

Mastering Kenya's frequency spectrum

The Communications Authority (CA) of Kenya has been operating a spectrum management and monitoring system (SMMS) from Rohde & Schwarz since March 2016. The networking solution includes both mobile and stationary components and is implemented across the country.



The CA monitors the HF, VHF and UHF frequency spectra from 11 stationary measuring and direction finding (DF) stations. Rohde&Schwarz also equipped four off-road vehicles to extend the range of the DF base and get a fix on interferer positions. The system is centrally controlled from Nairobi, and there is an additional regional operations center in Mombasa.

Through effective frequency management, the CA can prevent, detect and ultimately eliminate interference in radio-communications services. Monitoring the electromagnetic spectrum and locating sources of suspect signals is necessary to ensure undisturbed reception of radio services such as broadcast radio, TV and wireless communications. The R&S®UMS300, from the R&S®UMS family of universal monitoring systems, accomplishes these tasks quickly and reliably. It is the core of the new Rohde&Schwarz installa-

tion in Kenya. The R&S®UMS300 is enclosed in a compact, weatherproof housing that can be mounted directly on a mast close to the antennas. This results in high system sensitivity, making it possible to precisely locate even weak signals and expand the detection range.

Installation on masts or rooftops also reduces infrastructure requirements. Mounting the hardware at a certain height reduces the risk of vandalism and theft. The CA put its first Rohde&Schwarz system into operation in 1986. The system is still operational today. Rohde&Schwarz system solutions fulfill all of the relevant requirements and recommendations of the International Telecommunication Union (ITU) – the United Nations (UN) agency responsible for regulating the use of the frequency spectrum. Rohde&Schwarz has been globally successful in the field of spectrum monitoring for decades.



Inauguration of the new spectrum management and monitoring system (SMMS): ICT Cabinet Secretary Joe Mucheru (right) cuts a ribbon, accompanied by CA chairman Ngene Gituku (second from right) and Director General Francis Wangusi (behind the chairman).

Munich, March 14, 2016

In the summer of 2014, Rohde&Schwarz was awarded the tender to update and expand the CA's frequency management infrastructure. Final acceptance of the system took place in February 2016 after an on-schedule delivery and implementation phase. Mr. Mucheru, the Cabinet Secretary of the Kenyan Ministry of Information, Communication and Technology (ICT), said the system would be a critical regulatory tool that will facilitate efficient planning and utilization of the country's frequency spectrum resource in view of the increasing demand. "The higher demand between fixed and mobile services and between telecommunications and broadcasting, and the necessity for greater bandwidth mean that access to spectrum is becoming increasingly important," stated Mr. Mucheru.

Four mobile monitoring and DF stations.



R&S®UMS compact monitoring unit

R&S®ADD295

20 MHz – 3 GHz
Direction finding and
monitoring antenna

R&S®HL040

Log. - per antenna
400 to 3000 MHz

R&S®HL033

Log. - per antenna
80 to 2000 MHz

R&S®FU129

Antenna Filter Unit

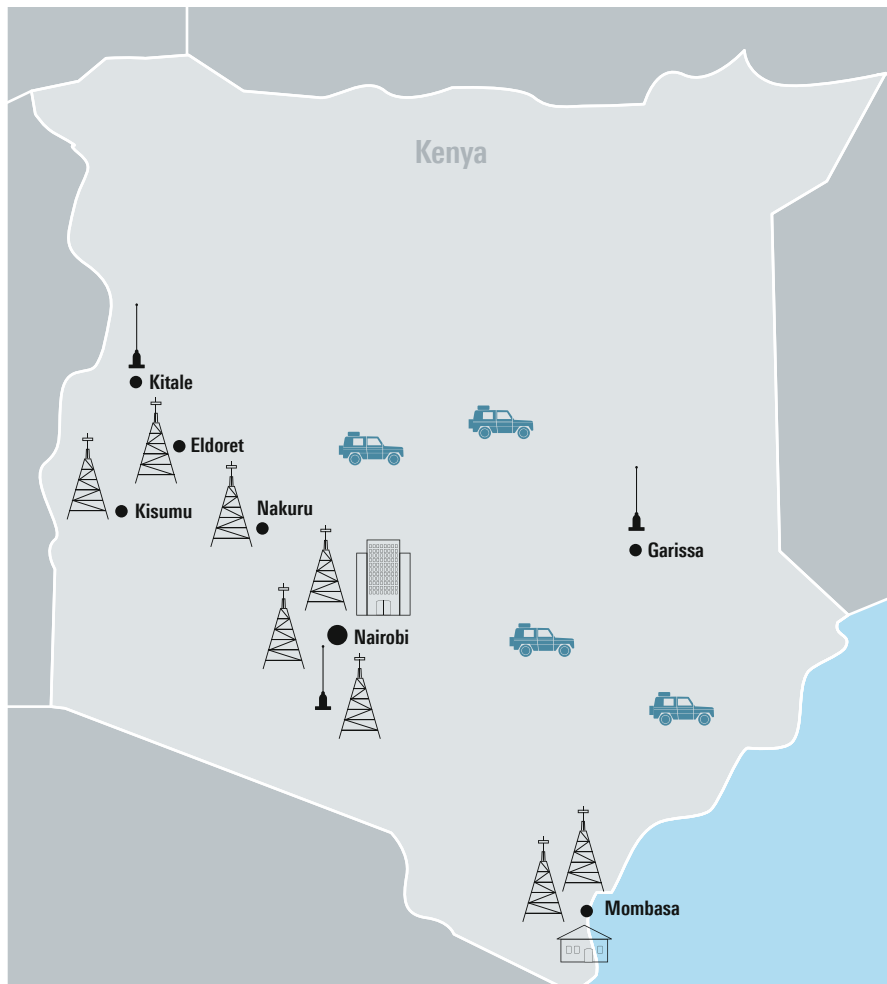
R&S®UMS300

Compact monitoring and
direction finding system

LAN or 3G/4G 115/230 V AC

- Receiver ITU compliant for exact measurements
- Direction finder provides AOA capabilities
- GPS receiver and antenna for high time accuracy and position data
- TDOA and hybrid geolocation capable
- Router enables control via LAN and 3G

System locations



Fixed V/UHF monitoring
and DF station



Fixed HF monitoring station



Mobile monitoring and DF station



Regional control center (RCC)



National control center (NCC)

Service that adds value

- Worldwide
- Local and personalized
- Customized and flexible
- Uncompromising quality
- Long-term dependability

About Rohde & Schwarz

The Rohde & Schwarz electronics group offers innovative solutions in the following business fields: test and measurement, broadcast and media, secure communications, cybersecurity, radiomonitoring and radiolocation. Founded more than 80 years ago, this independent company has an extensive sales and service network and is present in more than 70 countries. The electronics group is among the world market leaders in its established business fields. The company is headquartered in Munich, Germany. It also has regional headquarters in Singapore and Columbia, Maryland, USA, to manage its operations in these regions.

Sustainable product design

- Environmental compatibility and eco-footprint
- Energy efficiency and low emissions
- Longevity and optimized total cost of ownership

Certified Quality System
ISO 9001

Certified Quality System
ISO 9100

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