



**Telesat**

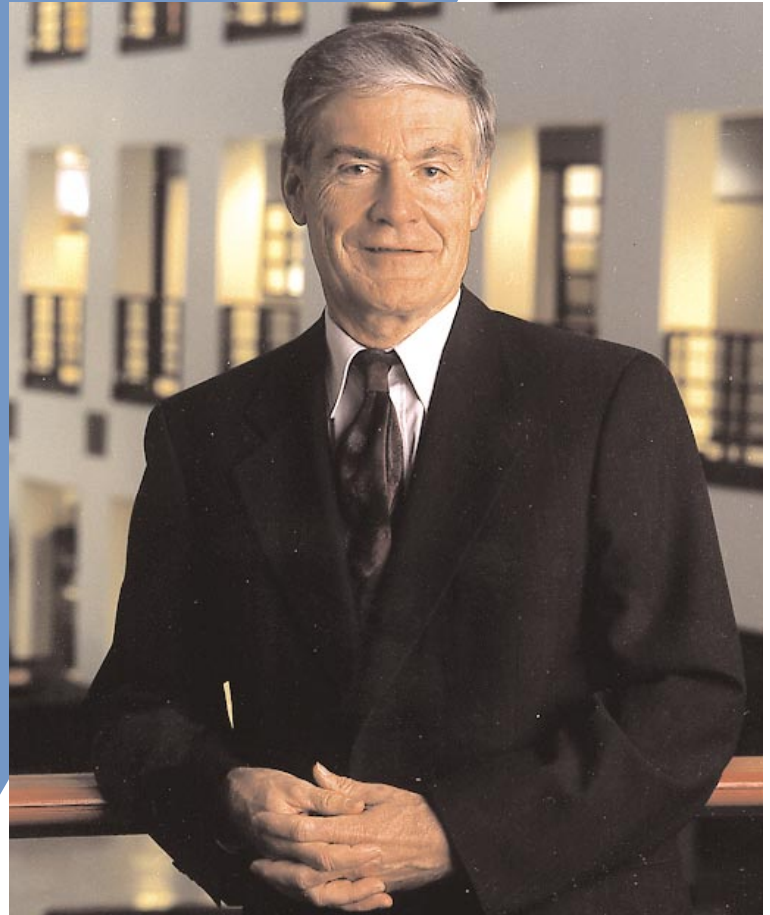
# Report

TELESAT CANADA

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Fall/2002

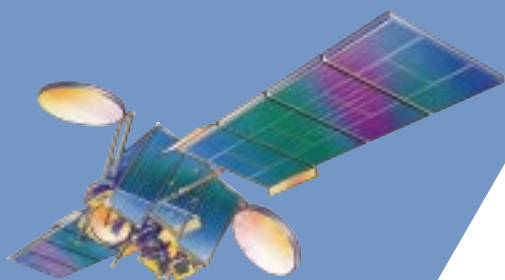
## **An interview with Larry Boisvert, Telesat President and CEO**



**T**elesat Report spoke with company president Larry Boisvert recently. Here he talks about the company's growth opportunities, its customer-service priorities, and its secrets to success.

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### ***What are Telesat's biggest priorities these days?***

Providing continuity of service for our customers is and will always be Telesat's number one priority.

