

The Digital Television Transition in Africa

What you need to know



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Nations across the expansive Africa region are making plans to switch to Digital Terrestrial Television (DTT), and for good reason. Digital signals provide improved reception quality and enable the delivery of expanded channel lineups and enhanced multimedia applications, such as video-on-demand and entertainment services. Switching from analog to DTT signals also allows for the more efficient use of spectrum, as frequencies formerly used by analog broadcasts can be repurposed for wireless networks that can contribute to national economic growth. But before a nation or license holder decides on an implementation strategy for DTT, they must consider three questions.

1: Which technical solution is most optimal for meeting the needs of viewers in a cost-effective way?

There are several factors that go into deciding on a technical solution for DTT distribution, and no two nations or regions are the same. The organization in charge of deploying the distribution network will need to:

- Understand and manage the ownership of spectral licenses
- Determine the responsibilities of the license holder
- Identify timelines for implementing digital distribution
- Schedule the shut-off date for analog signal broadcast
- Decide on the type of signal encryption
- Devise set-top box acquisition and distribution plans, and determine subsidization schemes, if any



Then there is the physical signal distribution solution itself. Nations that are small, densely populated and flat are well-suited for a terrestrial-only solution, in which fiber or line-of-sight microwave links deliver programming from a

central node to a network of wireless towers for over-the-air distribution. For larger nations with dispersed populations (Mali, Nigeria), island nations (Madagascar, the Seychelles) or nations with mountainous terrain (Ivory Coast, Tanzania), a satellite-based solution may be ideal.

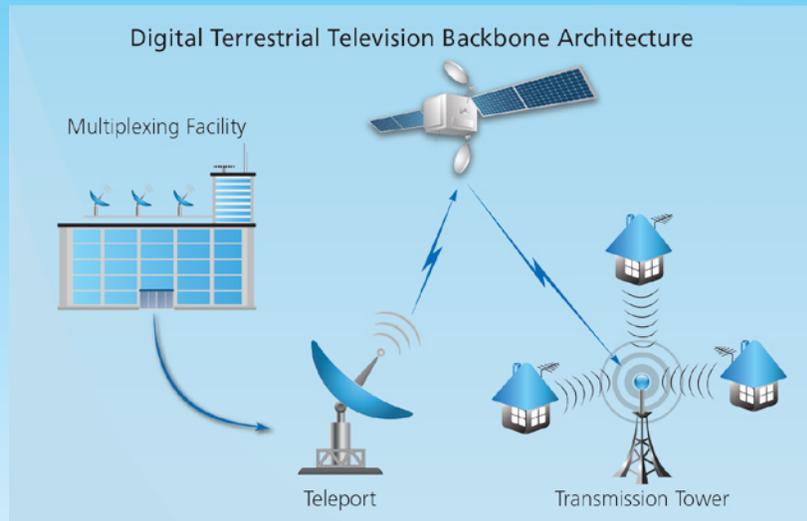
Many African countries also experience high rainfall, which leads to rain fade issues if Ku-band is used. In these areas, C-band is much more resistant to rain fade and a better choice for DTT distribution.

Satellite has always been a critical part of the content delivery chain for analog distribution in Africa, and it will remain so with the transition to digital.

2: What is the required level of population penetration, and is the desired programming line-up local content only or an expanded national and international bouquet?

Satellite-based solutions provide the greatest amount of flexibility for delivery of DTT signals. Satellite can be used as a means for delivering content from multiplexing centers to terrestrial TV towers, which then retransmit over-the-air signals into homes. Another option is to deliver programming via satellite directly to individual homes via small direct-to-home (DTH) terminals. A hybrid approach – in which satellites deliver signals to terrestrial TV towers in densely populated areas and directly to individual homes in sparsely populated regions – may be the most cost-effective solution.

Some nations or license holders may want to deliver only state channels, while others seek to deliver a broader bouquet of programming. Intelsat was the first to launch satellite services in Africa and the



first to support a DTH platform. Intelsat carries more TV and radio channels on C-band in Sub-Saharan Africa than any other satellite operator, according to Northern Sky Research. This allows customers to

create customized content bundles that best meet the needs of the population. Intelsat can also provide a way to export broadcast channels to viewers around the globe, expanding the viewing audience.

3: Will the solution that is implemented today be flexible enough to accommodate future growth of the platform?

Today, Intelsat serves the African region with both C- and Ku-band capacity on 25 satellites. Intelsat has access to uplink facilities in Johannesburg through our partner teleport, and the Intelsat fleet is complemented by more than 48,000 kilometers of fiber connections.

Satellite distribution remains the most reliable and effective means of delivering broadcast content to many users over a large area. Today Intelsat carries channels for six DTH platforms and 25 state broadcasters. As the demand for a wider range of programming and content localization grows, new solutions will be required to meet these

demands. With that in mind, Intelsat developed the next-generation Intelsat Epic^{NG} satellite platform. Launching in 2016, Intelsat 33e will serve the Africa region.

This is an innovative approach to satellite architecture utilizing C-, Ku- and Ka-bands, wide beams, spot beams and frequency-reuse technology to achieve a major design breakthrough for increased throughput and performance.

With the Intelsat Epic^{NG} platform, channels can be customized for a specific region or beam. Spot beams and frequency reuse provide greater throughput and drive lower cost per Mbit/s, changing the economic

model for delivering localized content. Working as an overlay to our existing fleet, Intelsat Epic^{NG} will offer customers the freedom to tailor content delivery to serve as large or as small of an audience as needed. Intelsat Epic^{NG} will also provide transmission to cable headends as well as point-to-point routes, with scalability and cost-effective contribution links for occasional use video applications.

To learn more about Intelsat, our DTT distribution solutions and Intelsat Epic^{NG}, visit: www.Intelsat.com.