Satellites and Sun connect isolated communities to the world

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A solar-powered base station for mobile phones links the village of Tchintaborak, the Republic of Niger, West Africa to the world via satellite. Irish company Altobridge developed the base station and was aided in research and development by ESA. Credits: Altobridge

A mobile phone unit connecting isolated communities to the rest of the world using satellites and solar power has caught the attention of ESA and the World Economic Forum.

After developing a solar-powered base station for mobile phones that links isolated communities via satellite, Irish company Altobridge approached ESA for help in bringing the ground-breaking product to the marketplace.

“We were pleased to help with research and development because it connects rural communities that would otherwise have to wait years for phone service,” explains Michèle Le Saux, an ESA satcom specialist.

“This technology makes intelligent use of satellite bandwidth and has proved that a tough business case can work even with low revenue per user.”

School children from the village of Mambi in West Sulawsi, Indonesia. In the background the solar-powered base station for mobile phones is visible. Irish company Altobridge developed the base station and was aided in research and development by ESA. Credits: Altobridge

With ESA’s help, Altobridge has added new features, including local switching of calls and intelligent handover to other nodes in the public mobile network.

Costs have been reduced by integrating the remote gateway unit into a single-board computer inside the low–power, short-range base transceiver station.

Thanks to ESA, Altobridge is showing that mobile services can be provided while making efficient use of satellite bandwidth through patented call handling and signal coding.

The base stations are already being used by local communities in Asia,

Africa, the Pacific Islands and, more recently, throughout northern Iraq.

In June, Altobridge was recognised by the World Economic Forum as a 2012 technology pioneer.

A solar-powered base station for mobile phones links the village of Long Jekitan, Borneo to the world via satellite. Irish company Altobridge developed the base station and was aided in research and development by ESA. Credits: Altobridge

The annual awards acknowledge companies whose technology has the "promise of significantly impacting the way business and society operate".

Previous winners include Google, Twitter, Foursquare, Spotify, OpenDNS and Brightcove.

Commenting on the collaboration, Mike Fitzgerald, Chief Executive of Altobridge, said, "Several years ago we visited Malaysian Borneo and sat with unconnected communities there, gathering first hand its communications requirements.

"We then worked hand-in-hand with the service provider to understand

the unique challenges they faced in providing low-cost mobile connectivity to remote communities."

“ESA has been a vital supporter in all key stages of the research and development in this regard and without the support and expertise of the ESA technical officers we worked with, getting to market would have been impossible.”

Provided by European Space Agency