



ITSO-UCC-INTELSAT Pilot for Remote Connectivity

Jean-Philippe Gillet | Matthew Abrams

ITSO Symposium 2018

12 June 2018

Agenda

A History of Events

- The need of an economical connectivity solution
- Commercial proof-of-concept
- Who are the partners and understanding the Ugandan market

Deployment Timeline and Key Takeaways

- Components, locations, supporting elements and planning
- Challenges and lessons learned

The Results

- Impact of the solution
- Performance and KPI's
- Media and reactions
- What's Next?



IntelsatOne Mobile Reach Solar

June 29th, 2017

Intelsat and Gilat Unveil Mobile Reach Solar 3G Solution for Mobile Network Operators that Need to Expand in Remote Areas

EPICNG | MOBILE NETWORK OPERATORS | PRESS RELEASE | 29 JUNE 2017

SHARE: [Twitter](#) [Facebook](#) [LinkedIn](#) [Google+](#)

Intelsat end-to-end managed service powered by Gilat cellular solutions delivers 3G connectivity using compact, solar-powered, easily deployable bundle

Luxembourg and Petah Tikva, Israel, 29 June 2017 – Intelsat S.A. (NYSE: I), operator of the world's first Globalized Network and leader in integrated satellite communications, and Gilat Satellite Networks Ltd. (NASDAQ, TASE: GILT), a worldwide leader in satellite networking technology, solutions and services, announced today a joint managed services solution to provide 3G infrastructure in the most remote locations around the globe, where terrestrial services are not feasible.

Mobile Reach Solar 3G, the newest addition to the IntelsatOne portfolio of managed and terrestrial services, is an end-to-end managed solution for mobile network operators (MNOs) who want to expand their service footprint efficiently into ultra-rural regions where traditional network buildouts are uneconomical. The turnkey, solar-powered package combines Intelsat connectivity, including services from the Intelsat EpicNG high-throughput satellite (HTS) platform, bundled with Gilat's industry proven VSAT system for small cell and cellular backhaul. The combination provides everything an MNO needs to expand 3G service over a 2.5-kilometer radius, including power supply, mono-pole, and all satellite and cellular equipment.

Mobile Reach Solar 3G is a small-cell over satellite package that can be carried by hand and installed by just a few people. It is intended for MNOs looking to extend services and address market needs, where unreliable or non-existent power supplies requires diesel generators to provide consistent service levels. In those environments, maintaining equipment and securing fuel can be the most difficult and expensive part of keeping traditional cell towers operational.

"There is a massive transformation underway in the communications sector, as technology advancements make it more economical to connect the unconnected. The Mobile Reach Solar 3G service is an example of the market expansion that will be enabled by the higher power, more efficient services provided by our Intelsat EpicNG platform," said Jean-Philippe Gillet, Intelsat's Vice President and General Manager, Broadband. "One of satellite's biggest advantages is the ability to easily reach areas where terrestrial connectivity is limited. Combining this with solar-based solutions means that our customers will be able to cost-effectively expand their networks. As they do so, remote regions will enjoy the economic benefit that always accompanies digital inclusion. Our innovations are unlocking new applications and markets."

"This turnkey solution includes a small cell form factor, a high performance VSAT and efficient use of bandwidth to reduce capital and installation costs, while mitigating deployment risks and driving immediate subscriber growth for the operator," said Ron Levin, VP Global Accounts at Gilat. "Mobile Reach Solar 3G enables MNOs to allocate resources where they are needed most, whether they want to expand their network's reach or improve the performance and quality of service for current

