Impact of mmWave 5G

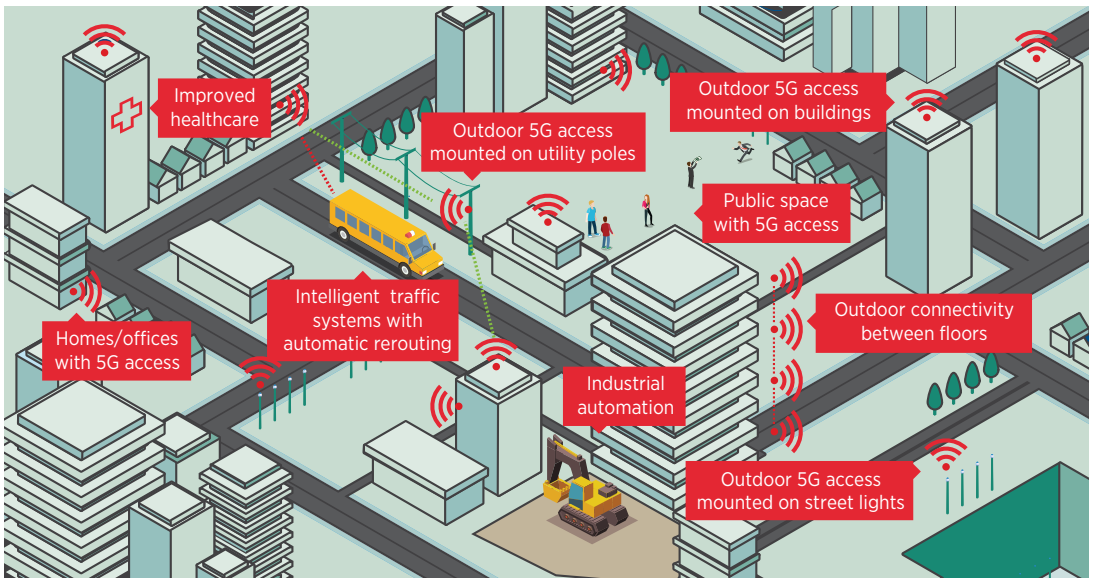
USE CASE OVERVIEW

The 5G world is an era of automation, and intelligent connectivity facilitating enhanced services - from personalised healthcare and enhanced welfare, to smart cities and transport.

The performance benefits of mmWaves, including ultra-high speeds and low latencies, will drive the revolutionary impact of the most advanced 5G services.

The economic impact of mmWave 5G is predicted to be $565 billion by 2034 and this worldwide. The potential for change in many areas of our lives and businesses is immense. This is the start of a new platform of services with mobile utilising mmWaves to create improvements for everyone - not just in developed economies.

This summary highlights just six use cases. There will be many more to come.

