Pre-commercial TV white space projects take off in SA

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Local broadband technology solutions provider Indigo Broadband is working with telecoms regulator the Independent Communications Authority of South Africa (ICASA) and the Council for Scientific and Industrial Research (CSIR) to drive pre-commercial TV white space (TVWS) projects in SA.

Indigo Broadband was last week appointed the authorised Sub-Saharan distributor of TVWS network systems developed by California-based Carlson Wireless.

Television white spaces refer to unused frequencies in the wireless spectrum between TV broadcasts.

In 2018, ICASA published the final regulations on the use of TVWS, but commercial deployment of this technology is still unknown.

The CSIR has developed a tool that identifies and makes use of TVWS channels for broadband services without generating interference with adjacent primary licensed services. This harmonious co-existence between TVWS networks and TV broadcasting networks is made possible through a CSIR-developed technology called the white spaces spectrum database.

African nations have, over the years, been criticised by advocates of TVWS frequencies for underutilising the technology that can improve Internet access on the continent.

However, SA has been piloting some TVWS

See also

Development Agency said it was looking to improve

Internet access in the rural and semi-rural parts of South Africa, through a pilot project that utilises TVWS technologies.

In the past, Google, Microsoft, the CSIR, as well as the Wireless Access Providers Association led successful TV white spaces trials.

Broadband boost

Indigo Broadband says broadband networks that operate in the TVWS allow cost-effective connectivity for communities not serviced by the current market offerings that are either not available or unaffordable to them.

"Indigo has been working very hard over the past years to bring Carlson Wireless Technologies products to this region – in the right way," says Keith Pitout, CTO of Indigo Broadband SA.

"Meeting both the required ETSI [European Telecommunications Standards Institute] certification and the technical interfaces to regulator-mandated systems were followed, together with establishing the service and support resources to ensure this technology can be rolled out for commercial broadband services."

The product range includes the Carlson Wireless Gen3 and Gen3 Mini RuralConnect products.

According to Indigo, the long-range capabilities under difficult terrain makes the TVWS systems from Carlson ideally suited to rural or underserviced areas. It notes other radio technologies have limited or no range in a "near-line-of-sight application", making their deployment cost-prohibitive in many applications.

"We have been working with Indigo Broadband very closely, because TVWS technology has the power to radically improve access to Internet connectivity for many communities. However,

with local authorities," says James Carlson, CEO of Carlson Wireless.

"Indigo Broadband is a great partner for us in Southern Africa, with a rigorous technical process and years of hard-won expertise in deploying new connectivity technologies."

Trials began in 2013

On the underutilisation of TVWS technology in SA, Pitout told ITWeb via e-mail that SA is not unique in this regard.

He notes most countries have only just started seriously rolling out TVWS. "Like elsewhere, primarily the delays in SA came from decisions needing to be made on how to regulate dynamic spectrum allocation, coupled with our delays in the migration of analogue TV to digital transmissions.

"TVWS has not yet seen commercial deployment in South Africa despite trials going back as far as 2013. This long journey, however, means we have lots of experience with the tech in this country; we now just need to apply it to commercial rollout," he says.

Pitout explains there are no commercial services using TVWS yet, where people can pay for a service and get connected.

He notes this is due to the fact that with the core regulations being passed, some details still need to be finalised.

"In particular, the specific regulations around the all-important 'reference' geolocation database (GLDB) that manages which channels TVWS radios can use. This last barrier is now almost fallen, and things can start to move quickly."

He notes TVWS will help to reach and connect communities and build commerce in rural areas where existing line of sight technologies like Microwave or GSM Mobile cannot. It also has applications in Internet of things deployment in agriculture and mining.

"Indigo Broadband is currently investing 'sweat equity' of its founders in the millions of rands…and more importantly, is gestating projects well north of R20 million.

"We are very proud of the fact that Carlson Wireless is investing a considerable amount of its technical resources with us to get type-approval for this technology in South Africa, both in terms of the ETSI certification that is needed for ITU region one (Europe, Africa) and developing its firmware to handle South African requirements for GLDB integration," Pitout notes.

"Indigo is working closely with ICASA and the CSIR to assist with having GLDB regulations published. A few pre-commercial projects are in the works, but we need to ensure we move this technology forward in South Africa in full compliance with ICASA's requirements to ensure dynamic spectrum allocation and spectrum sharing is a sustainable model into the future. Once all this work is done, we can rapidly move to support independent broadband providers such as wireless Internet service providers to deploy TV white space networks."