Service Description

VERSION DECEMBER 2025

1NCE

Cologne – Miami – São Paulo – Singapore – Tokyo
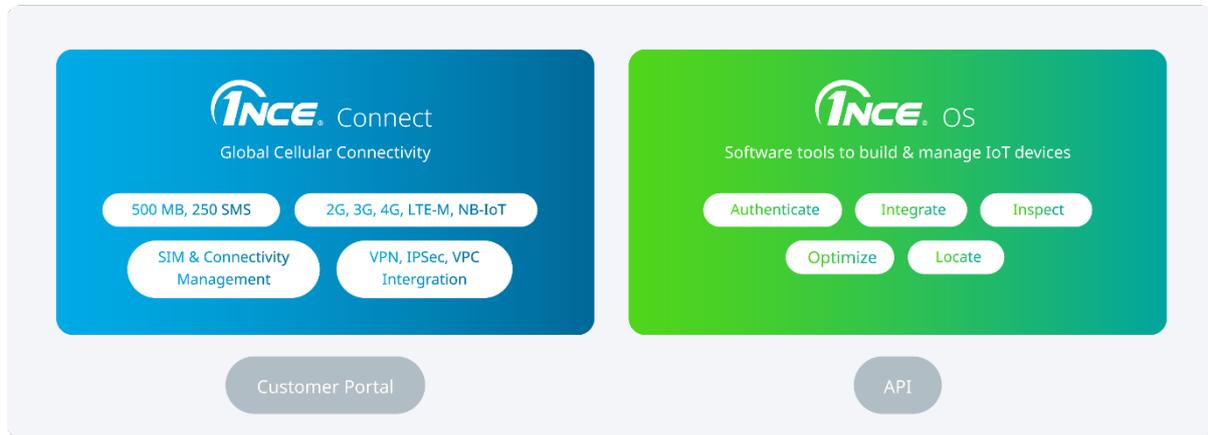
1 Introduction – Lifetime Flat

1NCE provides connectivity and software services enabling business customers to develop and operate globally connected IoT devices.

Lifetime Flat

1NCE Services can be purchased with the *Lifetime Flat*.

1NCE Services consist of two products: 1NCE Connect and 1NCE OS. 1NCE Connect offers global cellular connectivity, data, and SMS on, to the extent available, 2G, 3G, 4G, LTE-M, and Narrowband-IoT networks, IoT SIMs, connectivity management functionality, and network integration options (via OpenVPN, IPSec and TGW). 1NCE OS consists of software tools to build and manage IoT devices. 1NCE OS simplifies the authentication, integration, inspection, and localization of IoT devices.

Customers can access 1NCE Services through a graphical web interface (the Customer Portal), or an Application Programming Interface (API) for a more direct, data-based integration.

This Service Description is applicable only if there is at least one active IoT SIM (see Terms & Conditions) associated with the Customer account or one of its sub-accounts (see Section 5.1).

The definitions set out in the Terms & Conditions also apply to this document.

2 1NCE Connect

1NCE Connect provides global cellular connectivity via roaming partnerships with local operators. It offers IoT SIMs in various form factors, which are utilized in a wide range of IoT devices. 1NCE Connect is managed through the Customer Portal (see Section 5) or the API (see Section 6).

2.1 Data and SMS Volumes

2.1.1 Included Data Volume

The included data volume for each IoT SIM is 500 MB (megabytes) for Customers in North America, Europe, and Asia, and 240 MB for Customers in Brazil. Data consumption is measured in bytes. Once the included data volume has been consumed, no further device communication is possible. Additional data volume can be purchased as per Section 2.4.

Unused data volume expires at the end of the Lifetime.

2.1.2 Included SMS

The included number of SMS is 250 for Customers in North America, Europe, and Asia, and 50 for Customers in Brazil. After the included SMS have been consumed, no further SMS communication is possible. Additional SMS can be purchased as per Section 2.4.

