

# Online Journal of Space Communication

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Volume 2  
Issue 4 *Satellite Communication in Canada*  
(Spring 2003)

Article 19

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May 2021

## The Future of SatCom in Canada: Smart Communities

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### Recommended Citation

Bush, Paul (2021) "The Future of SatCom in Canada: Smart Communities," *Online Journal of Space Communication*: Vol. 2 : Iss. 4 , Article 19.

Available at: <https://ohioopen.library.ohio.edu/spacejournal/vol2/iss4/19>

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## Smart Communities/Community Access Program

Telesat has been a pioneer in the development of satellite-based smart communities. In remote communities across Canada, satellite terminals are located at community centres to enable high-speed, two-way communication links that provide the same level of communications services as are available in more densely populated parts of the country. The high-speed links not only provide full time access to Internet but also can be established on demand and can link any of the remote communities to any other community, as well as to major cities in southern Canada. Telesat has developed a host of applications for these communities, including high-speed Internet access, telemedicine, distance learning, telejustice, remote library access, and other government services such as electronic job searches using Human Resources Development Canada (HRDC) kiosks. In recognition of its demonstrated expertise in applications development, Telesat has been selected by the European Space Agency (ESA) as a partner in a number of related projects. The Remote Communities Services Telecentre (RCST) was one of the first R&D projects in this area.



Telesat spearheaded the provision of remote telecentres in several communities in Newfoundland and Labrador, some of which were further provisioned with a local wireless communications system to link various facilities in the community with the main community centre housing the satellite ground station.

This project was followed by the Integrated Emergency Medical Network (IEMN) program, also supported by ESA, which used the same network architecture as the RCST project to extend communications via transportable/mobile facilities to remote locations experiencing medical emergencies. Another ESA-supported project nearing completion is called the Marine Interactive Satellite Technologies (MIST) project, which extended the above-noted communications capabilities to ships and ferries operating anywhere in Canadian waters.

Telesat's success with these initiatives has recently been recognized by Industry Canada. As part of the SmartCommunity program, \$5 M in funding was awarded to 10 consortia to establish a smart community project in each province across the country. Telesat is a partner in three of the selected proposals: SmartLabrador, SmartCapital and the SmartCommunity - First Nations project. Telesat's role in

these projects has be to build on its extensive development expertise in the SmartCommunity area to establish satellite-based high-speed communications links to additional remote communities across the country. Telesat is also work closely with the remote communities to develop the various applications that use these multimedia communications links.

On the success of the number of projects lead by Telesat, ESA/CSA are now funding a new initiative called "Real-time Emergency Management via SATellite - REMSAT." This project will develop an optimum architecture using communication, earth observation and positioning satellite technologies to mitigate the effects of natural and man-made disasters. The focus of this project will be wild-fire and flooding domains. There will be an over lay of medical emergencies in these two domains. Telesat is negotiating with ESA/CSA to launch a new project called "Marine eCommerce Applications - MeCA" which will equip 5 marine vessels with Ka-band low cost terminal to develop and promote eCommerce applications for sea going public. This will build on the MIST project with a focus to commercialize the services in the near term.

ESA/CSA are encouraging Telesat to undertake a HomeCare project. This will address the in-time needs of the sick and elderly at home.

In addition, Telesat is evaluating emerging satellite communications platforms to determine if additional features can be incorporated into second generation versions of SmartCommunities. For example, Telesat is evaluating new Multi-Frequency Time Division Multiple Access (MF-TDMA) systems with the aim of improving networking flexibility compared to current community platforms.