rain

5G fact sheet

What is 5G?

5G is the next generation of wireless data networks. It will bring three major advances:

1. A massive increase in speed and capacity compared to 4G networks.
2. The ability to connect millions of internet-of-things (IOT) devices.
3. Ultra-low latency and ultra-high availability of connections between devices, known as critical machine-to-machine communication.

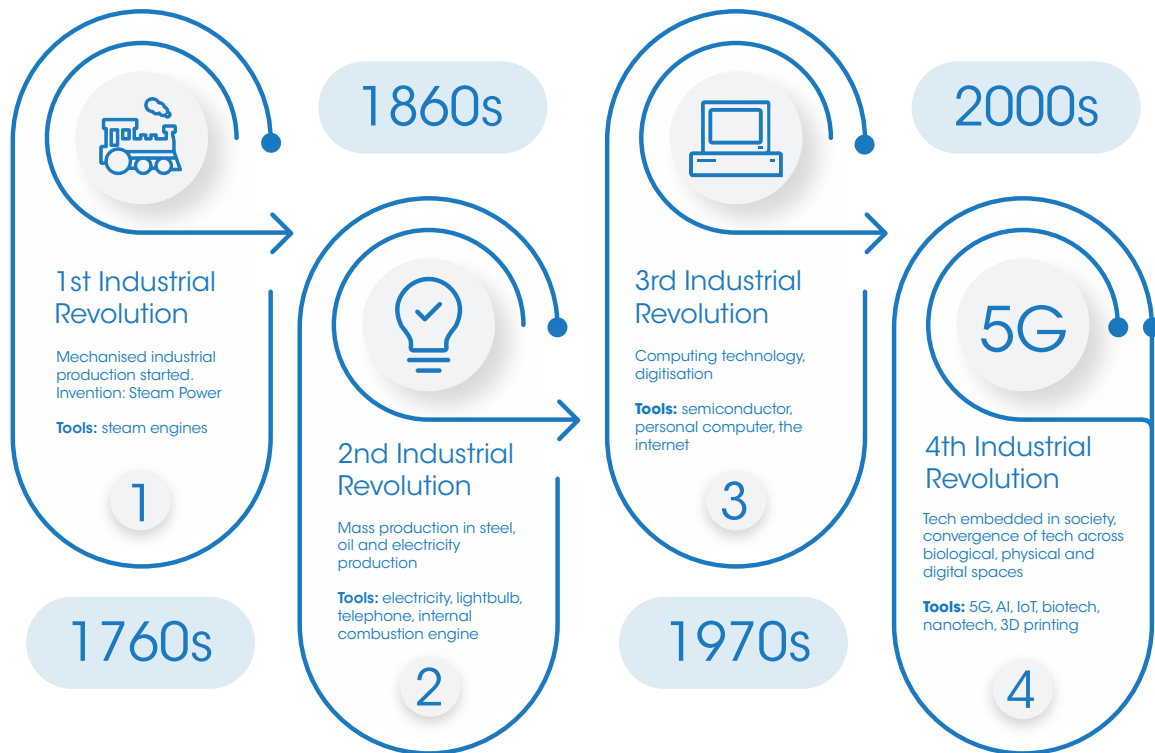| 4G vs 5G	4G	5G
Average speed	25 – 40 Mbps	200 – 700 Mbps
Latency	20 – 30 milliseconds	<10 milliseconds
No. of devices supported	4,000 devices/km2	±1 million device/km2

The first application of rain's 5G network will be ultra-broadband at homes and small businesses.
As more devices become available, 5G will become the standard for mobile and IOT networks.

In future, 5G will also enable critical machine-to-machine communication and ultra-low latency between devices.
This makes 5G a key pillar of the Fourth Industrial Revolution (4IR).