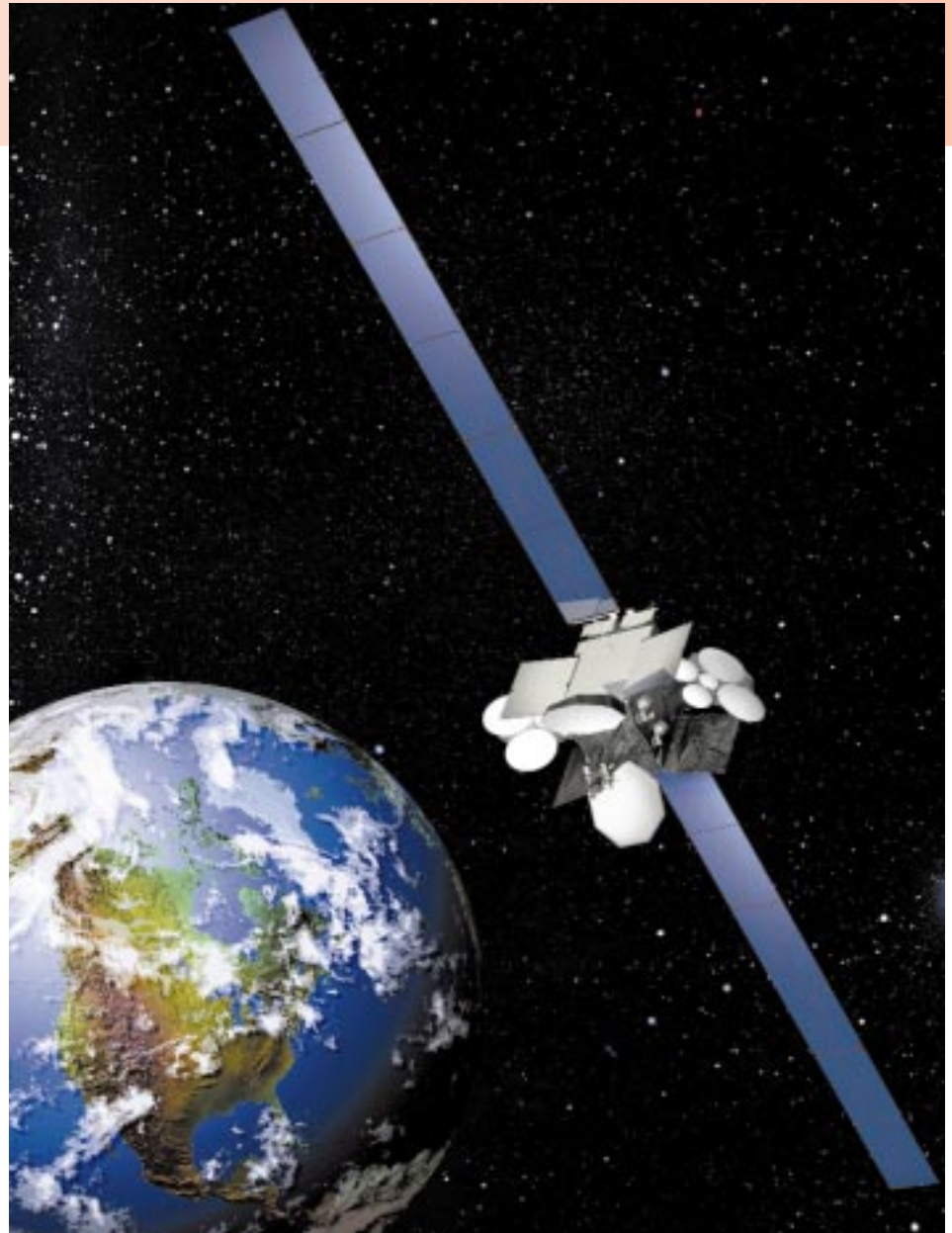
Our Anik E2 satellite will be ready to retire from geostationary orbit by midyear 2003, so we've contracted for interim capacity until Anik F2 is operational. We're going to collocate a back-up satellite with Anik E2, and then simply switch E2 off and turn the surrogate spacecraft on. The switchover should be transparent to our E2 customers.

We're launching our second direct broadcast satellite, Nimiq 2, in December of this year, which will provide our customer on this satellite with both back-up capacity and a platform for growth.

Telesat is also accelerating its Anik F1 replacement program given that this spacecraft is likely to have a shorter life cycle than we had originally expected. We'll know more by the end of the year when the manufacturer, Boeing, provides us with final technical data, but the bottom line is that even under a worst-case scenario, we will have time to design, build, and launch a replacement satellite before Anik F1 reaches its end of life.

### ***What will Telesat look like in five years?***

The single biggest change we'll see will be our involvement in high-speed two-way data services over satellite. We will continue to do what we're doing today, but broadband data services will be a large growth area in five years time.



