a breach of security. Customer may request to combine shared and dedicated APN; in this case, Customer is fully aware of the IT security weakness.

Voice Settings	
Barring Roaming Incoming Calls (Block all incoming calls when roaming)	Deactivated (change optional)
CLIP: Calling Line Identification Presentation (incoming call on the device)	Activated
CLIR: Calling Line Identification Restriction (outgoing call from the device)	Activated
Voice Mail	Deactivated
Call Forwarding (from device to another number)	Deactivated (change optional)
Second Call (second call on the device)	Activated (change optional)
Call Transfer (from the device to another number)	Activated
Call Transfer when roaming (from the device to another number when roaming)	Deactivated (change optional)
Conference Call	Deactivated

1.4.2 Barring Options

This Voice whitelist option can protect Customer from 'bill shocks' and strengthen security by granting access to and from authorized numbers only. This option consists of restricting the use of Voice services (incoming and outgoing calls) through the implementation of an authorized list of phone numbers (one list per Customer account – if Customer has several accounts, one list can be defined per account). This whitelist can contain up to 20 authorized phone numbers, other numbers that might be dialed or received by any SIM cards in the Customer fleet will be systematically rejected. The defined numbers can be of any kind: special, national, or international format number. Emergency numbers (112 and 999) are not filtered. This feature will be available in European Union zone, and in any country where Orange's roaming partners have corresponding agreements. This capability aims to ensure real time control of the authorized phone numbers. The feature will be set-up by the Orange IoT dedicated support, within 24 hours of request and can be deactivated at any time in the same way.

Upon Customer request, other specific barring may be provided on data, SMS, or voice traffic. These barring may be subject to additional charges.

1.4.3 Roaming Control Option

This option can protect Customer from 'bill shocks' and strengthen security by controlling traffic whilst roaming. This option consists of restricting the use of Voice traffic (incoming and outgoing calls), SMS traffic (MO and MT SMS) or Data traffic through the implementation of a list of non-authorized countries (one list per Customer account – if Customer has several accounts, one list can be defined per account). The blacklist contains all the MCC (Mobile Country Codes) of the countries to be banned with the type of bearer (Voice, SMS, or Data) authorized or not. Emergency numbers (112 and 999) are never filtered. This feature will be available worldwide. France is excluded from the list as it is not considered a roaming country. This capability aims to ensure real time traffic control in authorized countries. Any restriction in the use of Data traffic shall also apply when Customer has chosen to open its universal APN to alternative Mobile Network operators. The feature will be set-up by the Orange IoT dedicated support, within 1 month of request and can be modified or deactivated at any time in the same way. This feature requires compatible SIM cards.

1.5 Test & Prototype SIM Cards

Upon agreement with Orange, Customer can be provided with Test SIM Cards (as defined below) or Prototype SIM Cards (as defined below) in order to test the Service or evaluate its operations integration prior to entering the production step:

- Test SIM Cards: an agreed number of SIM Cards based on a defined profile are provided free of charge to Customer for test purposes; and/or
- Prototype SIM Cards: an agreed number of SIM Cards based on a flexible profile are provided for an agreed fee to Customer for pre-production evaluation purposes.

The SIM Card Test option and the SIM Card Prototype option will be defined in a separate document prepared by Orange and provided to Customer, describing in particular the conditions of the temporary service, fees, and invoice terms, as applicable.

1.6 Global Coverage

The SIM Cards will use the following global footprint, always subject to legal, regulatory, and roaming agreements limitations:

- the direct mobile network footprint of Orange SA and its Affiliates in Europe and Africa;
- partners of Orange SA in the Global M2M Association (GMA);
- other roaming partners of Orange worldwide.

The selection of the appropriate network will be done automatically depending on the priority networks (steering rules) defined by Orange.

The global coverage described above is subject to change at any time.

1.7 M2M Connectivity Management Platform

Orange provides an M2M Connectivity Management Platform and fleet management tools to operate the Service and monitor SIM Cards' activity. The Self-Management and Self-Diagnosis services allow Customer to manage and monitor the Orange IoT Service through a web-based self-service portal (the "**M2M Portal**") or web services API (the "**M2M API**").

A detailed description and technical specifications of the functionalities are available on the Orange Business Services web site.

1.7.1 Features

1.7.1.1 Self-Management Services

- **User Administration:** Customer can create and manage the user's access to its accounts and define the read and write rights profiles for the users.
- **Connectivity directory:** Customer can view all relevant data related to its fleet of SIM Cards. Customer can also manage the customizable information or some options (offer related) linked to its SIM Cards.
- **SIM Cards Lifecycle Management:** In the SIM Lifecycle, different status corresponding to specific network traffic and billing setups are defined for the SIM Cards. Customer can manage the status of the SIM Cards according to its own IoT operations and logistics or its connected products life cycle.
- **Traffic tracking:** Customer can retrieve the summary of the traffic generated by one or several of its SIM Cards or its complete fleet.
- **Line Order:** Customer can fill in an electronic form to order new SIM Cards directly from the M2M Portal. The order form is then submitted for being processed.

1.7.1.2 Self-Diagnosis Services

- **Service Alarms:** Customer can create and manage tailored triggers to generate alarms based on: under- or over- consumption, related to user defined volumes threshold per traffic type, device geographical location, or device (IMEI) change.

Upon Customer configuration, some alarms can directly act on the SIM card when the alarm is triggered (e.g. switching SIM Card status to 'suspended').