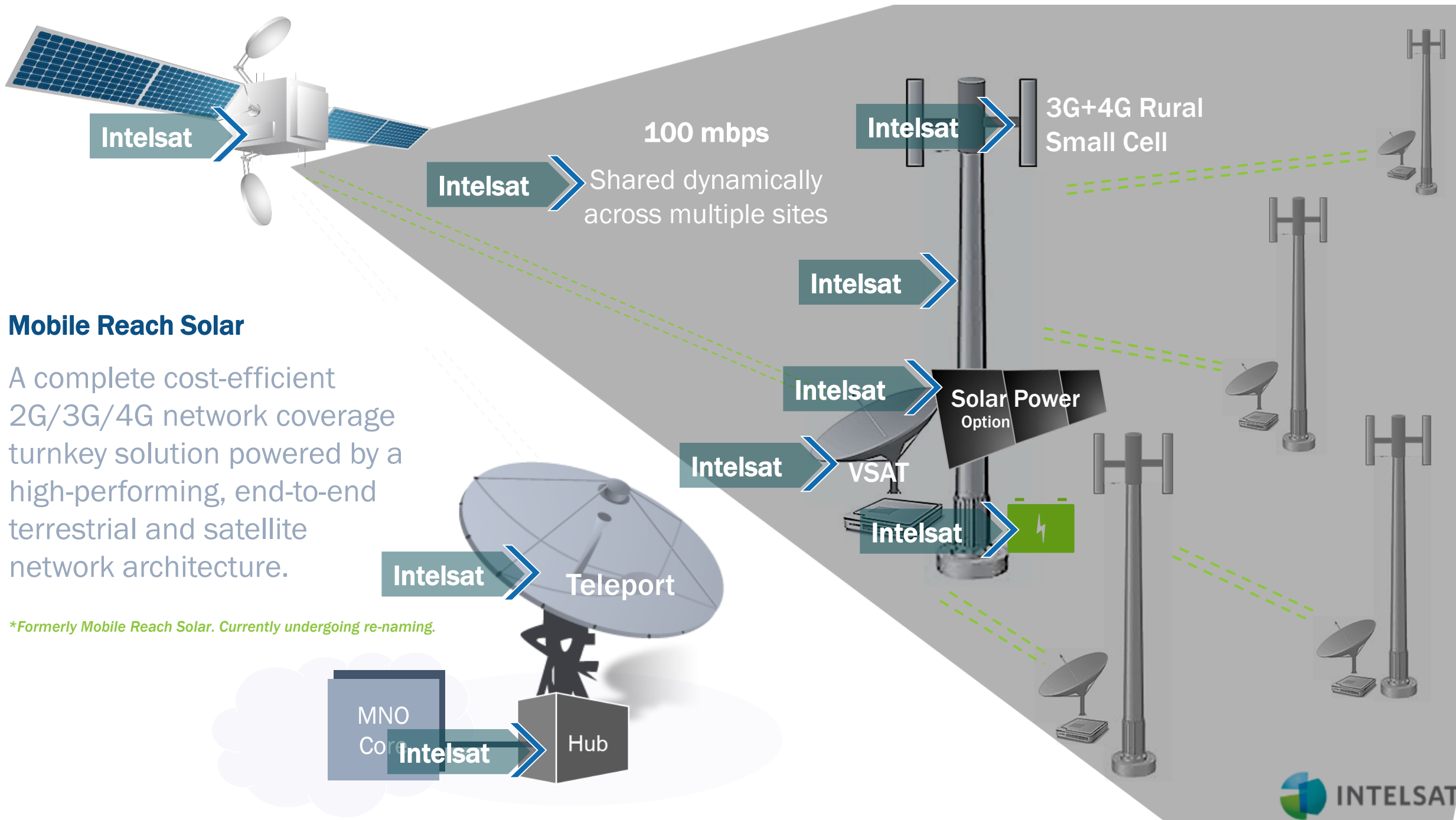
Commercial Proof of Concept



Market and Additional Partners Identified

- Accelerate broadband connectivity
- Provide access to broadband services at reasonable speeds
- Target for 2020: 3Mbps minimum speed – 50% of rural coverage