### ***How will Telesat tackle the broadband data market?***

We are equipping our Anik F2 satellite, which we expect to launch in the third quarter of 2003, with Ka-band channels. Ka-band will enable us to provide two-way interactive high-speed broadband services directly to the home, to the SOHO (small-office home-office) market, to small and medium sized businesses, and even to large enterprises.

It's ideally suited for two-way interactive data communications using very small, inexpensive terminals.

### ***Will Telesat provide broadband services in the U.S?***

Yes we will. Anik F2 will have 45 Ka-band beams. Fifteen will be dedicated to Canada and 30 to the U.S. We have a partnership agreement with a company called WildBlue to market Anik F2's Ka-band capacity in the U.S.

### ***Will Anik F2 include any technological breakthroughs?***

Anik F2 will contain one of the first commercial Ka-band payloads in the world. Another company is building a Ka-band satellite, but theirs has onboard processing, which is very complicated and costly. Anik F2 is pretty much a straight forward bent pipe type of concept, which is less risky. We decided to keep the space segment fairly simple and put the smarts for our system on the ground.

### ***Does Telesat intend to compete with DSL and cable Internet services?***

No, but we don't need to. Some 25 to 30 per cent of consumers and businesses in North America will not have access to high-speed Internet services in the foreseeable future. We're going after that market. We know that there are 110 million residences in North America. That figure represents a potential market of some 30 million customers, and we need to attract only a small percentage of them to make our business case.

### ***Virtually everything that Canadians watch on television, whether on cable or direct-to-home services, relies on Telesat's satellites. How has the company managed to keep its leadership in the video distribution market?***

It comes down to the inherent broadcast strengths of satellite technology. For instance, the total capital of our direct broadcast satellite, Nimiq 1, is about CDN\$300 million. That satellite covers all of Canada and the U.S.

Anyone who wants service simply needs to buy a dish and subscribe. There is no other technology that I'm aware of that will even begin to encroach on satellite's ability to deliver video signals cost effectively to homes or to cable head-ends.

### ***How important is the broadcast business to Telesat?***

It's huge. Broadcasting contributes around 60 per cent of our revenues. Voice, data, and consulting make up the other 40 per cent.

### ***What new applications are creating a buzz in the satellite industry today?***

Digital cinema and high definition television (HDTV) are two. Digital cinema involves downloading digital movies to theatres by satellite, which would save the film industry from having to distribute physical copies of movies. Digital cinema promises to simplify and speed distribution and to decrease piracy.

HDTV offers the satellite industry great potential because this technology requires tremendous bandwidth. We can now fit eight regular digital channels in a 36 MHz satellite transponder with guard bands and get good quality. HDTV requires a significant number of additional bits. With today's technology, two HDTV signals can fit into one transponder, and maybe we'll eventually get three, but we don't think we'll see more than that. Satellite operators will obviously benefit if the industry eventually goes to HDTV, and it looks as if it will. All the major film and broadcasting studios are putting in HDTV hardware these days.

### ***Bell Canada Enterprises (BCE) said that it would sell a percentage of Telesat. Where does this proposal stand?***

This plan first came up about a year ago, and Telesat management supported it at the time. With the recent drop in the financial markets, however, we decided recently with BCE to suspend the process. Telesat will continue to be 100 per cent owned by BCE.

### ***Telesat is now in its 33<sup>rd</sup> year. What has been the secret to the company's success?***

Being prudent and conservative. Telesat got into significant financial difficulty in the early 1990s by trying to get into a number of businesses that it didn't know much about. When I was asked to take on the job of president in January of 1993, I immediately took steps to get the company back to what we do best, which is owning and operating satellites and providing end-to-end services with a network of earth stations that is second to none.

Telesat is first and foremost a telecom service provider. The fact that we provide services by satellite is core to us, but our customers, especially as we get into more two-way data services, don't really care that we use satellite, as long as their services work reliably. Consequently, our key to success boils down to prudently choosing the things that we do and then doing them very well by employing high-quality people. It's no more complicated than that.



