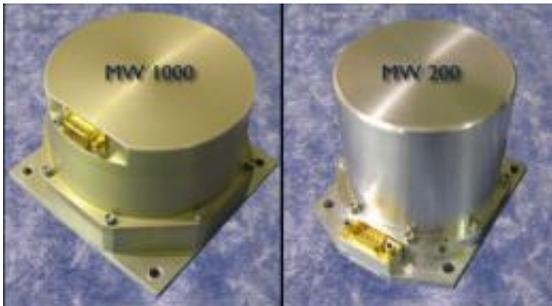


Canadian company planning micro-satellite network

January 20 2011, by Lin Edwards



(PhysOrg.com) -- A Canadian company is planning to launch a network of small satellites into a low orbit to improve Internet access in remote and rural areas and to help relieve network congestion caused by the recent global explosion in the use of mobile Internet devices.

The COMMStellation™ network will comprise a constellation of 78 small and inexpensive satellites in orbit at about 1,000 kilometers above the Earth, and is the project of Microsat Systems Canada Incorporated (MSCI). The micro-satellites can use cheaper and more ordinary electronics systems than satellites orbiting much higher because their low orbit is less demanding than in space. They will also use less power to transmit data because they are closer to the surface. The satellites are small enough that 14 of them can be launched on a single rocket, which also cuts costs.

MSCI plans to launch the first satellites in 2014 and have the entire network operational the following year. The satellites will be launched into six orbital planes, 30 degrees apart, with 13 satellites and a spare in each plane. Once the network is in orbit a ground station network of about 20 bases around the world will link to the satellites, which in turn will link to mobile phone base stations or network hubs.

Each of the COMMStellation satellites will be capable of transferring 12 gigabits of data per second and will give coverage to a circular area of over 18 million square kilometers. The satellites will orbit on a path that crosses the north and south poles, which means that at higher latitudes the orbits will draw closer and give even better coverage in areas (such as the northern areas of Canada) where almost no coverage is currently available and where fiber-infrastructure is too costly.

The [satellite](#) lifespan is expected to be 10 years, after which they can be returned to the atmosphere where they will burn up, instead of adding to the already massive amounts of orbital junk.

President and CEO of MSCI, David Cooper, said in a press release that there is “unprecedented strain on [mobile networks](#)” because of the millions of new data-hungry devices such as smartphones and tablets, and many mobile networks are near or at capacity. The COMMStellation network would relieve the strain by providing much-needed “backhaul” capacity to mobile networks around the world.

Another plan to relieve the congestion is Google's O3b plan, consisting of eight satellites launched into a much higher orbit than COMMStellation. O3b refers to the “other three billion” who still have no connectivity to the Internet. Cooper said COMMStellation would provide five times more data bandwidth density than O3b even at the equator, but would cost hundreds of millions of dollars less.

More information: [www.mscinc.ca/news/2011-1-19-M...
-COMMStellation.html](http://www.mscinc.ca/news/2011-1-19-M...-COMMStellation.html)

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Citation: Canadian company planning micro-satellite network (2011, January 20) retrieved 28 April 2024 from <https://phys.org/news/2011-01-canadian-company-micro-satellite-network.html>

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