

**Study Group on Communications Terminals in the IP Era
Draft Summary of Minutes (4th Meeting)**

1. Date

Monday, March 12, 2007, 3:30 p.m. to 5:30 p.m.

2. Location

Special Conference Room 4, 4th floor, Mita Kaigisho (Conference Hall)

3. Attendees (Last names in Japanese alphabetical order; honorifics omitted)

(1) Members

Hitoshi Aida (Chair); Mutsuya Asano (alt.: Yoshikazu Kobayashi); Ryuichi Inagaki; Takemitsu Kunio; Mikio Goto; Hiroshi Kondo; Yoshiyuki Sukemune; Nobuko Takahashi; Yoshiyuki Takeda; Miwako Doi; Takashi Hanazawa; Toshiki Hayashi; Susumu Hirano (Acting Chair); Hiroshi Fujiwara; Akira Maeda (alt.: Hiroyuki Mano); Makoto Miwa; Akira Murakami; Suguru Yamaguchi; Toshio Yamada; Tetsuya Yuge; Fumio Watanabe

(2) Ministry of Internal Affairs and Communications

Mori, Director-General of the Telecommunications Bureau; Sakurai, Director-General of the Telecommunications Business Department; Takahashi, Director of the IT Security Office; Watanabe, Director of the Telecommunication Systems Division; Nakamura, Deputy Director of the Telecommunication Systems Division

4. Agenda

(1) Presentations

(2) Report on the status of summarizing the questionnaires

(3) Others

5. Outline of proceedings

[Presentations]

○ Presentations by members

- Mr. Kondo (member): “Vehicles and Communications Terminals in the IP Era”

- Mr. Hayashi (member): “Study Group on the Vision of Communications Terminals in the IP Era”

○ The main comments of members in the question and answer session are as follows:

- Are the vehicles referred to in today's presentation mainly assumed to be private cars? Are there any differences according to the types of vehicles, for example, buses, two-wheel vehicles, or welfare bikes?
- The vehicles are not limited to private cars, but are assumed to encompass vehicles in general. Differences exist in terms of markets and purposes of use; however, there are no differences among them in principle, in that they all have a starting point, a destination, and a function of transporting people, goods, or information; and in that a framework for rendering them safer and more comfortable is being considered within this scope.
- The means of achieving more sophisticated functions differs depending on whether an ordinary person or a professional driver drives the vehicle. Today's presentation concerned the basic operations of driving, stopping, and turning, and the recognition and judgment skills of ordinary drivers.
- For professional drivers, a head-mounted display can possibly be used for assistance.
- There is considerable debate concerning the use of mobile phones inside vehicles. Even when using a hands-free mobile phone, the driver's brain may not immediately recognize what s/he is seeing when s/he is focusing on the conversation.

- The relationship between the network and the terminal is classified as either "stupid" or "intelligent." There used to be a firmly held opinion that networks were bound to be "stupid." Given this, why is the stupid network only considered to be a minor pattern in the IP era?
- There is no reason why networks should be stupid, considering the progress of computing so far and current transmission speeds, and there are no particular grounds upon which this opinion is based.
- Networks have become intelligent, and there is the opinion that it is desirable to utilize whatever means are available.
- Assuming that everything, including the application layer, lies within the scope of the network, the network will be intelligent. On the other hand, there is still the argument that the transport part may be simple.

- Due to the advanced nature of the display technology, electronic books may become popular if environmental issues are also taken into consideration. If there are legal regulations and guidelines for recommending electronic books for environmental conservation purposes, the information communications network will be utilized.
- It is likely that electronic books will become popular for young people in the near future. Such books are environmentally friendly, if expensive. Young people enjoy taking their time to read novels on their mobile phones and such publications are selling briskly.

- If electronic books are promoted for energy and resource conservation purposes, and it is specified that books for the National Diet Library shall be in electronic form, publication companies will be obliged to publish electronic versions, possibly resulting in increased sales of electronic versions.

- Vehicles carry human lives, and are widely used and indispensable in modern society. Attention is focused on vehicles in terms of the connection between the physical vehicle infrastructure and the information used. Now I would like to raise questions concerning the following two points: (1) While it is technologically possible to develop intelligent vehicles and information vehicles, they are not being developed at this stage in conjunction with legal, social, and cultural criticism and risks. (2) In providing services in combination with the various parties concerned, there seems to be a social consensus that, if the information provided is incorrect, the sender of the information bears responsibility for it. Furthermore, in the case of attempting to transmit urgent information and/or information for specific purposes, the relationship between development and responsibility is being studied, including the separation of incorrect information and the separation of responsibility in the case of any obstacles arising from the above combination.

