

A LOOK INTO THE GROWTH AND RISKS POSED BY 5G ADOPTION

THE BOTTOM LINE

The fifth generation of mobile communications, known as 5G, will facilitate the mass expansion of billions of Internet-of-Things (IoT) devices and revolutionize the way we interact with the world around us. The technologies being developed to make 5G a reality—virtualization, artificial intelligence, software-defined networking, and more—will bring with them new security risks. Countries around the globe are in a race to be the first to deploy 5G, and thereby shape the future of mobile technology by setting standards and developing technology compatible with their own economic and national security interests.



THE DEVELOPMENT OF 5G TECHNOLOGY AND SECURITY

Why 5G has become such a focal point in the technological arena, it is important to understand what 5G is and why it is inherently vulnerable to both state-sponsored supply chain threats and cybercriminals alike.

5G represents the next generation of mobile connectivity and is being built to support a growingly connected ecosystem.



IOT IS EXPECTED TO

REVOLUTIONIZE



THE TECHNOLOGY PROMISES DATA SPEEDS EXCEEDING 10 GBPS, 10 TIMES FASTER THAN THE FASTEST FIXED-NETWORK FIBER OPTIC CABLES



5G is not a single new technology, rather a conglomeration of radio access technologies that will supplement existing 4G LTE networks.

Higher frequency millimeter waves ranging from




30 to 300 GHz

Small cell networks composed of thousands of low-power base stations



5G TECHNOLOGY SECURITY RISKS

The technologies behind 5G rely heavily on dynamic cloud-based virtual networking technologies like Network Function Virtualization (NFV) and software-defined networking (SDN). These technologies boost performance and reduce costs and latency, but their distributed, open, and programmable nature creates even greater security risks, including:

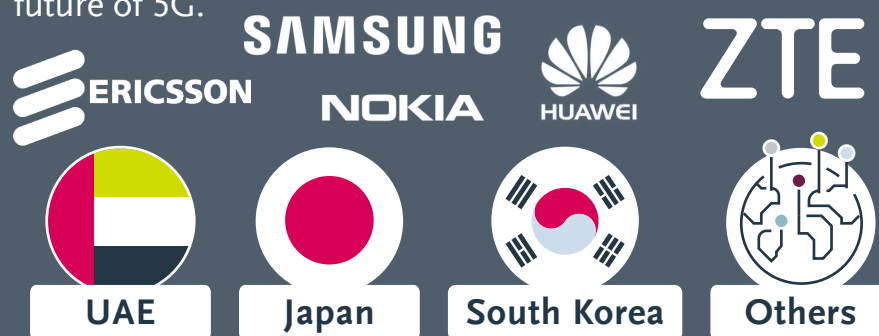
-  A compromised SDN controller could give attackers increased access to virtualized devices under its control.
-  Virtualization and extensive edge computing mean data is increasingly in transit and thereby more vulnerable to interception.
-  Increasing reliance on open-source software will present security challenges from supply chain threats.

IT MATTERS WHO BUILDS THE 5G NETWORK



U.S. cities initiated the early stages of citywide 5G network deployment with major telecommunication companies.

Abroad, the major network technology companies are jockeying to implement their technologies and build the future of 5G.



FORESIGHT

The next generation of communications technology, offers the promise of ubiquitous connectivity at lightning speeds, but brings with it new challenges in keeping our data secure from criminals and adversarial nations alike.