# ***From off-net to on-line: Telesat introduces high-speed Internet service for businesses everywhere***

**C**all it the great Internet equalizer. People working in locations beyond high-speed Internet serving areas can now send e-mail, download Web content, and access intranets without relying on snail-paced dial-up services.

With the launch of Telesat High-Speed Internet (HSi) satellite service on April 15, 2002, off-net business locations in Canada and the United States can today enjoy the type of high-speed Internet access that most urban offices take for granted.

“Only Telesat offers the extended Canadian coverage that many businesses need to complete their North American networks,” says Dennis Billard, Telesat’s vice-president of business development. “Now companies can provide high-speed Internet access no matter where employees are located.”

## ***Companies pick the speed they need***

Offered in partnership with Spacenet Inc., a subsidiary of Gilat Satellite Networks Ltd., Telesat High Speed Internet service will appeal to small, medium-sized, and large businesses and government institutions with off-net locations. Customers can choose from one of three service options (see table) depending on their transmission needs and number of users. Whatever the option, the access is “always on” just as it is with cable or asynchronous digital subscriber loop (ADSL) systems.



Moreover, Telesat High Speed Internet service is similar to cable systems in that users share the same bandwidth. Telesat designed the service and its provisioning policies to ensure that customers get consistent, reliable access to e-mail and

Web content. The accompanying sidebar describes how innovative software allows Telesat High Speed Internet service to achieve finger-snapping fast performance.

## ***Telesat High Speed Internet Service Options***

Service Option	HSi 250	HSi 500	HSi 1000
Download Data Speed (maximum speed)	250 kbps	500 kbps	1000 kbps
Upload Data Speed (maximum speed)	60 kbps	153 kbps	153 kbps
Maximum TCP Connections	16	32	96
IP Addresses included	5	5	5
Typical number of users	1 to 2	2 to 5	5 to 20

## *Low-cost terminals and simple installation*

Installing Telesat High Speed Internet service is straightforward. A typical installation is composed of a small Ku-band antenna, typically less than one meter in diameter, which is paired with an outdoor unit to send data and download Internet content. A very small indoor unit provides an Ethernet (10BaseT) interface and comes with a built-in router that supports local area networks. This feature allows several users to share the service for one monthly low price.

Requiring no terrestrial connections, these remote satellite terminals access the Internet and corporate Intranets through Telesat's Toronto teleport using the company's Anik E2 satellite.

"We designed HSi expressly for business users," says Ed Miller, manger, service development, with Telesat, "right from the Internet hub through the satellite link to the end user terminal."

In addition, Telesat also offers 24-hour-a-day technical support and warranty repair on the terminals, as long as they're in service.

### *Virtual private network option*

Telesat also offers a virtual private network (VPN) option, which provides businesses with even greater security. VPNs allow companies to securely connect remote users to corporate intranets and applications over shared networks.

Telesat is selling HSi to large enterprises directly and is working with resellers to reach small and medium-sized companies. But no matter what size the company, high-speed Internet access is more a necessity than a luxury in today's business world. Employees who use dial-up connections to send e-mail and download Web content will welcome the productivity gains and time-savings that Telesat High-Speed Internet service makes possible.



## **TCP/IP spoofing and Web page accelerator software open the bandwidth throttle**

Data protocols such as TCP/IP—the Internet protocol—require a series of acknowledgements to send data between computers. These acknowledgements or handshakes govern how data is sent and received. That's fine if the computers are relatively close, as they are in terrestrial networks. But if they're separated by 70,000 kilometres, the distance that acknowledgements travel up to and down from a geostationary satellite, users would end up drumming their fingers waiting for their data to arrive.

Telesat High Speed Internet service avoids these delays by using innovative software that speeds satellite data transmission in two ways.

First, it does the handshaking locally, so the system doesn't waste time sending acknowledgements back and forth over the satellite link. Known as TCP/IP acceleration or spoofing, this process avoids clogging the link with administrative bits and bytes and keeps it open for user data.