1NCE offers both Mobile-Originated (MO) and Mobile-Terminated (MT) SMS delivery. Device-to-device SMS is not supported:
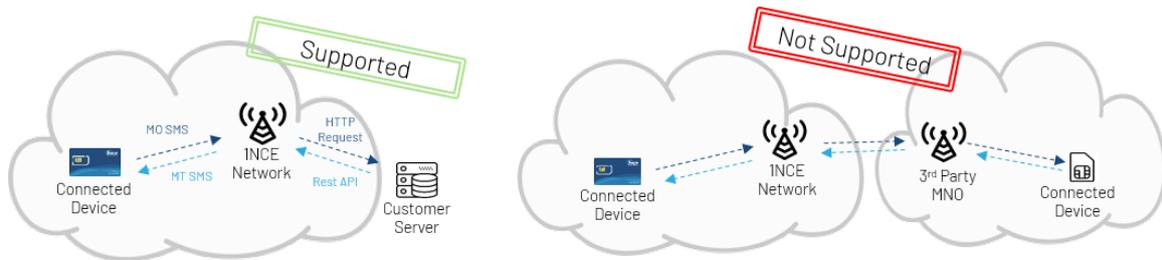
- Example shows MO and MT SMS usage which both will be supported.
- Device-to-device SMS is not supported.

Unused SMS expire at the end of the Lifetime (see Section 1).

2.2   IoT SIMs

2.2.1   Form Factors

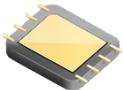1NCE offers IoT SIMs for IoT devices to connect to and use the 1NCE network (see Section 2.3). IoT SIMs can be used with compatible IoT devices. 1NCE defines three different IoT SIM form factors, characterized by the following physical attributes:

	IoT SIM Card Business	IoT SIM Card Industrial	IoT SIM Chip Industrial
Picture			
Ruggedized Form Factors	2FF, 3FF, 4FF		MFF2, QFN8
Standard Compliance	• Global Platform 2.3 • ETSI TS 101 220 • ETSI TS 102 221 • 3GPP TS 31.101 • 3GPP TS 31.111 • 3GPP TR 31.900 • 3GPP TR 31.919		
Additional Compliance		• RSP SGP 01+02+16 • eUICC Profile Package Interoperable Format Technical Specifications	

These form factors are part of the standard offer. Both industrial form factors are capable of remotely switching operator profiles (eUICC).

1NCE offers additional sub-classes of IoT SIMs with differing features. The prefix of each sub-class indicates its physical attributes as described in the table above.

- **IoT SIM Card Business China+**: Unlocks NB-IoT coverage in China, Hong Kong, Macao, and Taiwan (see Section 2.3.1) via multi-IMSI capabilities. Currently, it is only available in the IoT SIM Card Business class.
- **IoT SIM Card Business Unbranded**: Does not include the 1NCE logo. Currently, it is only available in the IoT SIM Card Business class.
- **IoT SIM Card Business Brazil:** Unlocks coverage in Brazil via multi-IMSI capabilities. Brazilian Customers can choose from dual-form-factor variants (2FF, 3FF) and 4FF form factors.
- **IoT SIM Chip Industrial Brazil:** Unlocks coverage in Brazil via multi-IMSI capabilities.
- **IoT SIM Chip Industrial Classic:** Is not capable of remotely switching operator profiles (eUICC).

2.3 Network

2.3.1 Country Coverage & Bearers

1NCE IoT SIMs support the following bearers / Radio Access Types (RATs):

- 2G (*GSM*)
- 3G (UMTS)
- 4G (*LTE*)
- Narrowband-IoT / NB-IoT (*CAT-NB1*)
- LTE-M (*CAT-M1*)

The availability of the above-mentioned bearers in each supported country may vary and is subject to change from time to time. Further details can be found on the current 1NCE coverage website: https://www.1nce.com/en-eu/1nce-connect/our-coverage

2.3.2 Network Speed

The 1NCE network is optimized for IoT devices. Data-bound connectivity services are provided at a maximum transmission speed of 1 Mbit/s for both uplink and downlink.

2.3.3 Local Breakouts

1NCE provides local internet breakouts to reduce data latency depending on the geographical position of IoT devices in the following regions:

- Frankfurt, Germany
- California, USA
- Virginia, USA
- Tokyo, Japan
- São Paulo, Brazil

IoT SIMs can either automatically select the nearest geographic breakout, or a fixed breakout can be configured.