- When tackling tasks that are originally thought to be easily achievable from the technological perspective, difficulties are often encountered due to insufficient social consensus and/or the infeasibility of the business model. Even in services already started, such as VICS, ETC, and HELPNET, disagreements exist among the ministerial agencies concerned, public corporations, local public bodies, and other organizations, hindering the realization of those services. In the case of HELPNET, the point of contention concerns how to prioritize due to the limited number of ambulances available. Also, in the case of the parking reservation system using VICS, charging at the point of reservation is required to render the business feasible.

- Furthermore, in the Telematic Service, there are many items that are technologically feasible. The accuracy and origin of information is an issue in the transmission of content, which in turn makes the certification of content also an issue. In particular, personal information management is important, and in terms of measures for handling it, in some cases the stance is taken of comprehensively and clearly taking responsibility for content without use of the Internet, despite its wide availability.

- While a study is required to determine which is better, the vertical integration system or a system that is partially horizontally integrated to enable the management function to work in some areas, it is necessary to establish a framework whereby providers take responsibility for providing users with guarantees. To realize particular services, the feasibility of the business model is a more serious problem than the technical solution, and it is required that the service be of benefit to users and also be reliable.

- In the figure showing the convergence with information terminals, which particular parts are related to IP in the linkage of vehicles, roads, drivers, pedestrians, and others?
 - Basically, IP will be necessary for the entire area in the future. Terminals for pedestrians must be within an ID system and connected to the Internet, and discussion will also be necessary on what to use for communication purposes in vehicles, groups of vehicles, and on the roadside.
 - Further discussion is necessary on the allocation of roles of the route control management, charging, and others. When the network becomes fully covered by the IP system, discussion of the matter will be easier, making convergence easier to achieve.
 - In the ITS world, the relationship between groups of pedestrians and between vehicles and pedestrians will be important, and a new type of terminal will become available. At that time, if the terminal specializes in only vehicle use, consumers will not purchase it.
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- Since vehicles move beyond national borders, a mechanism in which the terminal adapts itself to various formats will inevitably become necessary, leading to the establishment of a globally unified mechanism. If the latter proves to be difficult, should it be considered that a terminal adaptable to various formats be required for vehicle manufacturers?
 - Expectations for information terminals from the viewpoint of vehicles include a version update function, and, more specifically, software wireless technology and the formation of an information platform are considered. While implementation of the middleware and the application is not difficult even if they vary country to country, one issue involves how to organize physical layers that vary according to individual countries. At the same time, organizing physical layers leads to a thin client system for vehicles.
 - Furthermore, in the EU, culture and infrastructure vary from country to country, and in a sense, different terminals must be prepared for each country. Under such circumstances, competition based on quality, performance, and cost is made, and it is not necessarily true that products cannot be introduced unless everything is unified.
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- Considering the development of services such as ITS, the difference in versions may possibly be an issue depending on the penetration rate of terminals and services. Are there any examples in which the situation has drastically changed, or any points to note due to the difference in penetration rates?
 - As a current issue, the map for the navigation system has become obsolete. Now various companies are delivering differential map data; however, a framework for the version updating management is required on the delivery side. Furthermore, if everyone can exchange the map on a global basis in the future, the management method will become an issue.