Deployment Timeline and Leanings

Presenter

Matthew Abrams, Senior Market
Advisor, Broadband



Deployment Timeline

Summary of events leading up to May 4th ribbon cutting ceremony in Kampala

- ITSO/Intelsat meeting where we identified a joint opportunity to accelerate the project
- Objective to have an event with leadership in advance of the Transform Africa Summit in Rwanda on May 9th.
- Target Date Range May 1-4th

Satellite Show
March 14, 2018

Ribbon Cutting
May 4, 2018

Transform
Africa Summit
May 9, 2018

Deployment Timeline

Summary of events leading up to May 4th ribbon cutting ceremony in Kampala

- Hub shipped from Kumsan to Uganda
- Hub received at Entebbe airport in Uganda
- Hub released from Customs. Gilat engineers on site
- Hub installation is complete and online.



Satellite Show
March 14, 2018

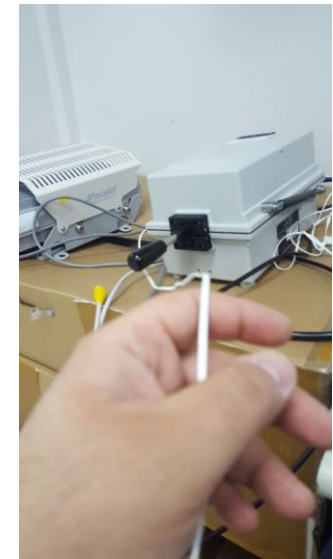
Ribbon Cutting
May 4, 2018



Deployment Timeline

Summary of events leading up to May 4th ribbon cutting ceremony in Kampala

- Arrival and clearance of Gilat equipment from Tel Aviv
- First test with Parallel Wireless Small cell at teleport completed successfully
- Integration efforts at MTN begin.
- Solar Panels arrive at Entebbe Airport



