IEEE NEWSLETTER
KITCHENER-WATERLOO SECTION

September 1992

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The Kitchener-Waterloo Section of the Institute of Electrical and Electronics Engineers serves all members whose mailing address is in Bruce, Grey, Perth, Waterloo or Wellington Counties.

Contents

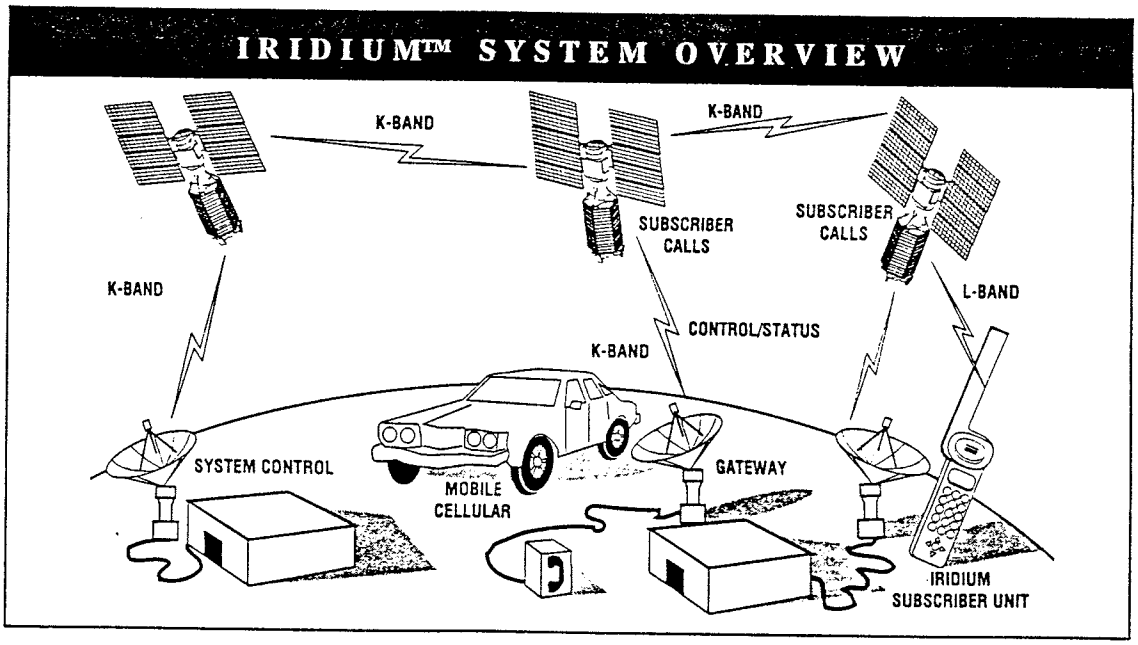
Meetings

Feature Articles

October 7, 1992
IRIDIUM - A GLOBAL CELLULAR SATELLITE SYSTEM

Date: Wednesday, October 7, 1992
Time: 7:30 p.m.
Place: University of Waterloo, Davis Center, Room 1302
Speaker: Mark Gerecke, Project Manager, 170 University Ave. W.
Dinner with Speaker: 6:00 p.m., East Side Marios, 170 University Ave. W.

IRIDIUM™ will be a worldwide satellite-based, digital, communications system providing commercial, rural and mobile services via handheld portable terminals to millions of individual users throughout the world. The system, named after the element with 77 electrons, will include a constellation of up to 77 small, smart satellites at a height of 420 nautical miles which will be networked together as a switched digital communications system. When it becomes fully operational in the late 1990's, phone callers will be able to use a small handheld portable unit to communicate with anyone, anytime, anywhere on earth.



The IRIDIUM™ talk will cover

- the background and concept of IRIDIUM™
- the revolutionary engineering utilized in its system design and
- the role of COM DEV, Cambridge in the development and manufacture of the satellite communications hardware.

The IRIDIUM™ system represents a bold step into the future in terms of portable radiotelephone and worldwide networking capability. The IRIDIUM™ project promises to be ground breaking in its impact on the satellite and communications marketplace.

CONFERENCES IN CANADA

1992

Sept. 24-25	Spectrum 20/20 Toronto, Ontario
Sept. 30 - Oct. 2	Fourth Annual International Workshop on CAMAD, Monebello
Oct. 4-6	IEEE Intern'l Symposium on Time-Frequency and Time-Scale Analysis, Victoria, B.C.
Oct. 7-9	6th SP Workshop on Statistical Signal and Array Processing, Victoria, B.C.
Oct. 18-20	Canadian Conference on VLSI, Halifax, N.S.
Oct. 18-21	IEEE Conference on Electric Insulation and Dielectric Phenomena, Victoria, B.C.
Oct. 20-24	4th Alberta Exposition & Conference on Power Quality, Edmonton, Alta 403/448-3332, 469-6670

THE SEVEN GRAND CHALLENGES IN ELECTROTECHNOLOGY

The IEEE Strategic Planning Committee approached the TAB New Technology Directions Committee and asked them to come up with a list of grand challenges in electrotechnology, according to Martin Schneider, a member of the TAB committee, writing in June 1992 issue of the Antennas and Propagation Magazine. They are:

1. To be reachable or not reachable any time, anywhere (wireless communications).

2. To have instant access to all information (data bases, high-speed links, flat-panel displays and interfaces).

3. To be present or absent any time, anywhere (virtual presence and reality).

4. Abundant, clean, safe and affordable energy.

5. Intelligent highways and transportation systems (personal global navigation).

6. The paperless office (flat panel/pen computer).

7. The cashless society (electronic purse and wallet).

Schneider adds "It should be noted that several of these challenges will demand the skills of experienced antenna and propagation engineers. They will also require the development of advanced software, and stimulate engineers to develop national and transitional high-data-rate networks".

ANTENNAS AND PROPAGATION/URSI SYMPOSIUM

The 1992 Joint Symposium of the IEEE Antennas and Propagation Society and URSI was held in Chicago in June. Among the many who participated were Sujeet K. Chaudhuri of UW (session chair), Len Chow of UW (session chair and papers), Bob MacPhie of Universite de Provence, returning to UW (paper), A.A. Omar (paper), and R.M. Shubair (paper).

UNDERSEA BRANCHING MULTIPLEXERS

On March 2, 1992 the undersea optical fibre Trans Atlantic Telecommunications System (TAT-9) linking North America and Europe was put into commercial operation. The TAT-9 System contains the world's first Undersea Branching Multiplexers (UBMs): they were designed and manufactured by MPB Technologies of St. Anne de Belleview, Quebec.

ACRONYM OR INITIALISM?

David Wade of Kitchener, writing in the Kitchener-Waterloo Record, joins a controversy about acronyms. He says "It is usual to omit the periods from an abbreviation of three or more initial letters such as IBM or NCR; however, this does not make them acronyms...These abbreviations, which we pronounce as a series of individual letters, are known as initialisms or alphabetisms...

Acronyms are abbreviations that are pronounced as if their constituent letter form a word..."

Note that acronyms can use more than one letter from each constituent word - example, radar (radio direction and ranging).

Wade also give one other rule for true acronym formation, that is, not to substitute capitals for words that would not be capitalized in normal use: Self-contained underwater breathing apparatus is compressed into scuba. According to him, computer people should write rom, ram, dos and wysiwyg.

DEVALUED CURRENCY

Not so long ago, the unit of currency in Russia was the "Rouble" and it was worth over one dollar.

In the Kitchener-Waterloo Record of July 21, 1992, it was listed as the "Rubble" (after the remains of the USSR no doubt). No wonder it is worth less than one cent.