Second, the system employs Web page accelerator software that performs a similar role. Web pages are built of a number of objects, which, in terrestrial networks, arrive one at a time at the requesting PC. After each object arrives, the PC sends an acknowledgement, which tells the Web page's server to forward the next object and so on until the page is complete. This process explains why Web pages often appear gradually on your computer screen.

Again, however, the distance between the PC and the Web server in the satellite world makes acknowledging every object impractical. Pages would simply take too long to download. Telesat High Speed Internet service gets around this problem as the Web page accelerator software requests all Web page objects at once. Consequently, Web pages sometimes arrive even faster than they do with terrestrial services. You could compare the process to filling a wading pool one bucket at a time or filling it in one big splash.

Both the TCP/IP acceleration and the Web page accelerator software speed satellite downloads, which increases bandwidth availability for everyone on the network. By making more bandwidth available, Telesat is able to offer the high-speed performance that business users need.

# HSi is Impressive

by James Careless ([james@tjtdesign.com](mailto:james@tjtdesign.com))

**W**hen Telesat asked me to try out their new High Speed Internet (HSi) service at my Ottawa office, I replied, “sure; why not?” After all, our team of writers at TJT Design & Communication Inc. in Ottawa spend most of our time trying out new toys...er, technology. It’s part of our jobs: after all, our articles on the latest-and-greatest tech regularly turn up in newspapers such as the Toronto Star, Ottawa Citizen, and National Post.

Enough of the possibly shameless self-promotion; our expertise is, after all, the reason Telesat contacted us. Their offer was to stick an HSi 0.96m dish on top of our low-rise office, and patch the service into one of our PCs. After my landlord agreed, the service went in, and we turned it on.

To be specific, we connected HSi to one of our spare PCs, leaving the rest of our LAN connected to high-speed DSL, and watched to see what it would do.

In the case of HSi, it didn’t do much. Much wrong, that is.

In fact, HSi worked fine; whether to link to the Internet when the DSL went down (which it did in the month that we had the HSi service), or to provide streaming audio of Mix96 from Montreal.

One of our writers is from Montreal, you see. That’s why the HSi spent some of its time here as part of a satellite-based radio solution.

Actually, as mundane as this may sound, running streaming audio through an Internet connection is a good way to check its reliability. Unlike file downloads, where dropped data can be resent

without anyone noticing, streaming audio shows up any network problems. That’s because when the network coughs, the sound stops. It’s as simple as that.

In the case of HSi, the system did fail but this was during the torrential rains that pelted Ottawa in July 2002. The system kept running during many other storms, and cloudy skies didn’t seem to bother it at all.

**Frankly, even after covering the satcom industry for Via Satellite magazine over the past ten years, I was not ready for the reliability and steadiness of this technology. Fact is, HSi works, and it works very well. Unlike so much in the broadband sector, it’s definitely ready for prime time.**

Meanwhile, the times we used it either for Web-based e-mail, or Web browsing, HSi worked quickly, and without hassle. Just like DSL.

Actually, the most startling aspect of Telesat’s HSi service is how comparable it is to DSL. In fact, I couldn’t tell the two apart when I switched from one to the other.

According to Ed Miller, Manager, Service Development, this is precisely the impression Telesat’s trying to achieve. In point of fact, the service’s top speed - 1 Mbps download via Anik E2 - is actually less than the 3 Mbps down provided by my Bell Business

Internet High Speed service. However, by using software ‘shortcuts’ like TCP/IP and web page accelerator software, HSi’s able to overcome most of the delays associated with satellite traffic, giving customers a DSL-like experience. Hence the seamless satellite radio we enjoyed here for a few short weeks.

So would we buy HSi? Well, given that the monthly rate is somewhat higher than DSL - \$135 - \$435 depending upon tier of service and length of term - plus the additional cost for hardware, the answer is unfortunately ‘no’. But then, companies close to DSL such as we are, are not Telesat’s target market for HSi. Instead, the company’s going after “enterprise customers who can’t get cable or DSL, and who need something faster than 56 k dialup,” Miller told me.