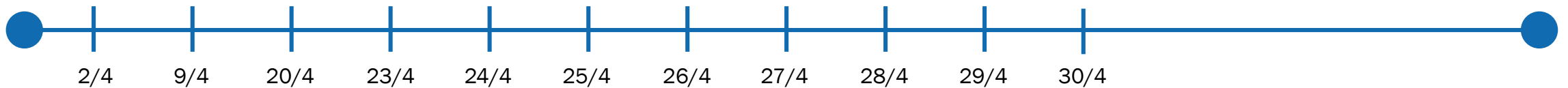
Satellite Show
March 14, 2018

Ribbon Cutting
May 4, 2018



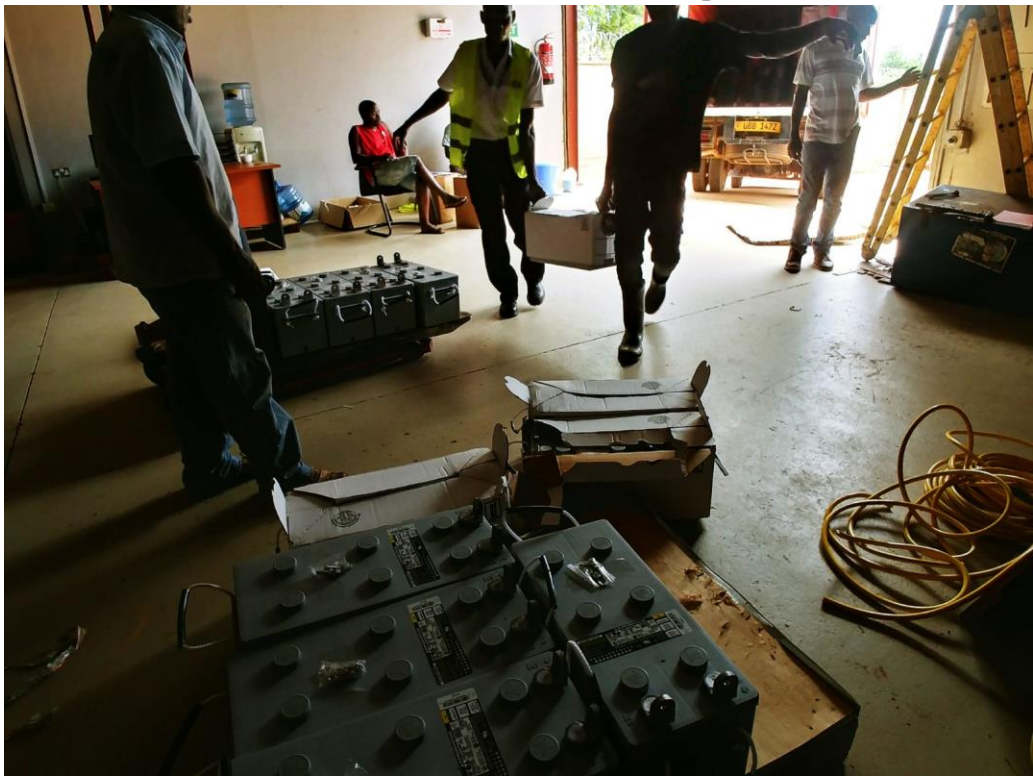
Deployment Timeline

Summary of events leading up to May 4th ribbon cutting ceremony in Kampala



Deployment Timeline

Summary of events leading up to May 4th ribbon cutting ceremony in Kampala



Challenges and Lessons Learned

Driving continued optimization for superior performance

Logistics

- Expediting equipment through customs
- Hub getting stuck at airport
addiitonal 8 days for clearance
- Aligning resource travel with
arrival of equipment

Challenges and Lessons Learned

Driving continued optimization for superior performance

Logistics

- Expediting equipment through customs
- Hub getting stuck at airport for 8 days for clearance

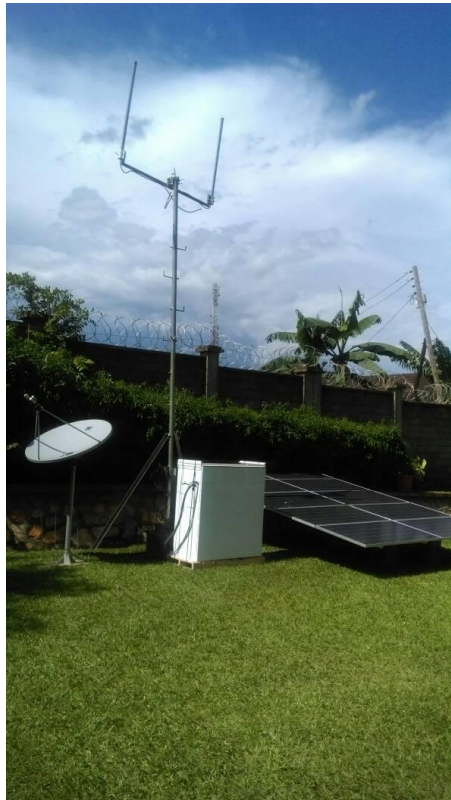
Geography

- Bufundi was severely impacted by weather
- Weather challenges put the deployment in Ntoroko at risk



Challenges and Lessons Learned

Driving continued optimization for superior performance



Roll-Out

- Vendor management and expedited contracting
- Licensing application and prioritized approvals
- Technical solution demonstration accompanied by a “Dummy” site
- Hours of testing and optimization

