TRAFICOM
Liikenne- ja viestintävirasto

Order
DRAFT

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Date of entry into force:	[dd.mm.yyyy]
In force:	until further notice

Legal basis:
Act on Electronic Communications Services (917/2014), section 244, paragraphs 1, 3 and 12 and section 244a, subsection 6.

Penalties for non-compliance with the regulation are laid down in:
Act on Electronic Communications Services, section 244a, subsection 3; sections 330-332 and section 340

Implementing EU legislation:
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Amendment information:
Repeals the Regulation of the Finnish Transport and Communications Agency on critical parts of the communication network issued on 19 May 2021 (TRAFICOM/161584/03.04.05.00/2020)

Regulation on critical parts of the communications network

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1 Scope

This regulation applies to public telecommunications activities and to a private network connected to the public communications network of operators essential to the vital functions of society as referred to in section 244a, subsection 2 of the Act on Electronic Communications Services (917/2014).

2 Definitions

For the purposes of this regulation:

1) *a critical part of the communications network* means key functions and measures of the network, as referred to in section 244a, subsection 1 of the Act on Electronic Communications Services, by means of which access to the network and traffic on the network is materially controlled or guided;

2) *a critical private network* means a dedicated network connected to the public communications network of a key operator for the vital functions of society, as referred to in section 244a, subsection 2 of the Act on Electronic Communications Services;

3) *a private network operator* means the owner or holder of a critical private network;

4) *a component of a communications network or service* means a network element, device or information system which constitutes or utilises a communications network or service;

5) *a 4G network* means a mobile network implemented with LTE technology; and

6) *a 5G network* means a fifth generation mobile network.

In addition, this regulation complies with the definitions laid down in section 3 of the Act on Electronic Communications Services.

3 Identification and documentation of critical parts of the communications network

A telecommunications operator and a private network operator shall identify the critical parts of its communications network and the components of the communications network or service used therein. A telecommunications operator and a private 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 the communications network or service used therein and the criteria for its assessment.

In particular, a private network operator shall assess whether a 4G base station for its private network is a critical part of the communications network, taking into account especially the geographical coverage of the private network, the individual 4G base station’s share of network traffic and the functions and measures carried out by the base station in the private network. The private network operator shall prepare and maintain documentation on their assessment.

4 Critical parts of the communications network

Critical parts of the communications network shall include at least the functions and measures which, in whole or in part, implement one of the following functionalities:

1) key functions related to the routing and other control or guidance of end-user traffic in the communications network, which may have a material impact on traffic on the communications network, including:

   i. components of a communications network or service, where they belong to priority classes 1 or 2 pursuant to the regulation on the securing of communications networks and services and synchronisation of communications;

   ii. components of a communications network or service, where they otherwise control or guide a substantial part of traffic throughout the network;

   iii. components of a communications network or service in the data centre network, when necessary for the operation of the critical part of the communications network; and

   iv. components of a communications network or service that transmit or route traffic between critical parts of the communication network under priority class 3 of the regulation on the securing of communications networks and services and the synchronisation of communications.

2) end-user access management, verification and authorisation, allocation of network resources to end-users and end-user connections and session management;

3) registration, verification and authorisation of communications network and service functions;

4) infrastructure services necessary for the operation of the communications network and service, and for supporting its operation;

5) functions to implement interfaces between communications networks or services, including roaming;

6) functions by which communications networks or services are interconnected when such a function may have a material impact on access to the communications network or on traffic through the network;

7) centralised management of encryption and keys of the communications network, its functions and end-users;

8) security functions affecting critical parts of the communications network;

9) network management and control systems, including:

   i. systems for the management or control of critical parts of the communication network;

   ii. systems that have a material impact on access to the network or traffic on the network;

   iii. background, invoicing and support systems that may have a material impact on the communication network or traffic on the network; and

   iv. network management and control systems for routing or transmission components of network traffic in the critical parts of the communications network.

10) carrying out telecommunications interception or monitoring;

11) virtualisation when used for the implementation of a function or measure considered to be a critical part of the communications network;

12) any other function or measure when implemented by virtualisation considered a critical part of the communications network referred to in paragraph 11 above; and

13) key functions and measures to allow access to data on the geographical location of the interface or terminal equipment processed in the communications network or to enable the location to be determined by means of a communications network.

5 Critical parts of the 4G network

In addition to the above, critical parts of the communications network for core functions and measures of the 4G network are package switched functionalities pursuant to the Third Generation Partnership Project (3GPP) Technical Specification TS 23.002, 4.1.1, 4.1.4 and 4.1.5, to the extent that they control or guide network access and network traffic in a material way.

Critical parts of the communications network shall include at least the functions and measures that fully or partially implement one of the functionalities of the 4G network pursuant to Table 1 as defined in the 3GPP Technical Specification TS 23.002.