2.3.4 APN

1NCE Access Point Names (APNs) allow IoT devices to connect to the 1NCE network when transmitting packet-oriented data. 1NCE provides a private APN, *iot.1nce.net*.

2.3.5 IP Addresses

1NCE allocates 256 private IP addresses in a /24 address space per account (see Section 4.2). An additional /24 address space will be automatically allocated when the previous space has been used up.

2.4 Connectivity Management

1NCE Connect offers a variety of connectivity management features, which can be accessed either via the Customer Portal (see Section 5) or the API (see Section 6):

2.4.1 Consumption Monitoring

- **View IoT SIM status and consumption**: Get the current activation status and consumption of data and SMS per IoT SIM.

- **View Network Events**: Provides network-related events for all IoT SIMs in a Customer account (see Section 5.1).

2.4.2 IoT SIM Management
- **View IoT SIM Details**: Get ICCID, IMEI, IMSI, IP address, labels, usage and other attributes per IoT SIM.
- **IoT SIM Export**: Export and download the details of all IoT SIMs in a Customer account.
- **Set IoT SIM activation status**: Allow or disallow IoT SIMs to use the 1NCE network.
- **Reset an active network connection**: Disconnect an IoT SIM from the 1NCE network.
- **Monthly Limits**: Set monthly limits for data and/or SMS MO/MT volumes (see Section 2.1) for all IoT SIMs in a Customer account (see Section 5.1).
- IMEI Lock: Locks the IMEI of an IoT device to the IoT SIM. Provides access to the 1NCE network only with this combination of IMEI and IoT SIM. Bars all other combinations from the 1NCE network. Can be set up for all IoT SIMs in a Customer account (see Section 5.1).
- SIM Transfer: Change ownership of a particular IoT SIM to a sub-account (see Section 5.1).

2.4.3 Order Management
- **Purchase IoT SIMs**: Order additional IoT SIMs.
- **Top-Up**: Purchase additional data and/or SMS volumes for a specific IoT SIM.
- **Auto Top-Up**: Automatically purchase additional data and/or SMS volume once an IoT SIM has less than 20% of data and/or SMS volume available. Configurable for all IoT SIMs in a Customer account (see Section 5.1). Not available for AWS Customers.
- **Lifetime Extension**: Extend the Lifetime per IoT SIM (see Section 2.2).

2.4.4 Connectivity and Data Routing Options
- **OpenVPN:** This feature allows IoT devices to communicate within an external OpenVPN-based Virtual Private Network, providing an encrypted tunnel for data transmission.
- **IPSec (Value Added Service, Section 4):** For Customers requiring enhanced security or a more robust VPN integration, 1NCE offers connectivity via an IPsec-based Virtual Private Network.
- **Public Internet Breakout (Value Added Service, Section 4):** 1NCE offers the option for IoT devices to route data over the public internet for M2M services. This option is provided at the Customer's discretion and is not recommended for applications requiring secure communication, as it exposes devices to the inherent risks of public internet routing.

2.4.5 Additional Connectivity Management Options
- **Data Streamer**: Integrate selected Connectivity Management functions into external cloud services. This includes network-related events (IoT SIM activation status, network connection status, used local operator, bearer, data consumption usage,

country of use). Pushes events in near real-time via Webhooks, AWS Kinesis, DataDog, and Keen.io.

- **SMS Management**: Send SMS to IoT devices or receive SMS from IoT devices and forward them via Webhook.

  - o **SMS Receiving**: Mobile-Terminated SMS can be triggered via the API (see Section 6) or Customer Portal (see Section 5).
  - o **SMS Forwarding**: Mobile Originated SMS can be integrated via Webhook.

2.5   Freedom to Switch

Technical capability of IoT SIMs to remotely add, switch or delete operator profiles using eUICC. Industrial-grade IoT SIMs (see Section 2.2.1) are delivered with Freedom to Switch pre-installed and inactive. Active eUICC usage requires an integration project (for which additional costs may occur) and a compatible IoT device.

