Attending at Joint Conference of AIAA-ICSSC2012 and Ka-Band Broadband Conference

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Left: Westin Ottawa, the venue for the conference, Right: Overlooking towards the Ottawa canal and the Houses of Parliament from the hotel window.

The author participated in the Joint Conference of 30th AIAA International Communications Satellite Systems Conference (ICSSC) and 18th Ka and Broadband Communications, Navigation and Earth Observation Conference held in Ottawa on September 25-27, 2012. At first, the report focuses on the content of the panel discussion that the author attended as one of the panelists, then some topics are reported. The other topics are expected to be reported by any specialist.

About 250 people were participated with registration in this conference, including 20 people from Japan. It appears to have much luck in the fact that 20 people from Japan to participate. The Broadsky Workshop sponsored by NICT that has been implemented every year, was held on the theme of robotics and its application. The whole program was shown in the **Table** below.

The panel discussion entitled as “A Half Century of Satellite Communications” was held in the morning of the first day. The main point of this panel discussion is “The last 50 years have seen a prodigious expansion in satellite communications from the earliest days of the small spin stabilized satellites to the current multi kilowatt, three axis stabilized satellites providing Internet services directly to the home. The panel will discuss the key developments of the last fifty years and their impact on the current world. The panelists will also speculate on what they believe will occur in the future.” The moderator is Dr. Curtin, the panelists are Mr. Helm, Mr. Patacchini (Eutelsat), and Mr. Garland (MDA) and I. Although I wonder how many people participate since this panel was one of five sessions held in parallel, about 60 people gathered to this panel session. Mrs. Helm also attended. Since I was the last turn, but there is a feeling of lack of time. Each panelist's presentation topic is as follows:

- Mr. Helm’s presentation: “50 Years of Satellites: Past, Present and Future.”
  - After an overview of up to recent satellite from the Sputnik, a key technology of the next 50 years are enumerated including the technology of launch cost reduction, high-gain antenna possible frequency reuse capability of 10,000, and in-geosynchronous orbit service technology. The concerns in the late 21st century are enumerated in terms of Internet addicts, job turn-over & training, social & financial relevance, Information overload and living meta cities, and de-skilling, technological under or unemployment.
- Mr. Patacchini’s presentation: “Evolution of Eutelsat from an International Organization to a multi-billion quoted company.”

CONFERENCE PROGRAM OVERVIEW

Monday, September 24					
08:30-17:00	Colloquium: Meeting the Communications Requirements of a Changing Arctic				
Tuesday, September 25					
Opening Session					
Welcome Speeches:					
		Frank Gargione, Satellite Systems Consultant, USA	Mario Caron, Communications Research Centre, Canada	Mr. Steve Desroches, Deputy Mayor of Ottawa	
Joint Conference Plenary Session: Governments' Future Perspectives					
Room	GOVERNOR GENERAL I	QUEBEC	GOVERNOR GENERAL II	PROVINCES I	PROVINCES II
10:30-12:10	KA 1: Propagation I	ICSSC 1: Satellite Bus	ICSSC Panel 1: A Half Century of Satellite Communications: the Past, Present and the Future	ICSSC 2: System Architectures & Northern Communications	ICSSC 3: Networks
13:40-15:20	ICSSC 4: Propagation & Mitigation 1	ICSSC 5: Advances in Earth Terminals	10th BroadSky Workshop: Space Robotics and Applications	ICSSC 6: Communications Techniques 1	ICSSC 7: Satcom Applications & Services
15:40-17:00	KA 2: Telecommunication Components	ICSSC 8: Space Based Laser Communicatrions	10th BroadSky Workshop: Space Robotics and Applications (cont.)	ICSSC 9: Communications Techniques 2	ICSSC 10: Navigation Satellite Systems & Applications
18:30-20:30	Welcome Cocktail Reception				
Wednesday, September 26					
08:30-09:50	ICSSC 11: New Services	KA 3: Earth Observation Applications	ICSSC 15: Mobile Communications & Terminals 1	ICSSC 12: Advances in Payload Subsystems 1	ICSSC 13: Integrated Services for Disaster Relief
10:10-12:10	KA 4: New Broadband Systems 1	KA 5: Earth Observation Systems	KA 6: Navigation Systems and Applications	ICSSC 14: Advances in Satellite Architecture	KA 7: Protocols
14:10-15:50		KA 8: Telecommunication Systems & Payloads 1	ICSSC Panel 2: Market Issues	KA 9: Telecom Ground Systems 1	Ka 10: Propagation 2
16:10-17:10	KA 11: Telecommunication Systems & Payloads 2	KA 12: Telecom Ground Systems 2	Ka 13: Market & Risk Mitigation	ICSSC 16: Advances in Payload Subsystems 2	KA 14: Propagation 3
20:00–23:00	Conference Dinner@Canadien Museum of Civilization				
Thursday, September 27					
08:30-10:30	KA 15: New Broadband Systems 2	KA 16: Earth Observation Payloads & Components	ICSSC 17: Regulatory, Market & Spectrum Issues	ICSSC 18: Protocols & Techniques	
10:50-12:30	ICSSC 19: Software Defined Radio	ICSSC 20: Propagation & Mitigation 2	ICSSC Panel 3: Public, Private or Public-Private-Partnership?	ICSSC 21 : Mobile Communications & Terminals 2	
14:00-14:15	Roadmap for Ka-band Development by Roger Rusch, TelAstra, Inc., USA				
Closing Session					
Closing Remarks					
Best Paper Awards					
Attendance Draw					

- The Eutelsat is introduced in terms of number of satellite 28 and further 7 to be launched by 2015, 4250 channels of TV broadcasting including video, data and high-definition broadcast services of over 300 channels, employment of 750 experts from 30 countries, €222.2M income in 2012. And KA-SAT broadband satellite was introduced.

