

## TV white spaces beneficiary story:

### Laikipia County Red Cross, Kenya

*Mawingu White Spaces Broadband Project*



**As the coordinator for the Laikipia County Red Cross in Kenya, Mr. Anthony Kuria** is responsible for liaising between the Laikipia County Red Cross branch outside Nanyuki and its nearby sub-branches, as well as the Kenya Red Cross Society's headquarters in Nairobi. The Laikipia County Red Cross branch and its four sub-branches provide county residents with disaster relief and community empowerment services such as support to families that have lost homes to fires (one of the most prevalent disasters in the region), flood and drought damage relief, automobile accident response and proactive education on topics such as nutrition and first aid. Blood donation collection, a quintessential Red Cross program, is also conducted by the Laikipia County Red Cross.



*Laikipia County Red Cross,  
Nanyuki, Kenya*

The Mawingu White Spaces Broadband Project is providing the Laikipia County Red Cross branch low-cost Internet access, a drastic improvement to the organization's efficiency and scope of services, and most importantly, its bottom line. Broadband Internet is transmitted via TV white spaces technology from the Mawingu pilot base station in Nanyuki to a receiver on the roof of the Laikipia Red Cross office, which is located outside town. A router then transmits the signal throughout the office creating a Wi-Fi hotspot.

Mr. Kuria says having Internet at the office allows the organization to accomplish more in less time, and saves substantial funds. "Before we had Internet at the office, we would have to shut down the branch to travel to town or to other Red Cross branches so we could exchange information or receive trainings," said Mr. Kuria. "Now we can accomplish tasks over the Internet that previously required a week of travel. We don't have to buy expensive service plans for our modems anymore, and we don't have to travel to costly Internet cafés in town to send reports to other Red Cross branches. The Mawingu White Spaces Broadband Project is a huge upgrade for our Red Cross branch."

Now Mr. Kuria and his colleagues use Microsoft Lync and Skype to give presentations to other branches and receive organizational trainings from headquarters. Work plans, reports and other documentation are easily sent via email, and simple matters that previously required in-person meetings or telephone calls can be communicated and resolved by email.



*Home fire disaster, Nanyuki, Kenya*

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Another hallmark service provided by the Red Cross in developing regions and disaster situations is locating and connecting missing people with their families. The Laikipia County Red Cross' Family Link Tracing Program has traditionally assisted families in finding their missing loved ones using Red Cross Messages, a paper form mailed via postal service to other Red Cross branches. This was a lengthy process – Red Cross Messages would be sent between multiple branches until the family member was located; then the news would take a few days longer to travel back to the initiating branch by mail. Email has expedited the service tremendously, enabling instant communication between Red Cross branches and families.

There is a hitch, however. Not all Red Cross branches have Internet access – or even electricity. As a result, expensive and time-consuming travel, phone calls and postal mail are still necessary means of communication between many branches. "We are hoping the TV white spaces technology will help improve communication with our sub-branches and other Red Cross offices by providing Internet access and solar power in more locations," said Mr. Kuria. "The community at large will benefit from the Wi-Fi and electricity available at the Red Cross sub-branches, if they get connected. Having broadband available at additional locations will help us do our jobs more effectively and serve more people in need."



*Victims receive donations via Laikipia County Red Cross, Nanyuki, Kenya*

The vision of increased connectivity delivered by TV white spaces technology for organizations in rural communities like the Red Cross extends throughout Africa, beyond the Mawingu pilot in Kenya. Mawingu is part of Microsoft's 4Afrika initiative to improve global competitiveness in Africa. In collaboration with the government of Kenya's Ministry of Information and Communications and Indigo Telecom Ltd., the pilot delivers low-cost wireless broadband access to previously unserved locations near Nanyuki, Kenya. The wireless technology used in the pilot is called dynamic spectrum access, which enables wireless devices to opportunistically tap into unused radio spectrum to establish broadband connections. The project in Kenya uses these new technologies to create broadband connections over the unused portions of wireless spectrum in the television frequency band (so-called "TV white spaces").

The initial installation near Nanyuki currently includes eight customer locations: Male Primary School, Male Secondary School, Gakawa Secondary School, Laikipia County Government Office, Laikipia Public Library, the Red Cross office near Nanyuki, the Burguret Dispensary healthcare clinic (operations to begin soon), and the first Mawingu charging and bandwidth agent. Employees at the Laikipia County Government Office will soon be enjoying Office 365 accounts. The students are taking advantage of Windows Multipoint Server ICT labs. In early 2014, an additional 33 end user locations will be added to the network, including several more schools, Mawingu agents, and businesses in the area. The network is featuring white space radios manufactured by Adaptrum and 6Harmonics.

Providing broadband to rural areas of Kenya is critical to driving prosperity in rural areas, as well as Africa as a whole. It gives students – both children and adults – a new way to experience learning, and rural communities the ability to connect to the world, improving opportunities for economic development via e-commerce and small business growth.