

For Further Expansion of Satellite Communications

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Biography

Mr. Naoki Okano graduated from the Graduate School of Engineering, Kyoto University in 1986 and joined Ministry of Posts and Telecommunications in the same year. He has concerned policies including technology development, standardization, telecommunication business and broadcasting business. Mr. Okano takes up the present position in 2007 after assuming director of Multimedia Mobile Communications Office and director of Space Communications Research Office.

All of Members, AIAA Japan Forum on Satellite Communications, Congratulations on the successful launch of satellite "Kizuna"!

Really congratulations on successful launch of super-high-speed Internet satellite "Kizuna" (WINDS). As for this satellite, its development has been pushed forward since 2001, and it is deeply impressive at all that a rocket embarked the satellite flies away to sky with powerful white smoke at 5:55 p.m. on February 23, 2008. I would like to thank heartily to all people for their effort of this launching and development of this satellite and also thank people for their interest and support to the field of space in various style. The launching was over successfully, but the satellite started its public performance. I expect results with many crops.



Launching "Kizuna"
(courtesy of JAXA)

I have heard that the AIAA Forum on Satellite Communications was triggered to start by the AIAA International Communications Satellite Systems Conference held at Pacifico Yokohama in February 1998. Then various projects advance, and space becomes familiar in our everyday life. A mobile cell phone carrying every day has GPS receiver. I can watch TV with a mobile cell phone by "1 Seg" (digital terrestrial broadcasting for mobile phones). In conjunction with TV, a satellite conducts its program transmission for the program production. Images from space by broadcasting and weather information become daily life. I am honored to be in charge of space communication policy at the time that satellites become familiar to us and have a great potential of future.

From "Frontier" to "Frontier & Common"

The field of space is called as a frontier. According to a dictionary, "frontier" means "a border area with reclaimed land and the uncultivated ground, and the forefront of science and technology". This is why the field is cutting edge and excited. And also why it is the most forefront range of the human activity. However, I consider it to be a slightly embarrassing thing that the technology remains in the same domain, that is a frontier. It is necessary that making the things developed to turn into, so to speak, normal things which secure the functionality, reliability and cost characteristics surely in the domain within the front-line, while the front-line is advanced. It seems to be said that glasses were no use formerly to become an astronaut. In addition, it seems to bring a tube with astronauts to draw it out when a throat was clogged up with water due to zero gravity. However, it is OK now, if corrected eyesight clears a standard. In addition, it is understood that the tube which drew out water was needless. By experience, switchovers from a frontier to a normal domain advance in a field of an astronaut. In the field of satellite communications, it is necessary to move many things to a normal domain from a frontier domain, and to make use of a characteristic of satellite communications. For example, the basic technology for medium- to large-sized satellites supports operational satellites. It is important that the technical succession/advancement is conducted steadily and that higher power and lower cost are established at the same time.

On the other hand, it is necessary to perform a little drastic action for mind by "big one step in a frontier domain if it is the same one step". It will not be able to easily make trial and error in the space field. But it is important for reclamation of a frontier domain to do a daring challenge in realistic form, based on an enough prior close inspection and decreasing cost of expense for an action. Even if someone had sense of incongruity for words of "a daring challenge in realistic form", he/she would approve it being "a reckless trial" not "a daring challenge" that the person who does not train faces a professional boxer. I would like to brush up a measure so that a new measure in satellite communications is recognized as "a daring challenge", and to tie it to realization, looking up at cooperation of the person concerned. In the field of satellite communications, its development can bring a big influence effect in material, components and other field, since it is a cutting edge technology based on a high level of demands. It is important to take it to a regular spiral. Various activities are made now by a small satellite. I expect these activities to succeed from a point of view saying "a daring challenge".

Importance of Concentrating Synthesis

There are many insufficient cases to use only satellite communications in a simple substance, while a terrestrial communications network is got ready. In addition, expansibility can lack in preparing all things for exclusive use of satellite communications including a terminal and a server, and such an environment could not be prepared. After all, mutual practical use with a terrestrial communication system is realistic and is important.

In terrestrial communication, IP progresses, and it is optimized in the form that was suitable for a ground means of communication. Of course, as for a ground means of communication, there are various means such as optical fiber, a coaxial cable, a mobile cell phone and wireless LAN. But, for example, since satellite communications has some extent of propagation delay, the optimum setting of the network should be examined to draw enough a function as communication. Development based on a terrestrial system as well as a satellite system is important so that the satellite function is utilized in the maximum.

While various technology fuses in the field of information and communication, it develops at an increasing tempo. The positive utilization of technology/know-how developed in the other areas, that is, the concentration of synthesis is important in the area of satellite communications. Of course this is not only an area of satellite communications. The same thing can be said in the areas of other information and communication. In a simple word, the information and communication has a flow that there is the content to convey and convert it into a signal and transmit it, and receive it at other places. The similar technology is used such as electric wave generation device or a laser diode in a transmitter, for example, even in space or ground radio or cable system. We should make use of our knowledge each other. I would like to create environment that we stimulate each other, follow a good thing and make use of the failure in next again.

For Further Expansion

The Ministry of Internal Affairs and Communications has a policy of the research and development for common use of mobile telephone system for ground and satellite at the same frequency band by using the same mobile terminal both in the ground and satellite and for its application development. It is expected to promote technical development for expansion of satellite communications steadily in future. Finally, it is needless to say that cooperation and exchange of opinions internationally and among industry, university and government are important for further expansion of satellite communications. I expect that further expansion of satellite communications is promoted strongly and brightly through the activity of AIAA Japan Forum on Satellite Communications that people concerned to various areas about satellite communications participate together.