



# ANNEX 6

## Network communication policy

### 1. PROBLEM STATEMENT

- 1.1. This section, Problem Statement, is included for informational and contextual purposes to support the Network Communication Policy section.
- 1.2. The predicted large scale growth of IoT devices will create major challenges for mobile network operators. One major challenge that mobile network operators must overcome is the risk caused by the mass deployment of inefficient, insecure or defective IoT devices on the mobile network operators' [domestic and roaming] networks. When deployed on a mass scale such devices can cause network signaling traffic to increase exponentially which impacts network services for all users of the mobile network. In the worst cases the mass deployment of such IoT devices can disable a mobile network completely.
- 1.3. IoT devices overusing the mobile network can affect not only the devices causing the incident but also other devices on the same IoT service platform or those devices of other end customers.
- 1.4. Network signaling resources are dimensioned assuming an overall device usage profile with a sensible balance between traffic and signaling needs. It is therefore important that IoT devices using mobile networks adhere to some basic principles before they can be safely connected to mobile networks.
- 1.5. Good design is essential to ensure that IoT Device performance is optimized and to prevent failure mechanisms creating runaway situations which may result in network overload.

### 2. NETWORK COMMUNICATION POLICY

- 2.1. The Customer is responsible for, and shall assure, that their entire IoT Solution including Communication Module, Device, and Customer Backend follow this Tele2 Network Communication Policy.
- 2.2. In the event of a Major Network Disturbance caused by non-compliance with the Network Communication Policy, Tele2, at its sole discretion, may temporarily suspend or permanently terminate SIM Cards.

- 2.3. In the event of a Minor Network Disturbance caused by non-compliance with the Network Communication Policy, Tele2, at its sole discretion may temporarily suspend SIM Cards.
- 2.4. The Customer undertakes to remedy Device or Customer Backend in the event that they cause Network Disturbances caused by non-compliance the Network Communication Policy. Until such time that the Customer can deploy a remedy to Devices using the Access Service and Roaming Network Services, Tele2, at its sole discretion may keep SIM Card(s) suspended and take any actions necessary to ensure the Devices do not negatively impact the Services. The Customer shall bear all costs related to remedying Device and Customer Backend and any associated traffic costs for perform updates to the Device.
- 2.5. Tele2 reserves the right to charge for any unexpected cost that may occur due to non-compliance with the Network Communication Policy.
- 2.6. The Device, Customer Backend and Device's Communication Module shall in all parts conform to the requirements stated in Device Efficiency Guidelines.
- 2.7. Excluding MSUs generated by SMS traffic, the Device shall, in average, not generate more than:
  - 2.7.1. Ten (10) MSUs per hour for a Device installed in a fixed location.
  - 2.7.2. Twenty (20) MSUs per hour for a Device which is mobile.

### 3. QUALITY ASSURANCE

- 3.1. All changes to Device and/or firmware shall be tested in a secure environment by the Customer before release. The tests shall, at least, secure that the Network Communication Policy is followed.
- 3.2. The Customer shall inform Tele2 of planned releases that might affect the network communication behavior.

### 4. EXCESS SIGNALING CHARGES

- 4.1. Tele2 IoT's network communication policy defines what is proper network communication patterns for devices in the network. Devices that deviate from this generate more signaling events than normal and put stress on our

network and the networks of our roaming partners. For these misbehaving devices Tele2 IoT charges an excess fee, applicable per device per month until the issue causing the misbehaviour is removed.

- 4.2. Based on normal device behavior we've set a threshold at 10 000 signaling messages per device and month, including SS7, GTP and Diameter events. The excess fee is €0,20 per device + €0,000125 per signaling message above the threshold.