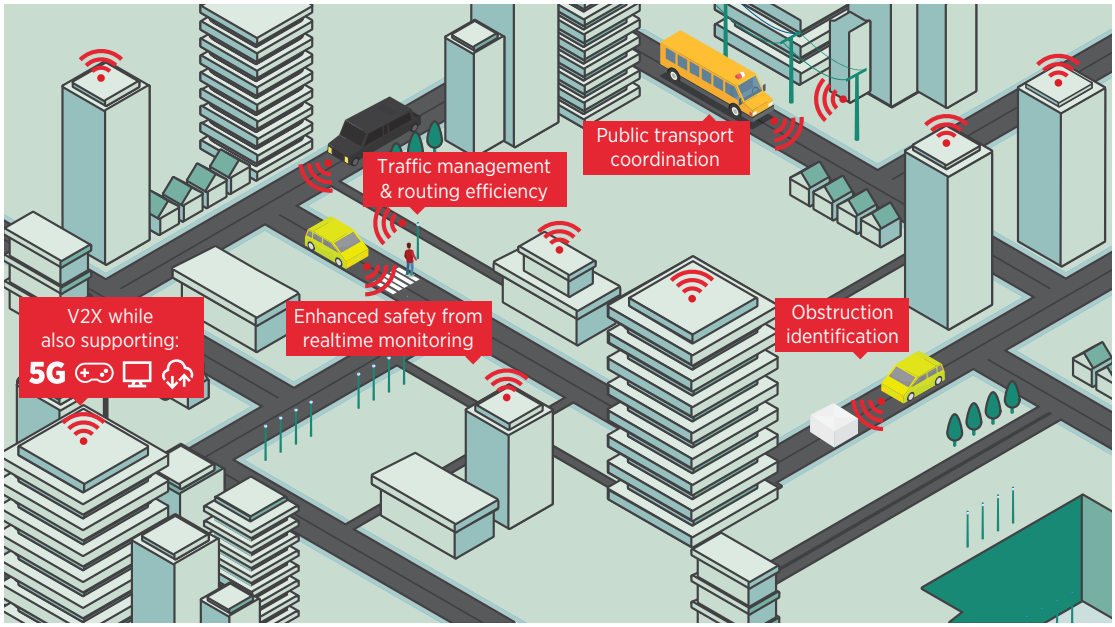


LIMITLESS CONNECTIVITY

mmWave 5G can vastly improve the connectivity, allowing policymakers to help improve quality of life for citizens. mmWave 5G provides fibre-like speeds without the high deployment costs of fixed infrastructure, allowing everyone and everything to connect to data-intensive 5G applications.

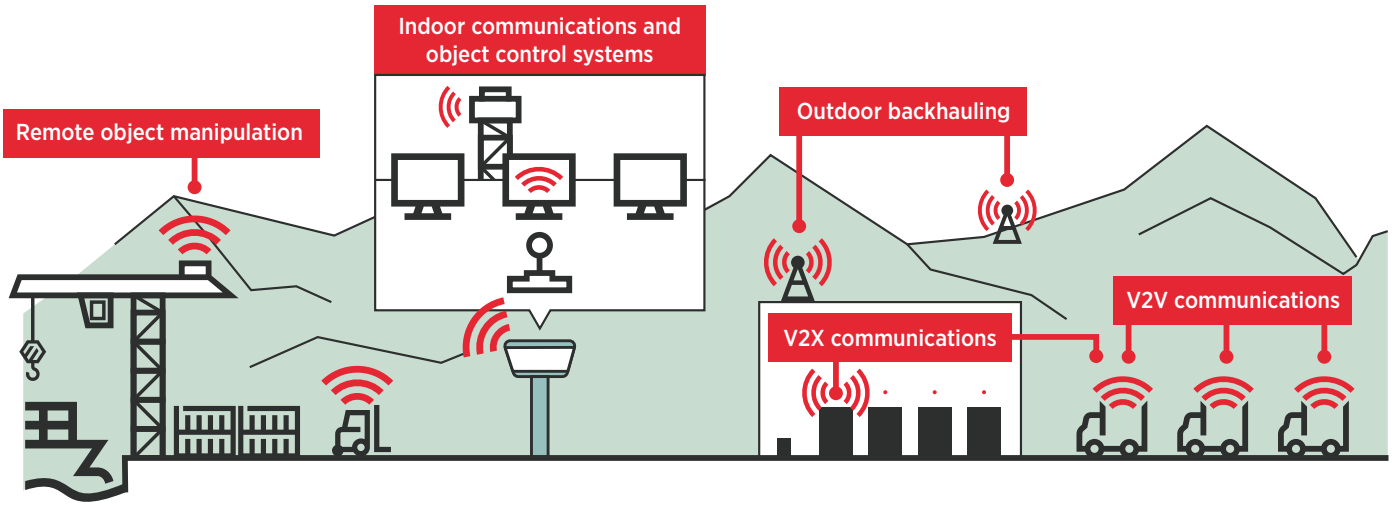
SMART TRANSPORT

mmWave 5G enables connected transport environments, including connected cars and public transport systems, and intelligent transportation systems (ITS). For example, mmWave 5G applications can help provide solutions to congestion, long commute times, and poor air quality.



Like previous generations of mobile technology, 5G has an impact on the daily lives of people, irrespective of where they live, in a number of different ways. However, not all of these benefits are reflected in GDP figures. According to the different use cases and verticals, additional potential benefits include increased access and availability to more advanced healthcare and education; reduced pollution and increased efficiency in transportation; and enhanced safety for large logistics hubs and within mining and oil industries.