Pilot Impact, Status, and Next Steps

Presenter

Matthew Abrams, Senior Market
Advisor, Broadband

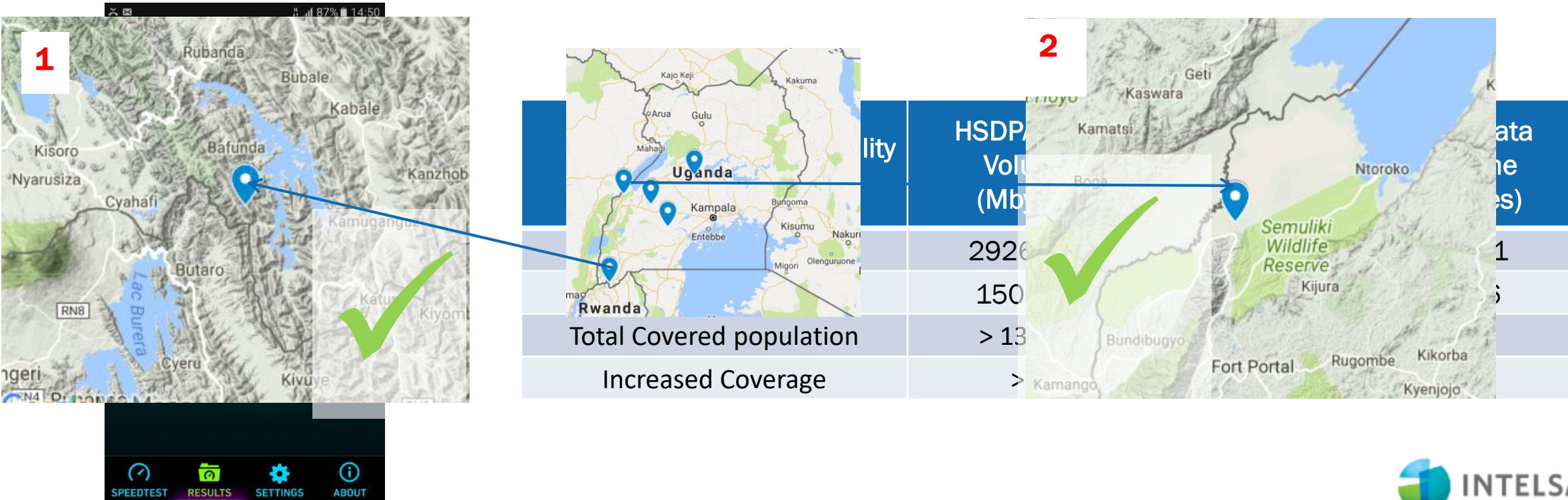


Remote Site Data

A giant step forward in record time

Site #1 – Bufundi Subcounty
Has a population of about 7000 people.
Nearest tower is Rwaburimbe 8KMs away

Site #2 – Kibuku, Ntoroko
Has a population of about 6000 people.
Nearest tower is Rwebisengo 12KMs away



May 4th Ceremony Media Impact

Launch for Villages

Internet Access

Yintaneeti yaakufunibwa mu masoso g'ebiyalo

Kyambogo

GAVUMENTI etongozza okukozesa tekinologiya wa 'Se-yintaneeti' mu masoso g'ebiyalo. Bw'abadde atongoza enkola eno, minisita wa tekinologiya n'okuwabuka eggwanga, Frank Tumwebaze agambye nti okusobola okunusa empeereza ya yintaneeti ey'omutindo ku bull muntu, gavumenti ebaddde endala okuyambisa enkola. Tubadde rweyambisa nkola ya kutambuza waya okuyita mu itaka kyokka eno erabika nga yaabuseere bw'obalumu okuva ku kutambuza waya ate ohusi ezitemebwa n'okubbibwa ate nga walwo n'ebifo ebizibu okutuukamu gamba ng'ensozi z'e Kabaale, Ntoroko n'ebitundu ebirala ne bisigala nga tebirina yintaneeti", minisita Tumwebaze bw'agamba. Enteekeeteeka eno etandikidde mu bitundu bya Kibuku - Ntoroko ne Bufundi - Rubanda nga ekitongole ekivunaanyizibwa ku by'empuziganya mu Uganda ekya Uganda Communication Commission (UCC) kikwata game ne kkampuni ya MTN, Intelsat, International Telecommunication Satellite Organization (ITU) ne Gilat okulabana ng'abantu basobola okufuna empeereza y'omutindo.