Would I advise companies in this position to sign up for HSi? Without a doubt. Frankly, even after covering the satcom industry for Via Satellite magazine over the past ten years, I was not ready for the reliability and steadiness of this technology. Fact is, HSi works, and it works very well. Unlike so much in the broadband sector, it’s definitely ready for prime time.

Of course, I can’t be 100 percent certain unless I get to test HSi gratis over a sufficiently long enough time period; say, 10 years? No? Oh well; at least I tried.



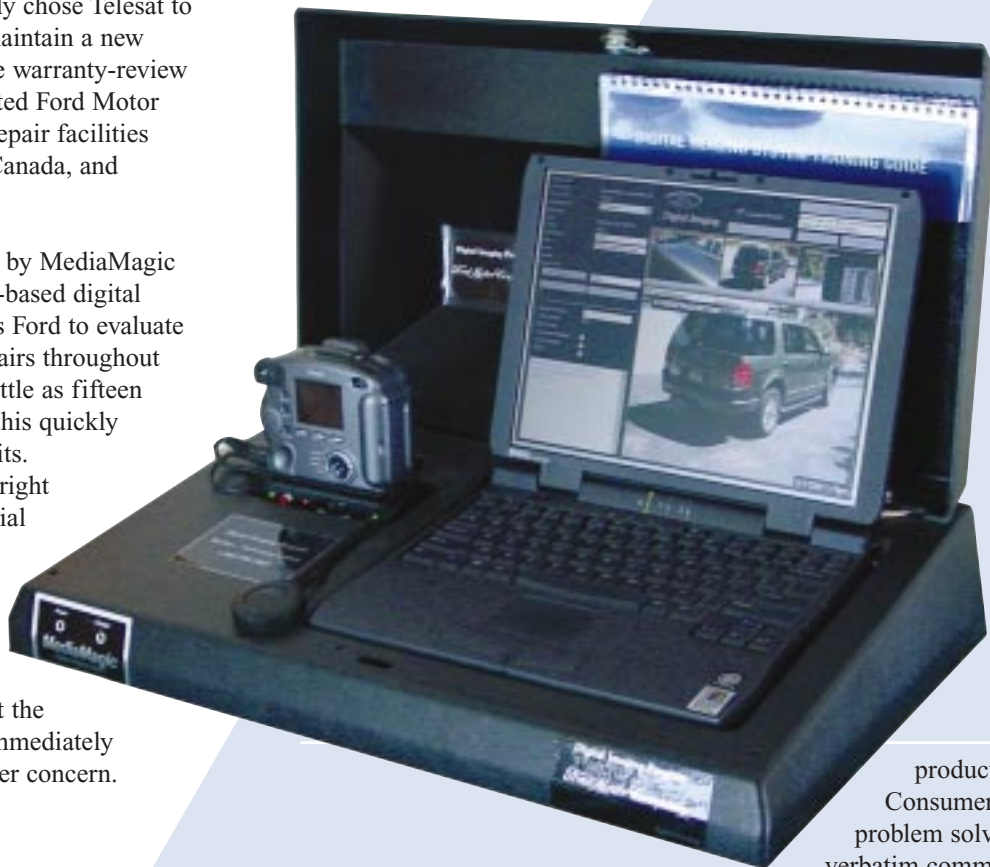
# Telesat offers MediaMagic and Ford a picture-perfect warranty-review solution

**M**ediaMagic Corp. of Belford, N.J., recently chose Telesat to install and maintain a new rapid-response warranty-review system at selected Ford Motor Company dealership repair facilities in the United States, Canada, and Puerto Rico.

Developed jointly by MediaMagic and Ford, this satellite-based digital imaging system allows Ford to evaluate potential warranty repairs throughout North America in as little as fifteen minutes. Responding this quickly offers two main benefits. First, customers learn right away whether a potential repair is eligible for warranty coverage. And second, if Ford sees a trend of similar repairs, the quality-control team at the assembly plants can immediately investigate the customer concern.