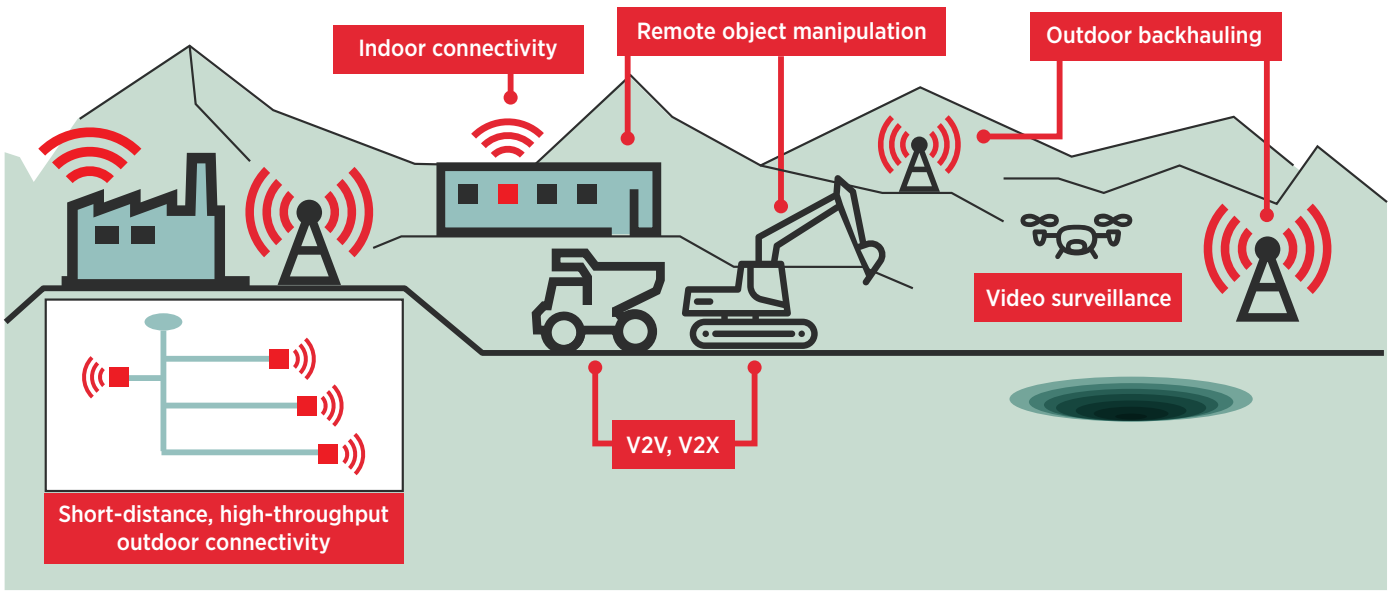
SMART LOGISTICS HUBS



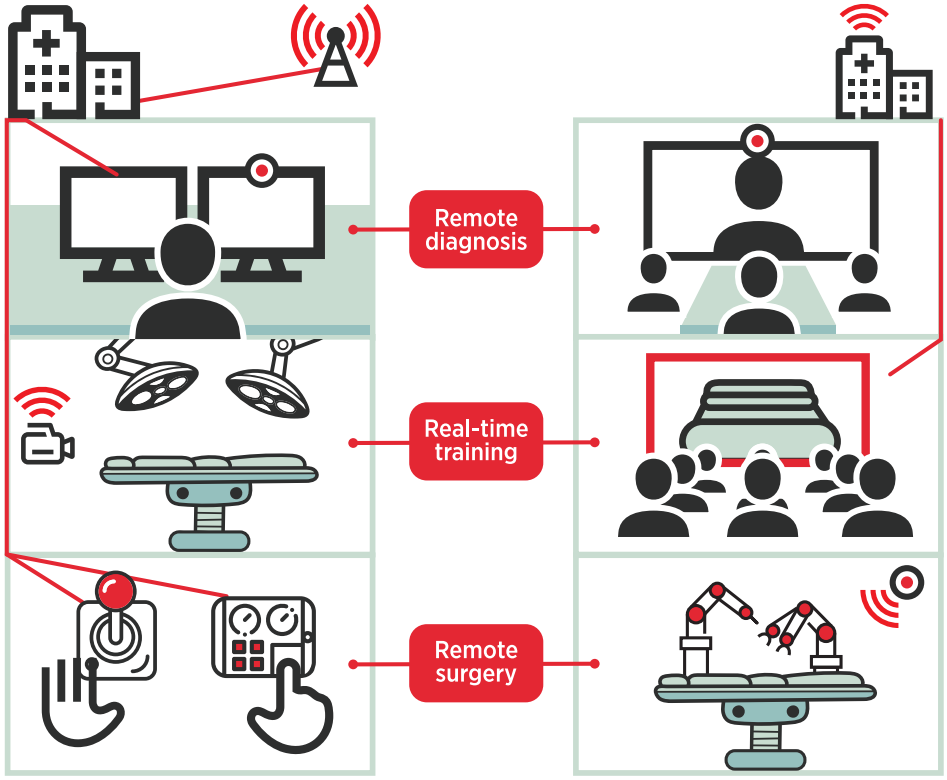
INCREASED PRODUCTIVITY AND SAFETY

mmWave 5G can help improve workforce productivity. Transport, logistics, mining and oil extraction, and manufacturing industries all stand to gain from mmWave 5G-enabled automation, connected transportation infrastructure and the introduction of remote object manipulation.