A notification is sent by email when an alarm is triggered. Generated alarms can be viewed, modified, and removed by Customer.

- **Session history:** Customer can retrieve a detailed history of all communications issued by one of its SIM Cards on a defined period of time.
- **Connectivity supervision:** When the device is connected to one of Orange shared APN, Customer can view in real-time the connection status of its devices and the IP address to which it is connected. The feature also provides the location (country and operator) of the device.

1.7.2 M2M Portal

The M2M Portal is a secured web application accessible to Customer. Only authorized users who have been granted access by Customer can view Customer's content and related IoT Services activities. Access to the M2M Portal only requires an Internet connection.

Upon creation of Customer's account and initial access to the M2M Portal, Customer will receive a first set of credentials (login/password) for its main administrative user to create other users within its organization, depending on their requested access profiles. Once created, each user will receive its credentials (login/password) to access the M2M Portal.

Customer is granted full access to the Self-Management and Self-Diagnosis services, available 24 hours a day, 7 days a week. However, specific requests for SIM Card activation are processed only between 6am and 11pm central European time outside Sundays and French public holidays.

1.7.3 M2M API

The M2M API allows Customer's applications to have access to the M2M Connectivity Management platform.

The M2M API (Application Programming Interface) is built upon common web services standards based on standardized Simple Object Access Protocol (SOAP); and allows Customer the integration into its IT architecture (like CRM or ERP system).

Customer will integrate the M2M API into its own business application using the development kit (WDSL and Java-SDK files) available on demand.

Most of Self-Management and Self-Diagnosis services features are available through M2M API. Customer is informed that some features or parts thereof (like User administration, Line order, Connectivity supervision) are not available.

1.7.4 Restrictions

Traffic monitoring functionality may deviate from call data records used for the invoicing and detailed invoice reports.

To facilitate Customers' use and to optimize platform's and features' stability, requests may be suspended.

1.7.5 Modifications to the Self-Management and Self-Diagnosis Services

If Orange, for technical or commercial reasons, modifies or partially withdraws the Self-Management services and/or the Self-Diagnosis services, Customer will be informed no later than three (3) months before the planned date.

In the event of substantial change or modification to those services, Customer may terminate them in accordance Clause 1.9 of the Specific Conditions for Managed Global Connectivity; IOT Connect Express.

1.8 Connectivity from Customer Central Site Up to the Mobile Network

The possibilities for Customer to connect its central site and data server(s) to Orange core network are:

- **Internet:** the devices use a shared APN and the data traffic is transported non-secured over the Internet.
- **SMA Internet:** the devices use a Customer dedicated APN and the data traffic is transported secured through an IPsec tunneling over the Internet. The IPsec gateway on Customer site is not provided and maintained by Orange.
- **SMA Intranet:** the devices use a Customer dedicated APN and the data traffic is transported secured with a guaranteed quality via the Business VPN solution of Orange. Specific Conditions for Business VPN will be provided to the Customer.

The most suitable solution is determined jointly between Orange and Customer in the pre-sales phase. Any customization of an Orange standard solution needs to be validated by Orange.

1.9 Connection to Orange SMS Server (SMS-C)

The SMS Internet option provides a direct connection between Customer's application(s) server(s) and Orange SMS server (SMS-C) allowing to exchange SMS between Customer's application(s) and Machines. The SMS can be sent from the devices to the Customer application(s) (SMS-MO) or in reverse direction (SMS-MT).

1.10 IOT Services Device Test Kit (Optional)

Orange can run a set of pre-defined tests for the device(s) Customer intends to use. Such tests are part of the optional Device Test Kit services, which are subject to additional charges.

1.11 IOT Services Managed Implementation

Dedicated Implementation team (Build Phase)

Upon ordering, Customer will select one of the following service types:

- **Managed Implementation Initial** (which is included in the global service set up charges).
- **Managed Implementation Intense** (which may be subject to additional charges).

In order to deploy the M2M Services, an Orange dedicated Implementation Manager (Managed Implementation Initial) will coordinate the actions within Orange; however, the Service Manager will be and remain the main point of contact.

As part of Managed Implementation Intense Orange will provide a dedicated Project Manager in addition to or in lieu of the Implementation Manager, as agreed between the Parties.

1.12 IOT Services Managed or Optimized (Optional)

IoT Services Managed Initial is the default service management included in IoT Connect Express. This service includes the IoT L1 Helpdesk, the Self-management and Self-diagnosis services, and the control of SIM orders and delivery.

Upon Customer request, Orange may provide additional service management options. Customer can choose between: **IoT Services Managed** or **IoT Services Optimized**. Both come in two services types: Initial or Intense.

IoT Services Managed, Optimized with their service types Initial and Intense are described in the Service description IoT Services Managed, Optimized.

1.13 IoT L1 Helpdesk

The Orange IoT L1 Helpdesk provides direct assistance and response to any Customer queries related to the daily management, technical matters, and incident escalation.

The Helpdesk can be contacted via:

- email: helpdesk.iot@orange.com;
- phone: +32 2750 2750 and/or dedicated local call numbers;
- portal ticketing tool.

Assistance is available in English. The Orange Helpdesk is available 24x7x365 for first level support.

END OF SERVICE DESCRIPTION FOR IOT MANAGED GLOBAL CONNECTIVITY: IOT CONNECT EXPRESS SERVICES