## *Say cheese!*

If a customer reports a warranty concern at a dealership, the service technician takes several electronic images of the affected area with a specially equipped digital camera. Customized software, utilizing bar code technology, permanently watermarks the Vehicle Identification Number (VIN) on the images. The camera is then hooked into a unique computer docking station, which automatically transmits all of the images to a special unit of warranty



claims processors located at Ford's Consumer Driven 6-Sigma Center in Dearborn, Mich. Processors review submitted images and supporting customer claim information and respond to every one within 15 minutes, during normal business hours.

All information processed by digital imaging technology is stored in a central database, which is available on a continual basis to Ford's quality managers,

product engineers and Consumer Driven 6-Sigma problem solvers. Customer verbatim comments, correspondence between the dealership and the company's claims processors and accompanying images are all easily accessible via the database. Plants use all available information to further investigate a reported issue and to make on-the-line improvements that can eliminate recurrence of it. Ford product engineers and suppliers also can use the information to effectively incorporate customer feedback into design improvements for future products.

## **Telesat reduces dealership workload**

Ford's new warranty-review system relies on two elements: the new digital imaging technology and the satellite transmission network. Until now, Telesat installed and maintained the satellite system, which Ford also uses for data communications, and another company installed the digital imaging equipment at the dealership. This process required that dealers make two appointments with two different organizations. Bill Rowse, president of MediaMagic, saw an opportunity to simplify life for Ford dealers.

"By having Telesat install and maintain both the digital imaging technology and the satellite system, we reduce dealer administration," says Mr. Rowse. "The dealers' job is to sell and service automobiles. We want to support them with new technology and make their lives as easy as possible. If we can install both systems in one visit, obviously there's more efficiency all around. It's less work for the dealers, and everyone is better served."

Bill Rowse says that MediaMagic selected Telesat because of Telesat's performance installing and maintaining the auto company's satellite network and based on his experience dealing first-hand with Telesat.

"I've been working with Telesat on various projects since 1974," he says. "I like their organization and I'm very happy to have them on board in support of digital imaging. They're professional, and they offer a major benefit to our customer—a single site visit."

Dave Park, policy analyst with Ford, helps administer the company's digital imaging system. He supports MediaMagic's decision to hand installation and maintenance duties exclusively to Telesat. "I knew that other Ford people have done business with Telesat," says Mr. Park, "and they tell me that things have worked well. We are excited to have Telesat on-board with us to assist us in this new effort."

## **Looking forward**

The new digital imaging system is now running in a number of Ford sites in the United States, and Telesat recently installed the first systems in Canada and Puerto Rico. MediaMagic and Ford are not only offering the digital imaging technology and service to other Ford dealers but also marketing it to other automobile and non-automotive companies who could best utilize it in their business.

"Telesat installs and maintains satellite networks for a number of automobile manufacturers," says Mr. Brian Bolton, account executive with Telesat. "Together, MediaMagic, Ford, and Telesat can now offer these companies a turnkey rapid-response warranty-review system under a co-marketing arrangement."

Some Ford dealerships have installed two and even three digital imaging systems to keep up with demand. With this kind of response, chances are that automotive service

writers and technicians throughout North America and beyond will soon be as comfortable with digital imaging technology and the new warranty-review system as they are with handling customer service issues and using repair tools.

Ford Motor Company is pursuing other relevant applications for digital imaging technology in various areas of manufacturing, sales, and service. Those interested in learning more about commercializing this technology and service in their businesses can contact Bill Rowse ([bill@mediamagik.com](mailto:bill@mediamagik.com)) or Chris Danowski Ford Technology Commercialization Manager ([cdanowski@ford.com](mailto:cdanowski@ford.com)), or visit [www.mediamaigik.com](http://www.mediamaigik.com) or [www.fordbetterideas.com](http://www.fordbetterideas.com) for more information.



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**Patricia Kube**

Editor, Telesat Report

Telesat Canada, 1601 Telesat Court,  
Gloucester, Ontario K1B 5P4

Phone: 613-748-0123

Toll-Free: 1-800-267-1870

[info@telesat.ca](mailto:info@telesat.ca)

[www.telesat.ca](http://www.telesat.ca)

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