3   1NCE OS
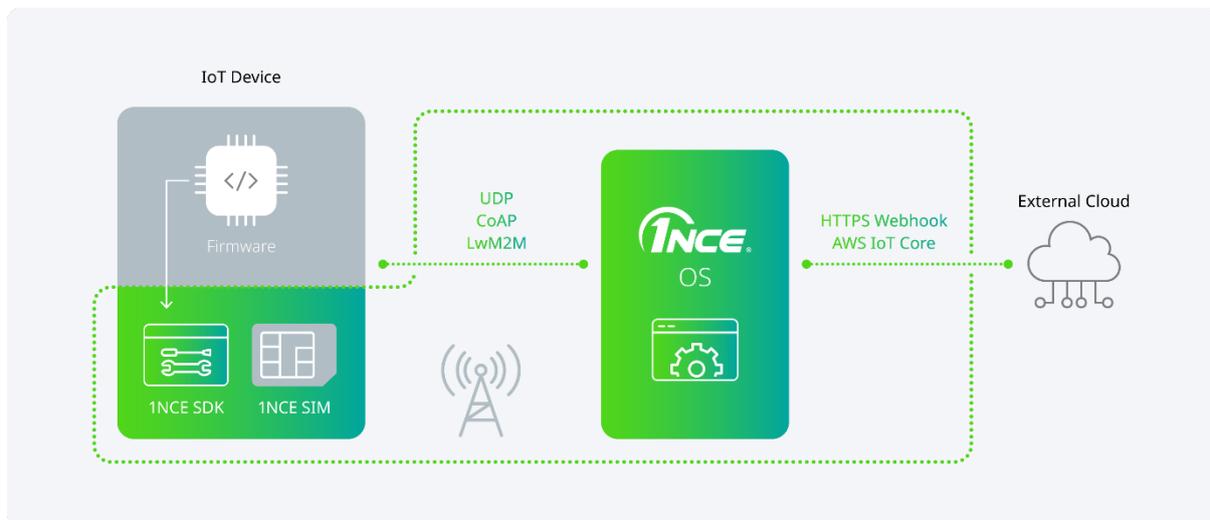
1NCE OS provides software tools to develop and manage IoT devices. These tools support the integration of the application layer on top of the network layer, which is provided by 1NCE Connect (see Section 2).

1NCE OS consists of:

- Integration tools to authenticate and integrate IoT devices with external cloud services and to make their telemetry data accessible.
- Optimization tools to improve the efficiency and security of IoT devices.
- A localization tool for determining the position of IoT devices when GPS reception is not available.
- Open-source IoT device functionality and examples.

More information and a detailed description of 1NCE OS features can be found in the 1NCE OS Developer Documentation in the Developer Hub: https://help.1nce.com/dev-hub/docs/1nce-os-services-overview.

Furthermore, 1NCE OS offers an extension for various third-party plugins, which can be activated autonomously by the Customer. All such plugins are provided by third parties. The exact scope of features and functionalities depends on the specific plugin and is outlined in the respective third-party plugin documentation displayed during the activation process.

1NCE OS can only be used with 1NCE Connect. 1NCE OS can only be used with the local breakout in Frankfurt, Germany.

3.1 Device Authenticator

Authenticates IoT devices against external cloud systems based on the identity of the IoT SIM used. An IoT SIM in any form factor is placed into the IoT device and acts as an authenticating element by relying on the same network authentication mechanisms as 1NCE Connect. It replaces provisioning processes that involve secret flashing during manufacturing and supports the creation of secure device twins in the customer IT infrastructure.

It informs integrated cloud services about the addition of new IoT SIMs to the Customer account (see Section 5.1).

3.2 IoT Integrator

Integrates IoT devices into cloud services by translating data protocols.

- **Device Integrator**: Provides an integration endpoint for telemetry data of IoT devices. Supports UDP, CoAP, and Lightweight-M2M (LwM2M). CoAP and LwM2M connections can be encrypted using DTLS.
- **Cloud Integrator**: Provides an integration endpoint to push the enriched data stream into external cloud services. Supports AWS IoT Core and HTTPS Webhook integration. Both integration targets are TLS-encrypted.

