



EU TOOLBOX FOR 5G SECURITY

A set of robust and comprehensive measures for an EU coordinated approach to secure 5G networks

5G: a new technology

While 3G made mobile internet possible and 4G allowed mobile broadband, 5G is expected to become the connectivity infrastructure that will pave the way for new products and services and affect all sectors of society. Benefits will include:



E-HEALTH

- Remote monitoring of health, patients' records and smart diagnosis
- Utilising robots to help surgeons and improve medical outcomes



SMART ENERGY GRIDS

- Highly efficient power lines and fewer outages on a smaller scale
- Easier deployments with lower environmental impact



FACTORIES OF THE FUTURE

- Better control over time-sensitive internal processes
- Remote control access to warehouse machinery



MEDIA & ENTERTAINMENT

- An amplified viewing experience such as virtual reality
- Ultra fast high-bandwidth applications such as video streaming



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#Cybersecurity

MOBILITY

- Enabling Connected and Automated Mobility with the goal of zero accidents
- Enabling connectivity in all modes of transport

Europe is one of the most advanced regions in the world when it comes to the commercial launch of 5G services, with an investment of $\in 1$ billion, including $\in 300$ million in EU funding. By the end of this year, the first 5G services are expected to be available in 138 European cities.

Cybersecurity of 5G: an imperative precondition

5G networks are the future backbone of our increasingly digitalised economies and societies. Billions of connected objects and systems are concerned, including those used in critical sectors such as energy, transport, banking, and health, as well as those used in industrial control systems which carry sensitive information and which support safety systems. Ensuring the cybersecurity and resilience of 5G networks is therefore essential.

At the same time, due to a less centralised architecture, smart computing power at the edge, the need for more antennas, and increased dependency on software, 5G networks offer more potential entry points for attackers.

Timeline



















12 March 2019

Report by the European Parliament.

22 March 2019

by the
European
Council.

26 March 2019

The Commission published a Recommendation for Member States to take concrete actions to assess cybersecurity risks of 5G networks and to strengthen risk mitigation

measures.

9 October 2019

The Member
States
finalised
the EU
coordinated
risk
assessment
of 5G
networks
security.

21 November 2019

ENISA, the EU Agency for Cybersecurity published an extensive report on threats relating to 5G networks.

29 January 2020

Publication of the toolbox of mitigation measures by Member States. The Commission Communication on the implementation of the EU

toolbox.

30 April 2020

The Commission calls on Member States to take first concrete, measurable steps to implement key measures.

30 June 2020

The Commission calls on Member States to prepare a report on implementation of key measures by Member States.

By October 2020

Review of the Commission Recommendation adopted 26 March 2019

EU Toolbox for 5G Security

Based on the EU coordinated risk assessment of 5G networks security, the toolbox lays out a range of security measures, which allows to mitigate risks effectively and ensure secure 5G networks are deployed across Europe. It sets out detailed **mitigation plans** for each of the identified risks and recommends a set of **key strategic and technical measures**, which should be taken by all Member States and/or by the Commission.



STRATEGIC MEASURES

- · Regulatory powers
- Third party suppliers
- · Diversification of suppliers
- Sustainability and diversity of 5G supply and value chain



TECHNICAL MEASURES

- Network security baseline measures
- · Network security 5G specific measures
- Requirements related to suppliers' processes and equipment
- · Resilience and continuity

Risks Mitigation Plans

For each of the nine risk areas identified in the EU coordinated risk assessment report, the toolbox identifies and provides risk mitigation plans. They consist of possible combination of measures based on their effectiveness.

EU Toolbox conclusions: key measures

Member States: they should have measures in place and powers to mitigate risks. In particular they should address these aspects:

- strengthen security requirements for mobile network operators;
- assess the risk profile of suppliers; apply relevant restrictions for suppliers considered as high risk, including necessary exclusions for key assets;
- ensure that each operator has an appropriate multi-vendor strategy to avoid or limit any major dependency on a single supplier and avoid dependency on suppliers considered to be high risk.

The **European Commission** together with Member States should take measure to:

- maintain a diverse and sustainable 5G supply chain in order to avoid long-term dependency, including by:
 - making full use of the existing EU tools and instruments (FDI screening, Trade defense instruments, competition);
 - further strengthening EU capacities in the 5G and post-5G technologies, by using relevant EU programmes and funding;
- facilitate coordination between Member States regarding standardisation to achieve specific security objectives and developing relevant EU-wide certification schemes.

In addition, the mandate of the **NIS Cooperation Group Work Stream** should be extended to support, monitor and evaluate the implementation of the toolbox.

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