Industrial revolution timeline

1860s

2000s

1st Industrial Revolution

Mechanised industrial production started. Invention: Steam Power

Tools: steam engines

1

3rd Industrial Revolution

Computing technology, digitisation

Tools: semiconductor, personal computer, the internet

3

5G

2nd Industrial Revolution

Mass production in steel, oil and electricity production

Tools: electricity, lightbulb, telephone, internal combustion engine

2

1760s

1970s

4th Industrial Revolution

Tech embedded in society, convergence of tech across biological, physical and digital spaces

Tools: 5G, AI, IoT, biotech, nanotech, 3D printing

4

What can 5G do for South Africa?

rain has launched the African continent's first commercial 5G network and one of the first in the world. Some of the benefits for South African society are:

- **Lower cost of data:** improved access to fast broadband encourages economic growth which will help alleviate the unemployment crisis in the country.
- As a **foundational pillar of the 4IR**, 5G networks will support Government's initiatives to ensure South Africa benefits from these technological advances.
- **Smarter cities are safer cities**. 5G's ability to connect thousands of cameras and other sensors cost effectively can make our cities more efficient and safer.
- **Education can be revolutionised** by streaming classes to millions of students. Virtual reality application holds great promise for this sector.
- **Critical machine-to-machine communication**, together with augmented reality, can create thousands of jobs in South Africa, servicing international markets cost effectively. And so much more.

rain is collaborating with WITS University and Huawei Technologies to establish a 5G Innovation Lab. This exciting space will give young South African engineers a head-start to the push limits of 5G technology and develop new innovative applications.

rain is also a proud supporter of the Click Foundation. The Click Foundation deploys online English literacy programmes in under-privileged primary schools across South Africa. In doing so, the Click Foundation is not only addressing the literacy crisis but also equipping these young learners with the technological skills required for future success. rain has enabled the Click Foundation to provide more than 73,000 learners with access to the internet and their educational programmes. 5G will enable rain to connect more learners at affordable cost.
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rain's 5G network

rain began building the 5G network during October 2018. As at September 2019 we have close to 250 towers built in Johannesburg and Tshwane, with an estimated 500,000 households in the coverage area. During 2020, rain hopes to expand the network to Cape Town and Durban, and in due course cover all of metropolitan South Africa. rain plans to have up to 2,000 5G sites live in future.

rain has established close partnerships with international technology leaders such as Huawei Technologies ensuring that we build the network in line with best international practice. rain is leveraging its 4G network infrastructure to build a cost effective 5G network with wide coverage. Technically this is called a Non-standalone (NSA) 5G network. This allows rain to drive the costs of production down, enabling us to offer more affordable data products to more South Africans.

rain uses its licenced spectrum in the 3600 MHz band to deploy the 5G part of the network. This frequency band, together with the NSA architecture, allows rain to construct only a relatively limited number of new sites, and yet still provide significant coverage. This architecture has been adopted and implemented at scale in countries like South Korea, Japan and China.

The rain network is built conforming to all international safety standards (set by the World Health Organisation), as well as all local regulations. Given that we use a frequency band similar to 4G/LTE, 5G poses no increased health risks.

In some areas of the world, 5G networks are built using millimetre wave (mmWave) spectrum bands. This requires far denser networks (i.e. many more towers), at much great cost compared to rain's NSA design, which is more appropriate for the South African context.

rain's 5G home product offering

rain has invited customers to purchase our 5G home internet offering at R1000 per month. Clients can order a state-of-the-art Huawei 5G router on the rain website and have it delivered to their home for free. The 5G home router is plug-and-play and immediately connects a user to ultra-fast internet. The router provides gigabit ethernet ports and the latest generation of fast Wi-Fi 6 to connect devices.

As the ecosystem matures many more 5G devices (such as dual SIM mobile phones, MiFi's, tablets and 5G connected laptops) will become available at affordable cost.

For more information visit rain.co.za or contact media@rain.co.za

unlimited data
R1000
per month

5G router
R3450
once-off

HUAWEI

rain5G