Table 1. Critical parts of the 4G network

Functionality	**Description**
Home Subscriber Server (HSS)	A subscriber register that stores data to handle user sessions and connections.
Equipment Identity Register (EIR)	Equipment identity register containing information on the authorisation of the use of mobile devices.
Subscription Locator Function (SLF)	A function that transmits to other network functions the name of the central database containing user data (HSS).
Mobile Management Entity (MME)	Unit responsible for managing terminal connections and mobility.
Serving Gateway (SGW)	Servicing gateway responsible for routing user-level traffic.
Packet Data Network Gateway (PDN GW)	Package-switched network gateway between the operator’s internal IP network and the external IP network.
Evolved Packet Data Gateway (ePDG)	Gateway for connecting users outside the mobile network.
3GPP AAA Server and 3GPP AAA Proxy	Server and proxy responsible for verifying and authorising users outside the mobile network.
Access Network Discovery and Selection Function (ANDSF)	Function responsible for user traffic control between mobile and non-mobile networks.
Policy and Charging Rules Function (PCRF)	User interface policy and invoicing function.

6 Critical parts of the 5G network

In addition to the above, critical parts of the communications network for the functions include the network functionalities pursuant to the 3GPP Technical Specifications TS 23.501, 6.2 and TS 38.300, 4.1, to the extent that they control or guide access to the network and traffic on the network in a material way.

Critical elements of the communications network include at least the functions and measures that fully or partially implement one of the functionalities of the 5G network pursuant to Table 2 as defined in the 3GPP Technical Specifications TS 23.501 and TS 38.300.

Table 2. Critical parts of the 5G network

Functionality	**Description**
gNB	Responsible for the management of user and control traffic in the 5G network in its scope.
Access and Mobility Management Function (AMF)	Responsible for the terminology of user control traffic, the registration of terminal equipment and the management of mobility.
User Plane Function (UPF)	Responsible for routing, guiding and managing user traffic.
Policy Control Function (PCF)	Responsible for traffic control and implementation of access management policy.
Authentication Server Function (AUSF)	Responsible for verifying user terminals.
Unified Data Management (UDM)	Responsible for user access management and the creation and management of encryption keys.
Application Function (AF)	Supports network routing decisions.
Network Exposure Function (NEF) and Intermediate NEF (I-NEF)	Enables 5G core network functionality to be provided to third parties and external applications.
Network Repository Function (NRF)	Responsible for the availability, registration and authorisation of network services.
Network Slice Selection Function (NSSF)	Responsible for network slicing services and specifications.
Network Slice Specific Authentication and Authorization Function (NSSAAF)	Responsible for verification and authorisation for the slices of the network.
Session Management Function (SMF)	Responsible for the management of user sessions.
Security Edge Protection Proxy (SEPP)	Proxy that allows secure interconnection to other networks.
Unstructured Data Storage Function (UDSF)	Function used to store and retrieve non-structural data.
Unified Data Repository (UDR)	A repository capable of storing and retrieving, inter alia, subscriber information.

UE radio Capability Management Function (UCMF)	A function that stores and retains terminal equipment ID radio capability data.
Non-3GPP InterWorking Function (N3IWF)	Function allowing access to network functionality for users outside the mobile network.
Trusted Non-3GPP Gateway Function (TNGF)	Acts as a network gateway when a non-3GPP but trusted access network is used as the access network.
Trusted WLAN Interworking Function (TWIF)	Enables devices that are incapable of 5G signalling to access the 5G core network via a wireless local area network (WLAN).
Wireline Access Gateway Function (W-AGF)	Acts as a gateway between terminal devices and the 5G network when a fixed network is used as the access network.
Short Message Service Function (SMSF)	Responsible for the transmission of short messages between the 5G core network and the SMSC. Checks the SMS service data of the user's subscription and ensures that the messages are delivered accordingly.
5G-Equipment Identity Register (5G-EIR)	Equipment identity register containing information on the authorisation of the use of mobile devices.
Service Communication Proxy (SCP)	Routes messages to other network functions.
Network Data Analytics Function (NWDAF)	Collects, analyses and shares both real-time and historical data for network control.
Data Collection Coordination Function (DCCF)	Centrally responsible for producing information to control the functions of the 5G network.
Analytics Data Repository Function (ADRF)	Acts as a repository that stores, retrieves and manages data, analytics, and machine learning models for the use of network elements.
Network Slice Admission Control Function (NSACF)	Prevents the overloading of 5G network slices by ensuring the controlled use of resources on a slice-by-slice basis.
Time Sensitive Communication and Time Synchronization Function (TSCTSF)	Manages and monitors the status of time synchronization on the 5G network.

7 IP-based telephone services in a mobile network

In addition to the above, critical parts of the communications network shall include the functions and measures of the communications network, as defined in the IP Multimedia Core Network Subsystem (IMS), pursuant to the 3GPP Technical Specification TS 23.228, which are used for the implementation of an IP-based public telephone service.

8 Entry into force and transition period

This regulation shall enter into force on xx Month 202x and remain in force until further notice.

This regulation repeals the regulation of the Finnish Transport and Communications Agency on critical parts of the communications network issued 19 May 2021 (TRAFICOM/161584/03.04.05.00/2020).

Helsinki, (dd) (mm) 20(yy)

First name Last name

Director-General

First name Last name

Title