- Mr. Garland's presentation: "A Half Century of Satellite Communications - The Canadian Story."
  - The root of RCA in Montreal in 1928, Alouette / ISIS satellites during 1962-69, establishment of Telesat, ANIK satellite, CTS satellite, MSAT satellite and ANIK F2 satellite are described. Then Viasat 2, V-band feeder link and GEO cluster satellite are added as future trends.
- Iida's presentation: "Satellite Communications Development in Japan: from Past to Future."
  - The Japanese satellite development is classified into early stage era: until 1964, the start of

satellite development era: 1965-1990, the difficult era and provision for the future: 1990-, and future research and its issues, recent changes in Japan's space policy, and the impact of the East Japan Great Earthquake. In the early stage era that began at the Tokyo Olympic Games, our country at the time was excited to the science and technology by the development of nuclear science and technology, the development of Shinkansen, and the Antarctica expedition. In the 1990s, it was a difficult time in terms of constraints occurred due to the trade issue between Japan and the U.S. minding Super 301, the collapse of the bubble economy, and a series of failures in the satellite launch. Activity for the future was done in cooperation between Japan and the U.S. even in this era. This activity led to develop the WINDS satellite. However, a problem is stated that future direction is not yet fixed. Finally, paying attention to the shock of the East-Japan Great Earthquake, it was proposed that the research and development of Japanese country should be shifted to the national security related one and the deep craft for technological innovation should be created.

At the welcome cocktail reception in the evening, one American questioned me if the Super 301 did affect so bad into Japan. For the answer “Yes”, he said many Americans have already forgotten the Super 301. I thought that this should be solved in the future by the responsibility of the Japanese government. We also talk about the discussion of “zero” nuclear power plant in Japan. The Americans reaction was that the idea of “zero” is outrageous. Although the “Village of nuclear power” is focused in Japan, I think the discussion of the nuclear power plant in Japan might be talking about in the “Village of Japan."

I would like to talk about the efforts of satellite broadband as another topic. That is, there were many presentations of Ka-band satellite broadband with a capacity of approximately 100 Gbps. Satellite broadband, research on the use of a very large number of multi-beam antenna (more than 100 beams), feeder links, considering the Q, V, and W band, have been presented. Regarding the presentation of radio wave propagation, I heard complaints that nevertheless the Ka band was studied in Japan in the 1970s, the results were not be quoted.

In Mr. R. Rusch’s (TelAstra, Inc.) presentation entitled as ”Roadmap for Ka Band Conference” at Closing Session, I have heard for the first time that "Obama administration remains hostile to satellites." As I thought, so it seems still.

The next joint conference will be held in Florence, Italy on October 14-17, 2013 (http://www.kaconf.org/)。

This time I got to rekindle old friendships and also knew new people. I am extremely grateful to the support of JFSC.

【Epilogue】

Finally I would like to add two topics.

- TV program on Tyler Cowen
  - TV Ontario program that I watched by chance in my hotel room was “Tyler Cowen: Great Stagnation Interview The Agenda with Steven Paikin: No more low-hanging fruit.” This seems to be a little less than 30 minutes interview program by Mr. Paikin. If you are interested in the contents, please refer to URL in the Ref. (1). On Tyler Cowen’s the Great Stagnation, I wrote a book review(2) in No.75 of Space Japan Review, 2011. I know that it is still a hot topic.
- $1 and $2 bill become void
  - When I paid in cash a portion of the hotel room charge at checking out of the hotel, I tried to pay by bill of $1 and $2 to $3 for a fraction of the charge. But a hotel clerk let me know that these banknotes are not effective anymore. Nevertheless I came to Canada five years ago, I was surprised that these banknotes have already be not effective. I regretted at the same time that I used this bill for tips of room making in the morning and the restaurant last night. When I waited for a taxi in the lobby, the hotel clerk and another person approached me and said to me “Why do not you change your $1 and $2 bills to a $5 bill?” I had only a $1 bill and a $2 bill unfortunately, but he allowed to change them to a $5 bill, seeming to gather as much souvenir. I experienced an interesting happening. I used the $5 bill for a breakfast at the airport.

References

(1) http://ww3.tvo.org/video/182491/tyler-cowen-great-stagnation
(2) Takashi Iida: “Space Japan Book Review -From a satcom researcher point of view “Tyler Cowen: "The Great Stagnation", Penguin, 2010.”, Space Japan Review, No.75, Aug./Sep. 2011 http://satcom.jp/English/e-75/spacejapanbookreviewe.pdf