

Sääntely paikallisten 5G-verkkojen mahdollistajana

5G Momentum Paikalliset 5G-verkot -
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5G



“Make it available”

Spectrum for mobile broadband in Finland

- ▶ Three operators with nationwide coverage
 - ▶ > 99% of population with 2G, 3G & 4G
 - ▶ ~70% of households with 5G
 - ▶ New spectrum quickly into use without fiscal goals: cheaper to build, easier to plan, less congestion, more capacity
 - ▶ Unlimited data, inexpensive prices, developed networks, good coverage
- ▶ Dedicated spectrum for local networks
 - ▶ 2300 – 2320 MHz (20 MHz)
 - ▶ 24.25 – 25.1 GHz (850 MHz)

Current spectrum



Future spectrum



ITU-R: Technical and operational characteristics of land-mobile service applications in the frequency range 275-450 GHz

Local 4G/5G networks in Finland

- ▶ 2300-2320 MHz and 24.25-25.1 GHz are allocated for local 4G/5G networks
 - ▶ Radio licenses are granted by Traficom
- ▶ The local bands can be used for
 - ▶ local private use: factories, power plants, ports, industry and university campuses
 - ▶ small-scale public networks: shopping centres, sports arenas, passenger harbors, etc.
 - ▶ Fixed wireless access: Subscriptions can only be used in the pre-defined operating location, primarily using a fixed outdoor antenna installed in the building



Regulatory information on local 4G/5G networks

- ▶ Main webpage:
<https://www.trafficom.fi/en/communications/communications-networks/local-4g5g-networks>
- ▶ List of granted licenses and frequency reservations
<https://www.trafficom.fi/en/communications/communications-networks/existing-radio-licenses-frequency-bands-2300-2320-mhz-and>



Traficom regulation on critical parts of communications network – legal basis and context

- ▶ New Section 244a of the Act on Electronic Communications Services
 - ▶ Prohibits the use of a communications network device, in a critical part of the network, that could endanger national security and national defense
- ▶ Complements existing obligations, regulations and Traficom's powers on information security and resilience of communications networks
 - ▶ Already before the new provision, legislation in general provided a good basis for ensuring the security of 5G and earlier networks, through risk-based requirements
 - ▶ The principal aim of the new legislation is to take better into account the risks to national security and national defense

Traficom regulation on critical parts of a communications network - content

- ▶ Identification and documentation of the critical parts of a communications network (duties of the operator)
- ▶ Critical parts of a communications network (technology neutral)
- ▶ Critical parts of 4G- and 5G-networks, functions supporting services at the edge of the network and IP-based mobile telephone services

3 Identification and documentation of the critical parts of a communications network

A telecommunications operator and a dedicated network operator shall identify the critical parts of its communications network and the components of a communications network or service used therein. A telecommunications operator and a dedicated network operator shall draw up and maintain up-to-date documentation on the critical parts of its communications network it has identified, the components of a communications network or service used therein and the grounds for its assessment.

A telecommunications operator and a dedicated network operator shall document the grounds for its assessment if, on the basis of section 7, it considers that a 4G or 5G network function or measure referred to in Table 1 or 2 below is not a critical part of its communications network. The documentation of these parts of a communications network and the components of a communications network or service used therein shall also be subject to the provisions of subsection 1 above.

A dedicated network operator shall assess in particular whether a base station in its dedicated network is a critical part of the communications network, taking into account especially the geographical coverage area of the dedicated network, an individual base station's share of the network traffic and the functions and measures carried out by the base station in the dedicated network. The dedicated network operator shall draw up and maintain documentation on its assessment.

Network models **today** and **in the future**

**National
- slicing**

**Local
private**

**Local small-
scale public**

**Fixed
Wireless
Access**

**Combined
private-
public**

**Mesh
network**

**Temporary
network**

**Combined
satellite-
terrestrial**

**Wide-area
private**

**Shared
network**

**Neutral
host
network**

**Dedicated
M2M/IoT -
network**

*We all share the drive to
move and communicate.
Your connections are close
to our heart.*

TRAFICOM
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