- There is debate over to what extent the existing system and the new system can be converged if ETC is turned into DSRC, an evolutionary system. Also, the version update management will differ between systems with single functions and systems with multiple functions.
- It is unimaginable what vehicle-to-vehicle communications would be like in a society where both intelligent and stupid terminals existed.
- The behavior in a world where vehicles with a communications terminal and vehicles without it coexist is in the research and development stage. The existing technology can deal with the situation in the P2P world; however, further studies and discussions are required to deal with situation regarding groups of vehicles.
- While verification of whether or not vehicle-to-vehicle communications are effective is under way in field tests and others, if such communications can be made safe and convenient, and can act as appropriate solutions for issues such as traffic congestion, it is argued that vehicles should be equipped with vehicle-to-vehicle communication means.
- As for ETC, the level of purchasers' satisfaction will be the highest when the penetration rate is about 30 to 70%. If the penetration rate is low or close to 100%, there is only a small advantage in purchasing it. This is one of the reasons for the current rapid increase in ETC usage.
- A comparison was made between the vertical integration system and an open world system. To ensure security and safety, a vertical integration system with a closed system must be adopted in the present situation.
- There is the issue how to deal with security, safety, and responsibility in the open Internet world. Considering the issue of responsibility for IP terminals, the vertical integration system may be desirable if very important items, in particular human bodies and lives, are involved. However, since it is actually desirable to make the system open, a method for clarifying responsibility needs to be considered. If the method cannot be studied, there is an idea of adopting the vertical integration system for the time being.
- A study is required on how to hedge the secure part for the time being, and the method employed will depend on the required level. Unless we are ready to hedge the open system, problems in international competitiveness will occur due the delays in technological development. Innovation will only progress if there is a part left open for competition.
- Since a vehicle consists of many parts, horizontal division of work is applied in some areas, and competition will be lost if there is a lack of aspects such as open innovation. However, when the parts are assembled into products, it is required to establish a system by taking responsibility as a company to secure security and safety and share the concept with people and enlist their cooperation.

- If one consortium can unify the concept in the horizontal integration system, the vertical integration system does not necessarily have to be adopted. It will be important to plan products under the open system as far as possible instead of the closed system in the framework, in order to quickly adopt new technology for use in products and to win in international competition.

- For fast-moving vehicles carrying human lives and bodies, can there be any option other than the vertically integrated system, such as a system subject to consumers' choice, or a system based on cutting-edge technology?
- In the motor vehicle industry, while at least the function of safety must be understood by users, users can basically select accessories, and vehicle manufacturers cannot determine users' choices in the business model. The users' priority is to arrive at the destination safely, and the degree of compromise in comfort is subject to users' choice. It is necessary to comprehensibly explain to users what a particular function guarantees, in order to enable users to make their own choices.

- Is there any baseline to indicate to what extent consumers can make choices based, for example, on their own ability?
- Some regulations will be required on the method of use of information, which varies according to the layer and accountability, as these are performed on the network side. If consumers with poorer levels of media literacy encounter problems more frequently, this is considered to be due to insufficient accountability. Leaving everything to users' choice is risky, and requires detailed explanation.
- In the case of vehicles, the items that users choose are clearly visible; however, some terminals discussed in this Study Group are not.
- The range in which options are left to users differs significantly between Japan and foreign countries, and cultural differences may also affect the allocation of responsibility. Attempts to make breakthroughs in areas as yet unachieved despite the established technology will involve areas that are not handled by the Ministry of Internal Affairs and Communications, and where legal discussions have not been held.
- It is questionable whether discussions can be properly held on how responsibility for invisible parts can be allocated, and how Japan with its unique culture and background can establish a global concept.
- It will be necessary to become familiar with different cultures at a certain stage. This involves a high degree of difficulty; however, it is not unfeasible if 2015 is set as the target year. Without such familiarity, Japan will lag behind in international competitiveness.

[Report on the status of summarizing the questionnaires]

- Report on the status of summarizing questionnaires by the Secretariat

- The main comments of members on the report on the status of summarizing questionnaires
 - A study will be continued on the image of terminals until the next meeting. After compiling a collection of the opinions given in meetings held from April onwards, individual points of discussion will be summarized following the discussion on overall issues. In particular, coordination will be conducted on the image of the changes in terminals.

 - If the main focus is on the NGN, certain international standards can be seen. However, to what extent should the range of points of discussion be expanded if the scenario in 2015 is included?
 - It is requested to submit opinions, with 2010 set as the target year, on the basic concept and the direction, such as the issue of certification and the allocation of responsibility, as well as the respective roles of the government, operators, and venders. Attention will be given to the year 2015, in order to consider the scenario until 2010 in terms of holding the years beyond 2010 in view.

 - While the scenario concerning the technology and development of communications terminals in 2010 and 2015 is under discussion, usage will be complicated by such matters as whether or not consumers select such technology, as well as issues such as legal regulations, deregulation, and media literacy.

 - Setting 2010 as a target year is understandable in terms of considering specific policies. However, in any and all cases, the education of users is necessary, and this matter has not been visualized as clearly as the progress of technology.
 - It is requested that parties proposing technology proactively describe their image of 2015. Otherwise, the abilities required by the consumer side will not be visible. Since education requires more time than technology, it will not be completed in time unless started early.

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