EXTRACTIVE INDUSTRIES

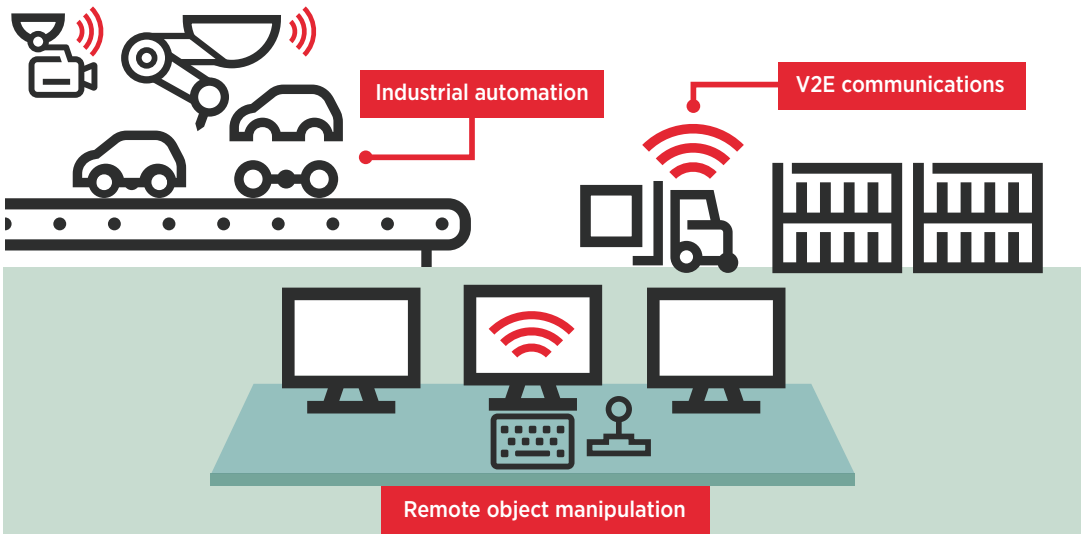


IMPROVED MEDICAL SERVICES IN RURAL AREAS



mmWave 5G will provide high-speed broadband that enables virtual training to healthcare staff, remote participation of experts during difficult procedures, and remote diagnostic services. These advances open the door for improved healthcare, especially through access to medical services in rural areas and higher-quality medical services overall.

INDUSTRIAL AUTOMATION



The performance benefits of mmWave 5G are a perfect fit for industrial automation. mmWave 5G-enabled automation, connected transportation infrastructure and the introduction of remote object manipulation will benefit industries in all parts of the world. These increases in productivity will be key to continued long-term economic growth, particularly in countries with declining population growth

GDP impact of mmWave spectrum by 2034

$565 billion

TAX
$152bn

2.9%
GDP growth

THE GROWING IMPORTANCE OF MMWAVES

52%

Rapid rise: mmWave contribution to GDP to grow 52% annually

11%
2025

25%
2034

The share of 5G services using mmWaves

The GSMA's positions on WRC-19 Agenda Item 1.13:

A successful identification of spectrum for IMT under Agenda Item 1.13 with optimal conditions is vital to realise the full potential of 5G networks

The GSMA supports the 26 GHz and 40 GHz bands

The GSMA also supports 66 GHz

Due to the large amount of spectrum needed for 5G services, the 50 GHz band also needs to be considered

Technical studies show that coexistence between IMT and other services is possible.

1.4bn the number of 5G connections in 2025

A LONG-TERM PROCESS

The mobile success story has not happened overnight. It is the result of a harmonised effort across the whole mobile ecosystem. No-one has done more with the spectrum it has, nor collaborated more effectively, to deliver a better future for everyone.

For the potential of mmWave 5G to come to fruition, spectrum with optimal conditions must be agreed at WRC this year.

Read the full report at:
https://www.gsma.com/spectrum/5G-mmwave-benefits

Read more about what we can accomplish at WRC-19 here:
https://www.gsma.com/spectrum/wrc-series/

October 2019