



Traffic Control 6000 - Essential Communications Platform to Deliver Messaging Moments in 5G

Global Statistics

The number of 5G deployments are Global Statistics increasing month on month.

According to the GSMA, there have been 81 commercial launches of 5G, reaching up to 7% of the world's population.

5G penetration is expected to grow to over 20% of the world's population by 2025 (GSMA, 2020).

81

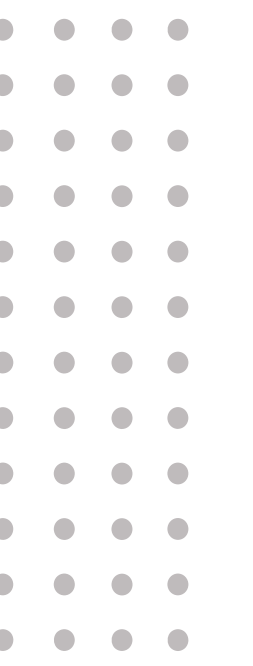
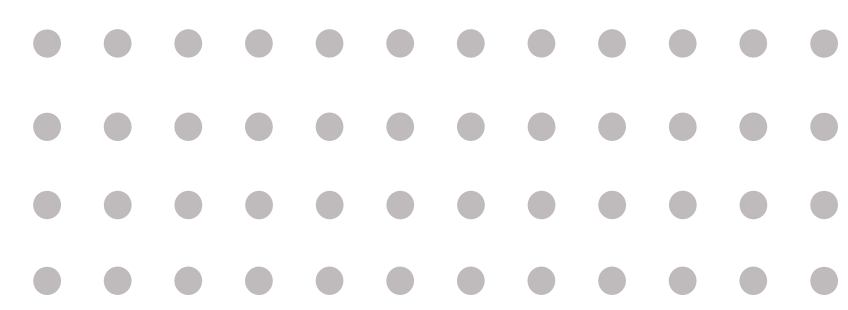
Commercial 5G Launches

7%

Population Penetration

20%

Global Connections by 2025



Openmind Networks' communication platform, Traffic Control 6000 (TC6000), has been delivering messaging moments for over 17 years. As the penetration of 5G increases, operators will continue to rely on the Short Message Service to generate revenues. SMS is used to connect billions of IOT & M2M devices and creates messaging moments every second of every day between brands, businesses and customers.

TC6000 is entrusted by operators, hub providers and aggregators across the world to process billions of messages. From time-sensitive banking and two-factor-authentication messages, to marketing and health broadcasts, to person-to-person chats, Traffic Control is the communication platform to trust 5G.

APIs to suit any business or application, TC6000 is the gateway to reach customers wherever they are.

As a cloud-native application it can be deployed quickly, integrated seamlessly, and scale on demand in any network. It is the essential communication platform operators need as their networks evolve towards



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Source: GSMA, 2020

Operator **Benefits**

Openmind's Traffic Control 6000

Openmind Networks is a company of messaging experts. Our customers have benefited from that expertise to build profitable messaging solutions that suit their individual needs. Traffic Control is a truly consolidated messaging platform, capable of being deployed into NFV, virtualised or physical-server data centres. TC6000 supports SMS, MMS, RCS and USSD, as well as a variety of APIs for A2P messaging. Our feature richness allows TC6000 to deliver SMS messages to devices connected to 3G, 4G and 5G networks. AI (Artificial Intelligence) will have a key role in 5G networks. Openmind's customers are already benefiting from the latest AI technology to help them better understand and protect their networks.



Cost Control

Cost control is achieved by having a single consolidated platform for SMS messaging on any access network, including 5G. TC6000 is highly configurable so that it integrates to any existing network. The platform scales on demand and it is automatically, and seamlessly, upgraded with zero downtime.



Ease of Management

Ease of Management is key to any successful service. Openmind achieves this by using the latest automation and DevOps processes. TC6000 is deployed quickly and is validated using an automated suite of test cases. The entire cluster is centrally managed using the intuitive web management interface.

