



SATELLITE PIONEER SKYFI'S VISION: WORLDWIDE INTERNET ACCESS

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More reliable than underwater cables, easily expandable, and capable of almost limitless communication – that's the promise of a new nano satellite-based network being developed by Israeli satellite startup SkyFi.

"Not only will we be able to develop a worldwide Internet, we will be able to enable any type of communication between two points – telephone, digital, and even television – with the satellite network we are planning to put in space," said Raz Itzhaki Tamir, co-founder and CEO of SkyFi.

Based in Tel Aviv, SkyFi, which recently presented its technology for the first time publicly at Microsoft Think Next, announced that it had raised \$3 million in an investment round led by Jerusalem Venture Partners, one of Israel's leading venture capital firms. Liberty Israel Venture Fund, a subsidiary of Liberty Media Corporation, also participated in the round.

Though the Internet reaches around the world, there are still some 4 billion people who are not online because they live in rural areas where there are no connections, either wired or wireless. Providing access to those areas has become an important goal for both Google and Facebook, both of which are spending hundreds of millions on systems that will bring Internet access to far-flung areas via drone or balloons.

Satellites have been out of the question, though; at \$60 million each, putting up a network of

satellites for worldwide Internet access would be too expensive.

Enter SkyFi, the brainchild of Tamir, a former director of nano satellite technology at Israel Aerospace Industries, among other things.

“We are planning to launch 60 nano-satellites that will cover the entire planet, working together in constellation that will offload tasks to each other as needed,” said Tamir. “Each satellite will cost a million dollars, so 60 nano-satellites will cost the same as one full-sized satellite, with the advantage of being able to spread them around the globe and connect them in a network that can work together.”

Nano-satellites, as the name implies, are miniature satellites that do specialized work using small components, as opposed to full-sized satellites, which are usually equipped with equipment to perform many tasks. With nano-sized communications equipment readily available, small, solar-powered satellites dedicated to communications are feasible, and cheaper than ever.



Raz Itzhaki Tamir (Courtesy)

While SkyFi plans to launch these satellites itself, the company does not see itself as a satellite maker, but a satellite communication technology company, said Tamir. Among the innovations the company has developed is the ability to change the trajectory of its signals by changing the shape of the nano-sat's sub-reflector.

“That’s a major development for the satellite industry,” said Tamir. “The antennas on full-sized satellites are fixed and set for the needs of specific customers, such as television satellite providers that serve a specific area. The contracts for those users are signed well in advance of the launch, but often the customers change their satellite service providers, so the antenna can no longer be used. With our technology, we can readjust the direction of the antennas as needed.”

In addition, said Tamir, the communications technology used by SkyFi’s nano-sats will provide much faster connectivity than existing satellites.

“Current nano-sats can provide communication speed of two megabits per second,” said Tamir. “We’re a lot faster – about a gigabit per second.”

That is fast enough to enable video transmission, which require a lot of bandwidth – meaning that for the first time, an international, worldwide television satellite system would be feasible with the SkyFi system.

In fact, that may come sooner than later. Although the network to be launched by SkyFi next year is being sent up as a proof of concept, designed to show other satellite companies what its communication technology is capable of, the network itself will be fully functional. What does SkyFi

plan to do with it? “One of our investors is a major content provider in the US, so they may want to take advantage of the system for their own needs,” said Tamir.

With the nano-satellites so cheap and the technology so fast, Internet connectivity could become ubiquitous when large numbers of Skyfi networks are operating – bringing the cost of connectivity way down.

“The high flexibility of our nano satellites and the ability to provide multiple services to different customers enables us to offer free internet access to the whole planet in the same manner as GPS services are free,” said Tamir. “We think this has the potential to bridge great divides and give everyone worldwide a part in the great global connected community.”

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