

DATA

# GSM BACKHAUL





## DATA

# TAILORED BACKHAUL SOLUTIONS TO CONNECT HIGH-CAPACITY MOBILE NETWORKS

**COMMUNICATIONS REQUIREMENTS ARE EXPANDING DRAMATICALLY. WITH GROWING PUBLIC DEMAND FOR NEW SERVICES AND DEVICES, MOBILE NETWORK OPERATORS FACE INCREASING PRESSURE TO PROVIDE BACKHAUL CONNECTIVITY FOR GSM NETWORKS.**

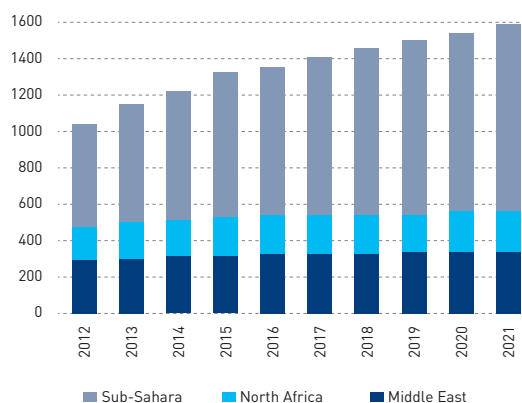
By 2021, the population of Sub-Saharan Africa is expected to surpass 1.5 billion<sup>(1)</sup>. Becoming the principal source of global population growth, it will represent a large labour force. With smartphones increasingly affordable, and innovative solutions like mobile payments facilitating economic development, demand for mobile connectivity continues to rise.

Despite benefiting from the massive roll-out of fibre to the coast, and the creation of networks within countries, many areas do not have the terrestrial infrastructure in place to connect these networks and keep pace with the increasing demand for bandwidth, whether due to practical or financial reasons. For example, across Africa, there are still areas where only satellite technology can allow mobile network operators to backhaul GSM networks and connect BTS/NodeB/enodeB, Base Station Controllers (BSC) and Mobile Switching Centres (MS).

### **HUGE MARKET POTENTIAL FOR MOBILE SERVICES IN AFRICA**

With the increasing popularity in mobile services, 55% of people in Africa and the Middle East owned a mobile phone by the end of 2016. Many of these people have multiple SIM cards, which has seen the mobile market reach 1.4 billion SIM cards at end 2016 - one billion of these are in Africa. Idate predicts around 3% mobile customer growth per year for the region as a whole, taking the total base to 1.6 billion users by 2021.

### **SIM CARD NUMBER GROWTH UP TO 2021 (Millions)**



Two thirds of this growth will be in Sub-Saharan Africa, with large countries such as Nigeria, the DR Congo and Ethiopia gaining tens of millions of new subscribers between 2016 and 2021.<sup>(1)</sup>

Data usage is also increasing, with user numbers set to virtually double between 2016 and 2021, up to 800 million subscribers and 52% of mobile plans<sup>(1)</sup>. By 2021 the average smartphone user in Africa is predicted to consume 6 GB of data per month, up from 1 GB in 2015. 70% of this will be used for video.<sup>(2)</sup>

An estimated 60%<sup>(1)</sup> of the population in Africa still live in rural areas and are not covered by high-speed networks. In many instances, satellite remains the only means of accessing the internet.

Backhauling solutions connect mobile network base stations fast and cost-effectively, bringing bandwidth to remote areas, providing redundancy for landlines, and off-loading traffic during peak times. They also provide crucial back-up solutions for mobile network operators to recover critical voice and international connectivity systems should the main line go down.

1. Idate 2017, Digeworld Yearbook for Africa and the Middle East  
2. Ericsson 2016

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## WHY CHOOSE SATELLITE FOR BACKHAULING?

**Flexible, scalable satellites offer cost effective and unlimited reach**

Satellites are a vital part of the connectivity ecosystem, guaranteeing reliable, resilient, high-capacity, high-speed communications across regions.

They offer a highly flexible solution, as bandwidth can be increased or decreased at any time, depending on business demand.

Providing seamless connectivity, any site can be covered within the satellite footprint, independent of terrestrial infrastructure or geographical terrain.

Remote sites can be deployed rapidly, without significant Capex investment or lengthy terrestrial installations.

Satellite technology can be combined with fibre or microwave solutions to enable network operators to connect sites which are difficult to reach.

## CONNECTING BASE STATIONS VIA EUTELSAT

**Tailored solutions for high-capacity trunks**

Eutelsat's wide range of solutions connect GSM networks rapidly and efficiently, from pure satellite capacity to fully-managed turnkey solutions for high-capacity trunks. For pure satellite capacity requirements Eutelsat offers competitively priced raw bandwidth.

To ensure a swift, seamless transition for existing networks, Eutelsat not only provides raw bandwidth at cost competitive prices, but also switch-over costs (dual illumination and remote antenna repointing).

Our fully managed solutions include the satellite-related infrastructure (hub and remote sites, RF and baseband) and associated services (operations and management, maintenance).

## THE BENEFIT FOR NETWORK OPERATORS

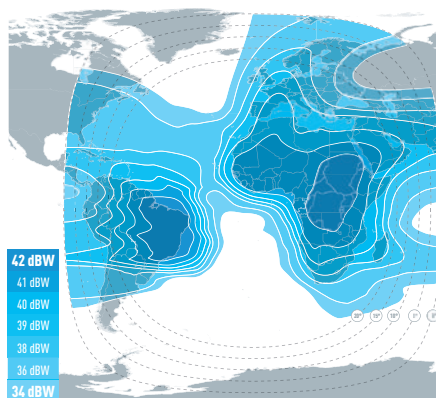
**Mobile Network Operators can extend their service area, rapidly and cost-effectively**

Eutelsat's GSM backhaul solutions ensure tailored connectivity for high-capacity GSM networks, allowing operators to focus on their core business, managing the traffic on their network.