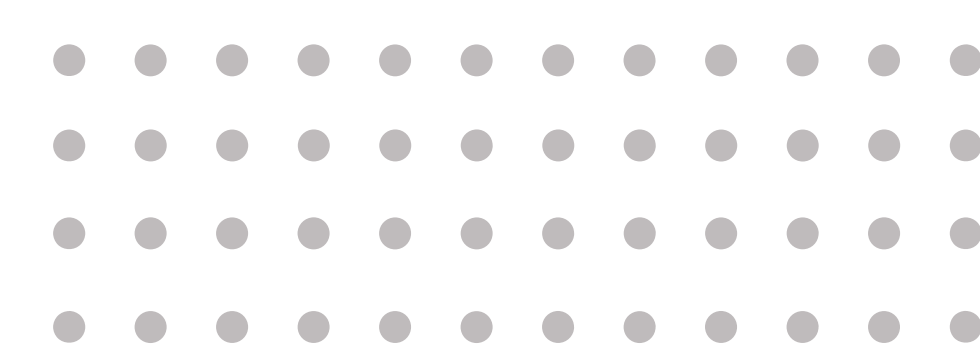


Innovate

Innovation is made possible through our unique ability to release a feature and have it automatically updated to customer systems, without interruption to service. The latest features are delivered to each customer allowing them to activate and go-to-market quickly. As SMS in 5G progresses, the continuous delivery process, and AI technology will be key capabilities for operators looking to monetise messaging.



What's **New** in 5G



A lot is new, but the SMS messaging basics are the same. SMS in 5G allows for devices to continue to send and receive text messages. Enhanced messaging capabilities, such as chat, group chat and multimedia sharing are available with RCS (Rich Communication Service). Although SMS in 5G is not introducing new capabilities, it is still the only messaging service that is ubiquitous on all devices across the world. Therefore it remains an essential service for operators and customers.



SMS in 5G introduces a new component called the SMS Function (SMSF). The SMSF acts as a proxy between the 5G access network, and the existing SMSC platforms.

Openmind Networks is the market leader when it comes to the all-in-one/consolidated messaging platform. We have successfully deployed our 4G IP-SM

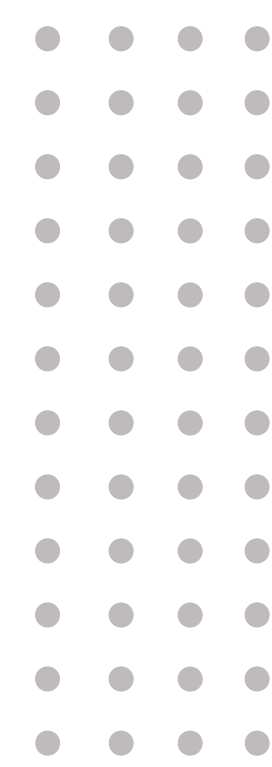
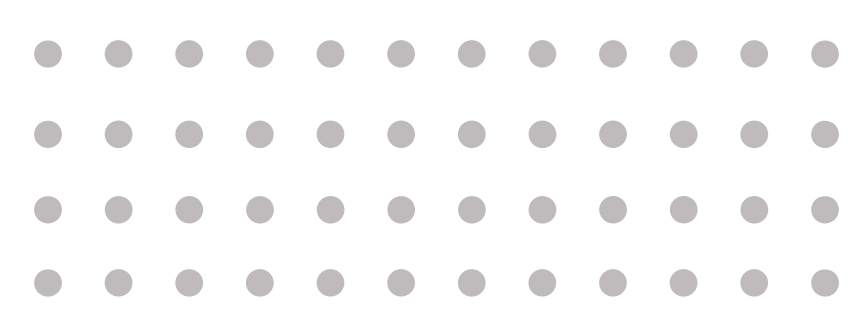
Gateway product onto live Traffic Control SMS platforms. The SMSF capability for 5G networks will be no different.

The SMSF will be a new product on the Traffic Control 6000 platform. Messages received from 5G are adapted to our common message format for processing. Our internal logic allows the Traffic Control routing engine to select the correct delivery channel to reach the end recipient, whether they are connected to a 3G, 4G, or 5G network.



