Summary Minutes of the 1st Meeting of the Study Group on Network Architecture

1. Time & Date: 16:00 – 17:50, Monday, January 29, 2007

2. Place: Special Meeting Room #3, 3rd Floor, Mita Kyoyo Kaigisho (Japanese Government Conference Building)

3. Attendees

(Members) (in Japanese alphabetical order, with honorifics omitted)

Tomonori Aoyama, Takashi Matsumoto (on behalf of Youichi Isokawa), Naoyuki Iwashita, Hiroshi Esaki, Yoshiro Okamoto, Yasuomi Misawa (on behalf of Hideo Okinaka), Toshifuku Yoshioka (on behalf of Mitsuo Kawato), Mikio Goto, Hideshige Komatsu, Yoshiyuki Takeda, Tetsuo Takemura, Toshitaka Tsuda, Miwako Doi, Hideyuki Tokuda (Chairperson), Takashi Hanazawa, Michitaka Hirose, Yayoi Hirose, Yoshihiro Fujita, Masaki Fujihata, Yoshifumi Takada (on behalf of Hiroshi Fujiwara), Akihiro Nakao, Motoo Matsuda, Takamichi Miyoshi, Ryuichi Yamamoto, Susumu Yoneda (on behalf of Tetsuya Yuge), Hajime Teshigawara (on behalf of Makoto Yokozawa)

(Total: 26)

(Ministry of Internal Affairs and Communications)

Kazufumi Taniguchi (Parliamentary Secretary for Internal Affairs and Communications), Kiyoshi Mori (Director-General of the Telecommunications Bureau), Shun Sakurai (Director-General of the Telecommunications Business Department), Katsuya Watanabe (Director of the Telecommunications Systems Division), Yasuo Tawara (Director of the Research and Development Office, Technology Policy Division), Naohiko Hagiwara (Assistant Director of the Telecommunications Systems Division), Manabu Nakazato (Assistant Director of the Research and Development Office, Technology Policy Division)

4. Agenda

(1) How to conduct Study Group activities

(2) Presentations

(3) Other

5. Summary of Discussions

[How to conduct Study Group activities]

○ The Secretariat explained how to conduct activities of this Study Group, using Handout 1-1, "Launch of Study Group on Network Architecture."

[Election of Chairperson]

○ Member Tokuda was elected Chairperson of the Study Group.

[Presentations]

○ Member Aoyama presented “R&D on New-Generation Network Architecture” (Handout 1-2).
○ Member Hanazawa presented “Network Architecture for the Near Future: 10 Years from Now” (Handout 1-3).
○ Member Nakao presented “Overlay Network: Environment Creating New-Generation Network Innovation” (Handout 1-4).

[Main comments and remarks made by members during free discussion]

○ Most of the presentations covered overseas trends and directions, and will be, in this respect, useful in our future study. As was also pointed out, it is important to secure an opportunity to conduct empirical verification and validation.
○ I have thought that the computer and the network have long been integrated, but am surprised to learn that we have yet a long way to go. From now on, we should consider both the real and virtual worlds, with more emphasis on the real side. As for the “Next Google” that is being studied at the Ministry of Economy, Trade and Industry, for example, the only approach remaining to us is one from the real world. In analyzing any events, the viewpoint of the real world will become increasingly necessary.
○ The creation of a good architecture would be of prime importance. In doing so, a social perspective should be employed; e.g., we should build, over a period of 10 years, an architecture that will have a life as long as 100 years. We will not meet this goal unless we have already started building consensus.
○ Regarding the real vs. virtual issue, what is accepted in the real world is often not accepted or permitted in the virtual world just because the latter pursues perfection. In addition, the virtual world tends to be much more expensive. We should seek a good balance between the real and virtual worlds.
○ The current state of affairs is that whereas we do have a global network (real) today, we do not have enough applications (virtual) running on it yet.
○ We were once a target of a cyber assault. We, as a company dealing with the application layer, are making every effort within the given constraints. It is necessary to build countermeasures for cyber assaults into the network infrastructure during its design phase.
○ While Japanese are good at manufacturing things, they are poor in creating a design, a framework, or an architecture. However, it has taken more than 10 years to build the Internet protocols, during which time they have consistently received governmental assistance and have benefited from a large contribution made by not only large enterprises and carriers but also a variety of people. While it would not be easy to build a new architecture in a short time, it is important that we rid ourselves of the feeling of not being good at the architecture, and that the government, industry and academia join forces to grapple with it.

[Main comments and remarks made by members on the viewpoints and direction of the study]

○ We would like to conduct research on the application of wireless technologies to inter-vehicle communication, etc.

○ Constructing a framework for the next-generation network will contribute to the strengthening of global competitiveness.
○ In conducting research in brain science, also, it is becoming necessary to consider the network.
○ We should avoid anything that will eventually place people at a disadvantage or bring them a negative impact, even if it looks good at first glance. I would like to take part in this Study Group with a view to the future.
○ We are offering cable TV services. We would like to think about what this infrastructure will enable us to do.
○ I have been under the impression that overseas companies tend to exhibit things in trade fairs and exhibitions from the viewpoint of how network architectures can be integrated into business, whereas Japanese companies tend to focus on technologies, or accumulation of them.
○ NWGN can be compared to constructing a new building. In this regard, I would expect NWGN to create something that younger generations want to do.
○ What is important with a network is how to connect the architecture to services.
○ In designing an architecture, it is advisable to first draw a vision of the future and then conduct the study toward it. In addition, from the viewpoint of materializing something concrete, it would be better to minimize complexity and strive for simplicity.
○ Services that are successful globally have successfully incorporated new technologies. We should have a flexible mindset that encourages us to employ any technologies that are good, regardless of whether they originate in Japan.
○ I would like attention to also be paid to image-related technologies during the study of the network architecture.
○ I would like Japan to further promote the broadband and ubiquitous technologies, in which it leads the world.
○ I represent the construction industry, which represents the very real world, quite opposite to the virtual world to which the network belongs. However, the network is gradually coming into the field of construction. Although small today, the interaction between the two will spread widely in 10 years. I would like to explore these potentials.
○ I would like to study, from the viewpoint of the virtual world, what functions and features are required for network architectures.
○ We need to give some thought to, and examine, how the network architecture is going to support people's [real] lives in the future.
○ The network should become something of a “given” as part of the social infrastructure, such as gas, electricity and water. It should also be noted that tremendous efforts are being made in the background to support such social infrastructure.
○ In the midst of the structural reform of the network, it is important to show new directions. It is also important to ensure that the network is available at all times. In addition, with a view

to enhancing international competitiveness, we need to lead the world in promoting network architectures.