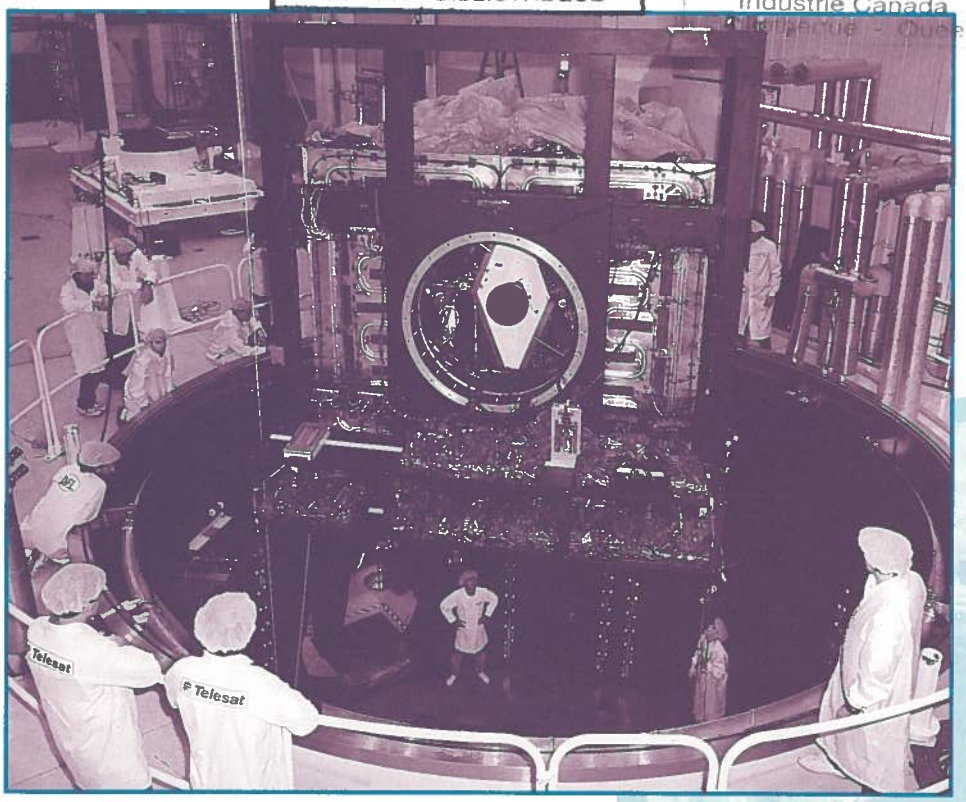
MSAT NEWS
No. 11 SUMMER 1994



On Monday, April 18, Canada's Minister of Industry John Manley and TMI Communications Chairman Robert Ferchat visited the David Florida Laboratory, where the final assembly and testing of the Canadian and American MSAT satellites is taking place. The complex task of uniting the communications payload of both satellites to their main structures or "buses" was performed at the laboratory. During the visit, the communications payload was being lowered into a thermal vacuum chamber, as shown above, for testing designed to determine how it will perform in actual working conditions. For more information about the David Florida Laboratory or MSAT-related work being done there, contact Charly Geier at (613) 998-2044.

IMSC '95 to be held in Ottawa

Mobile satellite communications experts from all over the world will visit Ottawa next summer.

The 4th International Mobile Satellite Conference (IMSC '95) and Exhibition will be held in Ottawa June 6-8, 1995. The conference will give participants from different countries a chance to see demonstrations of new technology and applications for mobile satellite communications. Related regulatory and policy issues will also be discussed.

IMSC '95 is sponsored by Industry Canada's Communications Research Centre and the Jet Propulsion Laboratory in Pasadena, California. A call for papers will be issued this summer.

For more information about IMSC '95, please contact

Rick Boisvert
IMSC '95 Coordinating Committee
Communications Research Centre
3710 Carling Avenue
Box 11490, Station H
Ottawa, Ontario K2H 8S2
Telephone: (613) 990-0133
Fax: (613) 990-0316
e-mail: imsc@crc.doc.ca ●

GTIS BRIEFS

GTIS TO MARKET SERVICES TO GOVERNMENT USERS

Government Telecommunications and Informatics Services (GTIS) has assumed responsibility for marketing and delivery of MSAT services to government departments, agencies and Crown corporations.