5G SMS Use Cases

SMS in 5G offers the same capabilities that operators, subscribers and enterprises use today. The growth in SMS A2P traffic is expected to continue well into the coming decade. Every business can continue to rely on Openmind's SMSC to take care of delivery regardless of the radio network a subscriber or device is connected to. For subscribers, they can continue to rely on SMS as the only ubiquitous mobile messaging service for Person-to-Person messaging across the world.



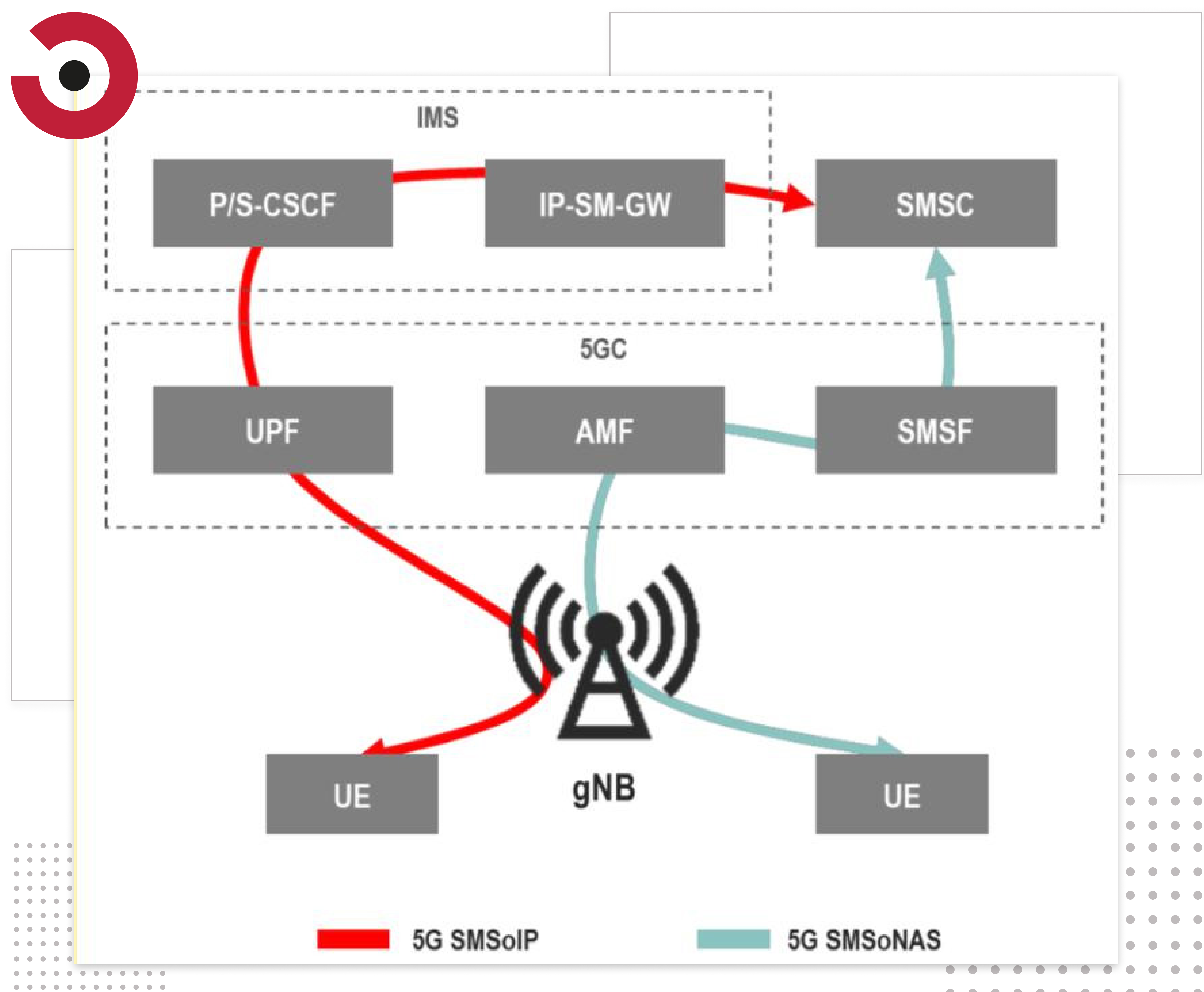
Massive IOT is another area where SMS will be an invaluable technology, and which will generate revenues for operators. SMS has been used for decades to enable machine-to-machine (M2M) communication. In 5G, M2M and IOT devices are set to explode in use. A Business Insider report estimates that there may be up to 41 billion IOT devices by 2027 (The Internet of Things, 2020). A portion of these devices will use SMS for communication, as it remains a lightweight protocol that can be used to 'wake-up' devices, or to remotely configure devices using OTA provisioning. IOT communication will be made easier for operators with Traffic Control's API, routing and AI capabilities.