3.3 Device Inspector

Stores data streams for up to 7 days in 1NCE OS so that it can be retrieved and inspected within that time, e.g., for debugging purposes or as a backup for other integration mechanisms. Data can be requested via the API (see Section 6) or viewed within the Customer Portal (see Section 5).

3.4 Device Locator

Device Locator provides location services for IoT devices connected via 2G. In its basic mode, it offers a rough position based on the location of the serving cell tower and sends alerts when devices leave a configured geographical area (geo-fence). The basic mode is included in the standard service offering.

Access to location data, in both basic and advanced modes, is available via the API (see Section 6) and the Customer Portal (see Section 5).

3.5 Energy Saver

Optimizes energy consumption of IoT devices by reducing data payload. Telemetry data is compressed on the IoT device using *Binary Conversion Language* (BCL), before it is sent to the Device Integrator, effectively reducing radio airtime and therefore energy. The telemetry data is decompressed by Energy Saver before it is made available via the Cloud Integrator or Device Inspector.

3.6 Plugins

Allows Customers to install different plugins offered and connected via 1NCE OS. Such plugins may contain different IoT device-related features, such as, but not limited to, data management, visualization, cloud connectivity, etc. The plugins are subject to change and expansion and are provided solely by third parties, independently of 1NCE.

3.7 1NCE SDK & Blueprints

The 1NCE SDK is an open-source, MIT-licensed, C SDK which can be integrated into the firmware of the Customer's IoT devices. It contains functions to authenticate against the 1NCE OS-managed cloud service and to compress data for use with Energy Saver (see Section 3.5).

The 1NCE SDK can be downloaded at: https://github.com/1NCE-GmbH/1nce-iot-c-sdk

The 1NCE SDK may contain components from third-party plugin providers if this is required to operate a plugin.

Blueprints are open-source, MIT-licensed code repositories for embedded platforms. They contain complete examples for FreeRTOS and Zephyr on how to use the 1NCE SDK, 1NCE Connect, and 1NCE OS on the IoT device.

The blueprints can be downloaded at: https://github.com/1NCE-GmbH/blueprint-freertos (FreeRTOS) or https://github.com/1NCE-GmbH/blueprint-zephyr (Zephyr).

4 Value Added Services

The following services in this section are not included in the standard offering and are subject to additional charges according to the applicable 1NCE Price List.

4.1 1NCE Whereabouts

4.1.1 Device Locator Plus

For enhanced location accuracy, Device Locator also offers an advanced mode, which supports devices connected via 2G, 3G, LTE, and LTE-M. This mode utilizes external resolvers and enriches location data with additional network information, resulting in a significantly improved resolution rate. The advanced mode is an optional add-on service that is not included in the standard service offering and is subject to additional charges.

Once enabled, this advanced version replaces the basic Device Locator functionality included in 1NCE OS.

4.1.2 Geofencing

Generates alerts when a device enters or exits a predefined area.

4.2 Security Services

1NCE offers additional services on top of OpenVPN to securely integrate network traffic into the Customer's IT infrastructure:

- **IPSec**: IoT devices can communicate via an external IPSec-based Virtual Private Network.

- **TGW Attachment**: IoT devices can communicate via a TGW Attachment connection in an external AWS environment.

- **IPSec:** IoT devices can communicate via an IPsec-based Virtual Private Network.

- **Public Internet Breakout:** IoT devices can route data over the public internet for M2M services. This option is provided at the Customer's discretion and is not recommended for applications requiring secure communication, as it exposes devices to the inherent risks of public internet routing.

4.3 1NCE Insights

Provides detailed insights into the Customer's device-fleet behavior and identifies potential issues. Typical device metrics include traffic consumption, country distribution, and RAT(s) utilized. The information is delivered through a dashboard within the 1NCE OS Customer Portal.

5 Customer Portal

1NCE provides a web interface called the Customer Portal. It allows Customers to autonomously manage 1NCE Connect (see Section 2.4) and 1NCE OS (see Section 3). It can further be used to manage Customer accounts, organizations, and to purchase additional IoT SIMs.