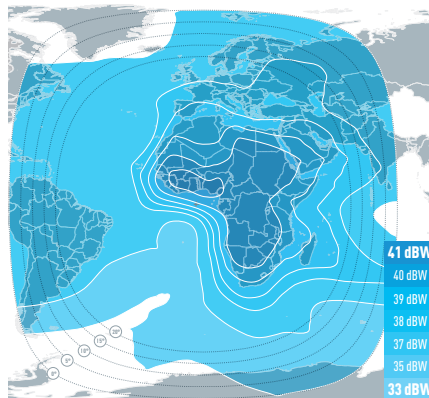
With the universal coverage provided by satellites, regardless of the availability and quality of the terrestrial infrastructure, network operators can deliver a consistent high-quality service to communities across a wide region.

Eutelsat's solutions are defined on a case-per-case basis. Whether operators simply require pure satellite capacity or a full turnkey service, our solutions can help reduce internal cost structures and generate new revenue streams.

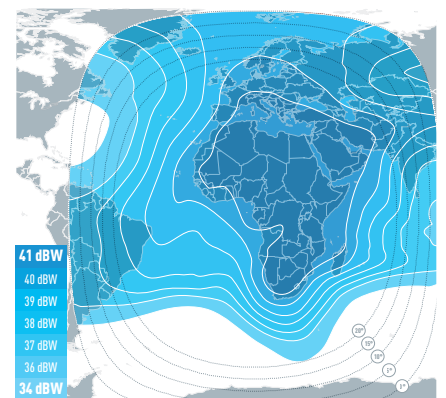
## POWERFUL CROSS-REGIONAL COVERAGE



EUTELSAT 8 West B C-band downlink



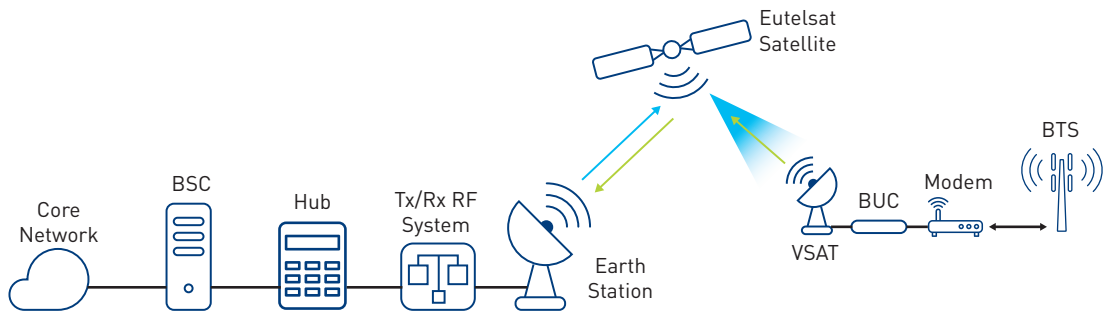
EUTELSAT 3B C-band downlink



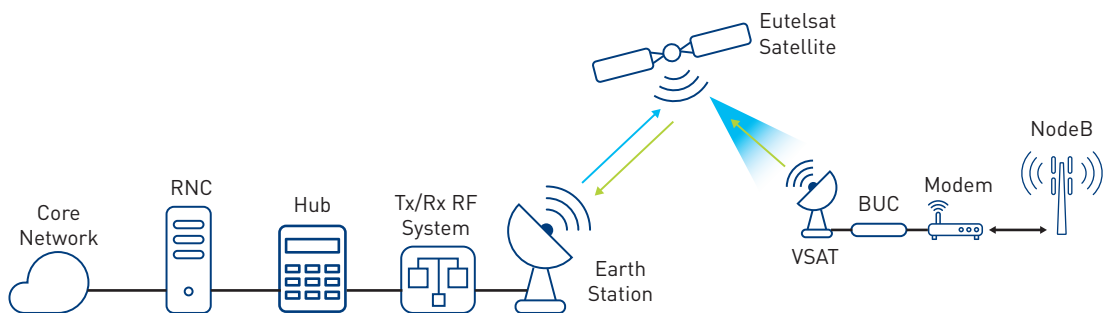
EUTELSAT 10A C-band downlink

# HOW DOES IT WORK?

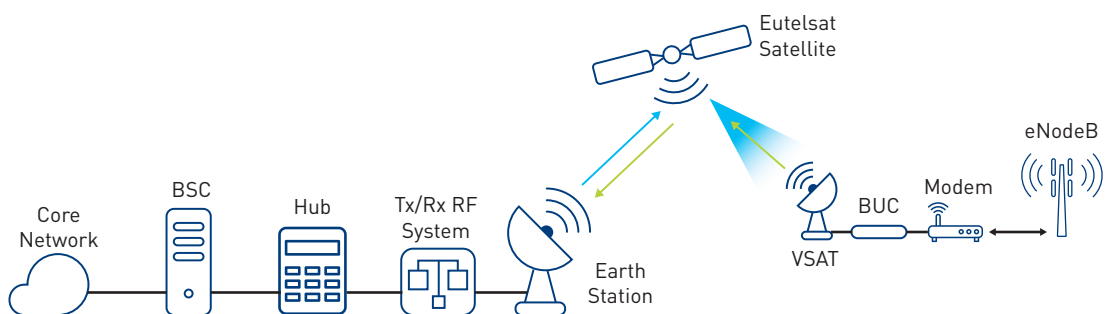
## 2G NETWORKS



## 3G NETWORKS



## 4G NETWORKS



What can we do for you? Please visit [www.eutelsat.com/enquiries](http://www.eutelsat.com/enquiries)