Technical Use Cases

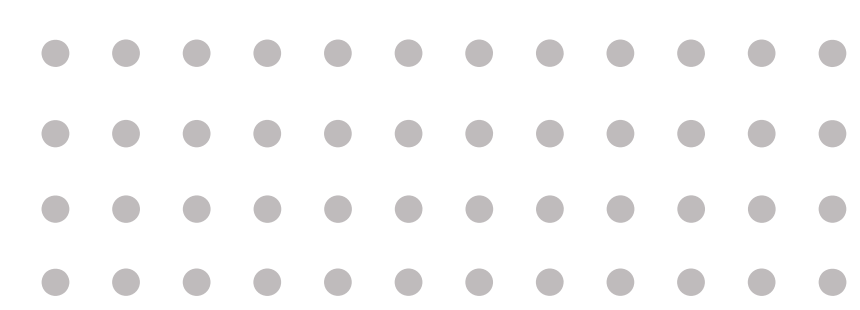
For SMS in 5G there are two options that can be implemented. SMS over IP (SMSoIP) using an IMS core or SMS over 5G NAS (SMSoNAS). SMSoIP utilises the Openmind IP-SM Gateway to send and receive SMS messages encapsulated in SIP packets. Devices can attach to the IMS core via 5G and 4G radio networks for sending and receiving messages. For operators who already have Openmind's IP-SM Gateway, then there are no changes required to support 5G SMS. Devices will automatically register to the IMS core, and they can send and receive SMS using the IP-SM Gateway.

MSMSoNAS requires a new component in the 5G network, called an SMS Function (SMSF) - defined in 3GPP TS 23.501. The SMSF is a consideration for operators who do not have an IMS network, or operators who will have many 5G data card/Machine Type Communications devices that do not support IMS connectivity. Devices configured to use 5G SMS, will register to the network and be assigned an SMSF. The SMSF then converts the SMS message to an existing SMS protocol such as Diameter or MAP to deliver to the home SMSC of the subscriber. The network architecture of SMSoIP and SMSoNAS is shown below:



Implementation

Operators who wish to launch SMS in 5G, and who have an IMS core, can immediately support 5G messaging with Openmind's IP-SM Gateway. The IP-SM Gateway product can be co-located with any existing Traffic Control SMSC deployment. For operators without an IMS core, or with a need for 5G connected IOT devices, then an SMSF component is required to support SMS in 5G. TC6000 supports this new component, and it can be deployed with any existing TC6000 SMSC, or as a standalone product in-front of existing SMSCs.



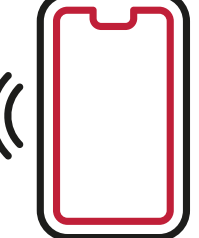
For Hub's, routing of SMS messages between networks will continue to be done via MAP, or Diameter. Roaming subscribers will be allocated a local SMSF in the network they are attached to. This SMSF will convert SMS received over 5G to an existing protocol such as MAP or Diameter before it is routed via the hub to the destination operator. Aggregators wishing to deliver A2P messages do not need to be concerned about the final leg of delivery. Openmind's SMSC will select the route that will ensure delivery to the mobile device, regardless if the device is attached to 5G, 4G, or 3G network. Aggregators can therefore continue to use the APIs that they have today for SMS messaging.



About Openmind Networks

Openmind are world leaders in mobile messaging. Our consolidated and flexible platform, delivered via a DevOps process, provides our Mobile Operator, Wholesale Operator and Messaging Aggregator customers with new revenue-driving opportunities at the lowest total cost of ownership.

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