The Customer Portal can be found at https://portal.1nce.com/.

By default, the Customer uses their email address and password to log into the Customer Portal and manage their Customer account and its associated IoT SIMs. A menu is present on every page, which allows navigation through the functionality of the provided services:

- Dashboard: Provides general status information about all Customer IoT SIMs, e.g., data volume usage, SMS usage, and order status.
- My SIMs: Overview of all Customer IoT SIMs and IoT SIM Management functionality (see Section 2.4.2).
- Configuration: Manage Network (see Section 2.3) and Integration Options (see Section 2.4.4).
- 1NCE OS: Manage 1NCE OS functionalities (see Section 3).
- Account: Manage Customer account (see Section 5.1).

- Orders: Manage all previous orders and order new IoT SIMs.
- Users: Manage users and their roles (see Section 5.2).
- Organization: Manage sub-accounts (see Section 5.1).
- Performance: Provides real-time status information about the network and attached services.
- Support: Manage Service Requests (see Section 8).

5.1 Account & Organization Management

Each Customer has one account. Each Customer account has billing and shipping addresses attached to it. Shipping addresses can be added and modified by the Customer for future orders. The addresses are stored and will be used each time the Customer orders additional IoT SIMs.

The Customer account allows the Customer to manage an IoT SIM fleet. An IoT SIM fleet refers to either one or multiple IoT SIMs associated with a Customer account. By default, all IoT SIMs belong to that Customer account which performed the initial purchase.

It is possible to create and delete sub-accounts (referenced as *sub-orgs* in the Customer Portal) under this Customer account to group separate IoT SIM fleets. This structure is called an *Organization* in the Customer Portal. IoT SIM fleets can be transferred within the Organization between a sub-account and the initial Customer account or vice versa. The Customer Portal does not allow transferring IoT SIM fleets between different Organizations or sub-accounts. The creation of a sub-account is not available for AWS Customers.

5.2 User Management, Roles & Permissions

By default, the Customer who performed the initial purchase is the sole user in the Customer account. This user has the role *Owner*. It is possible to manage further users in this Customer account and associate one of the following roles:

- **Owner**: Enables the use of all management and purchasing functions. Allows assignment of all roles.
- **Admin**: Enables the use of all management and purchasing functions. Allows assignment of the *User* role.
- **User**: Enables the use of all management functions.
- **Read Only**: Enables read only access to the Portal and has no access to the Management API.
- **API**: Enables the use of the API (see Section 6).

6 API

1NCE provides a management API. It allows web services to programmatically manage 1NCE Connect (see Section 2.4) and 1NCE OS (see Section 3).

The API documentation can be found at https://help.1nce.com/dev-hub/reference/api-welcome.

Communication with the API is possible via HTTP(S) requests with JSON body content of content type *application/json* and authorization type OAuth2 (OAuth2, application), which are required for each API call. The applied encryption protocol is TLS 1.2.

7 Developer Hub

1NCE provides more detailed information about the previously described services, user manuals, AT commands, and usage examples in the Developer Hub.

The Developer Hub can be found at https://help.1nce.com/dev-hub/docs.

8 Service Level Agreement

The quality of service is determined by 1NCE's standard SLA (Service Level Agreement).

8.1 Service Hours & Service Numbers

1NCE provides support services by telephone and by contact form (via e-mail to a ticket system), which can be reached via the Customer Portal (see Section 5). The support is available to the named contact persons of the Customer as well as to any other user of the Customer Portal (see Sections 5.1 and 5.2).

English telephone support is available 24 hours a day, Monday through Friday (24x5). Telephone support in local languages (other than English) is available during standard service hours between 8 a.m. and 6 p.m. local time in the respective region.

The 1st level support speaks the following languages in the respective regions:

Region	Language(s)
APAC	English
EMEA	English, German
Japan	Japanese, English
North & Middle America	English
South America	English, Brazilian Portuguese

The service numbers can be found in the Customer Portal.

8.2 Operations & Maintenance

All servers, services, and system components required to operate the previously described services are operated in a technically and organizationally secure environment.