The agency has prepared a marketing plan and a comprehensive information package. GTIS staff are also conducting a cross-country tour making presentations on the services that will be available. These presentations are followed by meetings with departments to identify specific needs.

GTIS will be offering five basic services to government clients:

- trunk radio (one person pushes a button to talk and many listen)
- fixed remote telephone
- SCADA (Supervisory Control and Data Acquisition)
- fleet tracking and management
- mobile office.

Beginning with fixed-location voice service, which is scheduled to start next summer, all services will be available by mid 1996. Mobile office services will be available in a partial form until March 1996, when the full service will be offered.

Federal government personnel who would like more information about MSAT services may call

Al Kingon (613) 991-6684
Lorraine Pacowski (613) 991-6784

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Support in developing custom applications

GTIS, in conjunction with the MSAT Directorate of the Communications Research Centre (CRC), will be working with federal government departments to develop custom MSAT applications.

GTIS and CRC will help identify, develop and, in some cases, implement applications that satisfy needs specific to government users. This could include software and hardware, such as transmission equipment meeting the government's STU-III secure telephone standards.

Beta tests scheduled for 1995

GTIS and CRC are planning a series of beta tests with a small number of major government customers in the first quarter of 1995. The two groups will be working with one to three of their larger clients to test all aspects of the new service — not just the technical aspects, but also areas such as billing and customer support. The tests will provide a thorough shake-down trial that will allow GTIS and CRC to fix any glitches before providing services to clients.

Commercial operators given opportunity to bid for services

Private sector companies will be asked to tender proposals to operate some MSAT-related services.

Potential MSAT users in the government are known to have very specific requirements for the service. Consequently, requests for proposals will be posted on the Open Bidding Service electronic billboard to make these needs known. The GTIS MSAT team, under the leadership of Al Kingan, Product Director, GTIS, will be looking for qualified companies to operate the GTIS Network, handle equipment installation and maintenance, as well as terminal management.

GTIS plans to purchase a pool of terminals for redistribution to government clients. All services and equipment will be available for either purchase or lease. ●

Please help us keep our mailing list up to date

If you would like to start receiving *MSAT News*, or if you no longer wish to receive the newsletter, please contact the administrator, Hugh Reekie, at

MSAT Program Office, Industry Canada
300 Slater Street, Ottawa, Ontario
K1A 0C8
Telephone: (613) 990-4099
Fax: (613) 998-7008
e-mail (Internet):
hugh.reekie@crc.doc.ca

TMI Communications Update

TMI arranges for tests with Mexican satellite

An agreement with the Mexican government's telecommunications agency may speed up delivery of commercial MSAT services.

Under the agreement, TMI Communications will use the Mexican *Solidaridad* satellite to test the ground-based portion of the system before the MSAT satellite is launched in late 1994. "This will allow us to finish testing before the launch of our satellite and begin commercial service sooner," says TMI spokesperson Janis Downey.

For its part, Telecomunicaciones de Mexico will be able to use TMI's ground network to test the L-band portion of their satellite.

The signing ceremony with Telecomunicaciones de Mexico was held in Mexico City on March 25 and was witnessed by Industry Canada Minister John Manley.

On March 25, TMI Communications signed an agreement with the Mexican telecommunications agency to use their satellite to test the ground-based portion of the MSAT Network. From left to right: Carlos Rosado and Carlos Mier Y Teràn, both of Telecomunicaciones de Mexico, Industry Canada Minister John Manley and TMI Communications Vice President Peter Vivian.

B.C. firm selected to provide MSAT equipment

Narrowband Telecommunications Research Inc. of Burnaby, British Columbia has been selected to manufacture and distribute equipment for use with the MSAT Network.

Narrowband's solar-powered MSAT Communicators™ will allow firms to monitor and manage remote assets at a relatively low cost. The terminals will be ruggedly constructed to minimize maintenance and are designed especially for use with existing data monitoring and control devices.