Satellite remains reach rural areas

Govt wants satellite connectivity for hard-to-reach areas

KAMPALA. The Ministry of ICT has said it is pursuing the use of satellite technology to complement the optical fiber in an effort to boost Internet connectivity.

At a media briefing in the weekend, Mr. Frank Tumwebaze, the ICT minister, said he was discussing with Intelsat a hybrid system that would use fiber-optic cables in urban areas and satellite technology in rural areas.

He said the government is looking at a media briefing in the weekend, Mr. Frank Tumwebaze, the ICT minister, said he was discussing with Intelsat a hybrid system that would use fiber-optic cables in urban areas and satellite technology in rural areas.

It would be a good thing when you have full coverage.

along side other officials, launching the satellite in Kigali. Photo by Dennis Nsubuga

because we believe that every society deserves to be connected.

"Satellite services have been at the core of communications networks throughout Africa for decades, but too many people in rural areas remain unconnected," said Intelsat CEO, Stephen Spengler.

player can solve the connectivity gap. He added that Intelsat will strive to economically expand broadband and Wi-Fi networks.

According to Spengler, the project will enable mobile network operators who want to expand their service footprint efficiently into rural regions where traditional network buildouts are uneconomical to do so with ease.

Tumwebaze said the project will be instrumental in accelerating Uganda's 2020 Broadband Strategy, which seeks to achieve 100% connectivity across the country.

The MTN chief technical officer Gordon Kyomukama said they will leverage the platform to extend its internet network coverage so as to connect more people.

Internet service providers' rural internet connectivity has previously been constrained by rampant vandalism of optical fibre cables laid internet service providers," he said.

Millions still unconnected

The Intelsat chief executive officer Stephen Spengler, said no single technology or industry can deliver the connectivity needed to reach the remaining half, and increased internet speeds.

attributed to the use of optical fibre which is not available throughout the country.

move to adopt optical fibre which he said is still poorly available throughout the country.

only 18 per cent.

and high quality, affordable in Uganda.

Network in areas of Uganda

Wimberly Lawson
Wright Daves & Jones, PLLC
Attorneys & Consultants at Law
100 FIRST NORTH STREET
BOX 1066
NASHVILLE, TENNESSEE 37203-0870
771-777-6870

CLICK HERE TO DOWNLOAD

recent posts

ground of 3G
ure and
rural areas of



May 4th Ceremony Highlights

“Our mission is to provide fast, reliable, high-quality broadband connectivity. This connectivity is affordable and sustainable over the long-term and can be replicated throughout other parts of Uganda.”

- Steve Spengler at the UCC



May 4th Ceremony Highlights

“ITSO is strongly committed to working closely with its member states to achieve the UN Sustainable Development Goals of 2030”

“Our hope with this pilot project is that it will not only succeed at the Bufundi and Kibuku sites, but it could be expanded throughout Uganda and further replicated in other ITSO member states...”

- Patrick Masambu - ITSO



May 4th Ceremony Highlights

“At MTN, extending the footprint of our network and services to ensure that we connect more people has been and remains a high priority for our company”

“Today, we are bringing broadband connectivity to two rural communities and fulfilling our mission—to brighten the lives of customers that we serve.”

- Gordon Kyomukama, Chief Technical Officer, MTN



May 4th Ceremony Highlights

“Extending broadband connectivity and delivering fast, affordable Internet services to everyone in Uganda remains one of the Uganda government’s primary missions,”

- Godfrey Mutabazi, Executive Director of the Uganda Communications Commission.



Next Steps

- Complete remainder of trial with regular reporting
- Publish final report for distribution
- Evaluate option of 2G connectivity
- Support ITSO event in June with site visits
- Leverage equipment and existing infrastructure for a permanent solution

Questions





<https://twitter.com/Intelsat>



<https://www.facebook.com/Intelsat-106822915740/>



<https://www.instagram.com/intelsat/>



<https://www.linkedin.com/company/intelsat>



<https://www.youtube.com/user/IntelsatMedia>