For information about Narrowband's MSAT Communicators™, contact Mahmoud El Banna at (604) 294-8577. ●

Special applications for MSAT

In addition to satisfying many general requirements, MSAT will provide significant opportunities for certain specialized applications such as:

- marine search and rescue,
- aeronautical mobile communications and flight following, and
- wide area differential GPS.

If you are interested in one of these areas and would like more information, contact Allister Pedersen, Manager MSAT Trials Planning and Coordination. Pedersen, an employee of CRC, is currently working on-site at TMI Communications and can be contacted by phone at (613) 742-4131, by fax at (613) 742-4100, by Internet at "A.Pedersen@tmi.telesat.ca" or by writing

Allister Pedersen
c/o TMI Communications
Customer Engineering
1601 Telesat Court
P.O. Box 9826
Ottawa, Ontario
K1G 5M2 ●

TMI TECH TALK

WESTINGHOUSE TO MANUFACTURE MOBILE SATELLITE PHONES

On May 3, TMI Communications announced that it had finalized an agreement to allow Westinghouse Electric Corporation's communications division to manufacture and distribute satellite phones for use on MSAT.

Through the MSAT Network, the satellite phones will provide cellular-like service to approximately 80 percent of Canada's territory. A compact antenna that can be easily and unobtrusively mounted on a car or truck will give users access to the MSAT Network.

The phone, known as the Series 1000, is based on the OKI 1230 cellular phone. Owners of OKI 1230 phones will be able to upgrade them for MSAT use. Westinghouse is also providing phones for similar networks operated by American Mobile Satellite Corporation and Australia's Optus Pty. Ltd.

The expected cost to purchase basic equipment is less than C$3,000. TMI expects that the cost of an MSAT voice call will be less than $2 per minute, compared with current satellite calls, which cost $7 per minute. Basic monthly charges for the new service will be less than $30.

For additional information about the new Series 1000 phones, contact Westinghouse's Bill Parker at (905) 342-1042.

MSAT NETWORK TO UTILIZE A SPECIAL VOICE CODEC

A special "voice CODEC" will allow the MSAT Network to make the most of frequency spectrum, satellite power, and mobile terminal power.

"CODEC" stands for coder - decoder; one part receives analog voice and converts it to digital (coded) voice; the second part converts the signal back to analog that can be heard through a phone earpiece. The digital signal is more compressed than an analog one would be. The CODEC will also compensate for any fading and shadowing of signals that is present in a mobile communications environment.

After careful evaluation, TMI settled on the Improved Multiband Excitation (IMBE) CODEC from Digital Voice Systems Inc. The IMBE software processes speech to produce a 6400 bps output. The inherent speech coding rate is 4150 bps, to which 2250 bps of error correction is added — for transmission robustness. This allows for reasonable quality speech and voice recognition even in hostile environments, while conserving power and spectrum. It has been shown to withstand shadows of up to a tenth of a second with no degradation in speech quality.

The IMBE algorithm has been fine-tuned to transmit human speech in difficult mobile communications environments. As a result, it cannot pass modem or fax tones. However, the mobile terminal has separate ports to support asynchronous data and G3 fax. The IMBE CODEC does pass DTMF (Dual Tone Multi-Frequency) tone pairs used in normal telephone call set-up, and in supporting advanced features from a touch-tone phone. ●

MSAT available through e-mail

News about Industry Canada's MSAT Program is now available through Internet.

The news will be distributed by a listserver, a device that automatically sends e-mail messages to subscribers. Readers can respond to posted articles, and a moderator will post questions and comments of general interest to all readers. New information will be posted approximately once each month until MSAT services are established in Canada.

It is planned that the service, which is available to anyone with access to Internet e-mail, will be provided in French and English. Unfortunately, accented characters are not available because of limitations of the Internet system.

To subscribe, send a message to the following address:
listserver@crc.doc.ca

In the body of the text, please type:
subscribe msat-news <your name>

The listserver will automatically record your address and send a confirmation notice.

Those seeking further information can contact the administrator, Hugh Reekie, at

Telephone: (613) 990-4099
Fax: (613) 998-7008
e-mail: hugh.reekie@crc.doc.ca
or by regular mail at

MSAT Program Office, Industry Canada
300 Slater Street
Ottawa, Ontario
K1A 0C8 ●

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