<Draft Meeting Minutes>

The First International Workshop on Vehicle Safety Communications

Date: Thursday, September 4 and Friday, September 5, 2003
Venue: Association of Radio Industries and Businesses
Kasumigaseki, Chiyoda-ku, Tokyo, Japan

Note: All the presentation files are available from the website of ITS Info-communications Forum, Japan, at the following URL:
http://www.itsforum.gr.jp/Public/E9Meetings/index.html

Thursday, September 4, 2003

Attendees: Japan about 40
Korea 1
France 1
Norway 1
U.S.A. 6

Session 1:

Mr. Sam Oyama, Hitachi, convened the workshop at 9:30.

1. Opening Address
Professor Takaaki Hasegawa, Saitama University made the opening address.

2. Self Introduction
All the workshop attendees completed the round of self-introductions.

3. Objective of the workshop

Mr. Oyama explained the objective of the workshop. He also presented the agenda and the attendees approved the agenda.

4-1. Review of the VSC International Seminar
All the three lecturers, who made presentations during the VSC seminar the day before the VSC workshop, presented their outlines of the presentations. The presenters were;

(1) U.S: Mr. Tom Schaffnit, Schaffnit Consulting
(2) Europe: Mr. Guy Fremont, COFIROUTE, France
(3) Japan: Prof. Takaaki Hasegawa

Concerning the presentation made by Mr. Fremont, Mr.Teruo Yamauchi, AHSRA, raised a question on the communications method to be selected. Mr. Fremont answered that a variety of communications methods will be coexisting. Mr. Yamauchi also asked about the intended purpose of Infrared (IR). Mr. Fremont answered that IR is to be used for invalid vehicles detections, and so far IR has been

working without any problems.

Session 2.

5. Discussions
Prof. Hasegawa chaired the session at 10:30.

5-1. Objective of Vehicle Safety Communications
5-1-1. Japan: Mr. Akio Hosaka, AHSRA
Mr. Hosaka made his presentation on "Objective of Vehicle Safety Communication".

5-1-2. U.S: Mr. Schaffnit
Mr. Schaffnit made his presentation on "International Workshop on Vehicle Safety Communications-Session2-".

Mr. Yamauchi asked Mr. Schaffnit how to identify and warn cars in the intersection which were in danger of crashing.
Mr. Schaffnit answered that a combination of vehicle-infrastructure communications and VMS would likely be used to identify and warn the appropriate cars.

5-1-3. Europe: Mr. Fremont
Mr. Fremont made his presentation on "European perspective on Wireless Communications".
Mr. Tsutomu Iwahashi, Mitsubishi Electric, Japan was concerned about the Emergency System using GSM. He asked about the area to be served by the system. Mr. Fremont answered that the French government had announced that this safety service should be free of charge, and they cannot increase the service area.
Mr. Oyama asked Prof. Hasegawa about surveillance. Prof. Hasegawa raised a question on AICC based EPVM. His question was “How does it work?” Mr. Fremont answered that the system works with a mixture of satellite and radar technology.
Prof. Hasegawa also mentioned the necessity of having another positioning system.
Mr. Horimatsu raised a question on the frequency for vehicle-to-vehicle communications vs. AICC. Mr. Fremont’s answer to him was that the systems use the same frequency.
There was a discussion on the pedestrian fatalities in the U.S. between Prof. Hasegawa and Mr. Schaffnit.
Mr. Knut Evensen, Q-Free, Norway, said that the IETF is trying to standardize on pedestrian safety.
There was a comment that Japan has been studying pedestrian ITS.
Mr. Sung, Samsung Electronics, Korea, raised a question on UWB standardization, however, there are no activities in Europe on UWB yet, according to Mr. Fremont.

After the lunchtime break, the afternoon session was reconvened at 13:30.

Session 3.
At 13:30, Mr. Evensen chaired the session.

5-2-1. U.S; Mr. Schaffnit
Mr. Schaffnit made his presentation on "International Workshop on Vehicle Safety

Communications -Session3-"

5-2-2. U.S; Mr. Russel Shields

Mr. Shields made his presentation without slides. The points of his presentation are the following:

In the US, the project called VII proposed by GM and supported by DaimlerChrysler and AMIC, has been started. Eight states applied for the project. The VII plans to make a demonstration during the ITS World Congress in San Francisco, in October 2005.

On the i-safety(?) issue, vehicle manufacturers will introduce their new cars with 802.11 Wireless LAN based units installed.

On 802.11p, TG has been started in ETSI.

To VS purpose, the ISM band cannot be acceptable to share with VS applications because of possible interference and QOS issues. VS applications require highly reliable communications.

In 2010 or later, the system will move from a warning system to an active collision avoidance system.

The US and Europe have proposed the spectrum for VS.

Precision positioning data is to be collected by WLAN at 5.9 GHz from probe vehicles and used to increase the accuracy and detail of maps.

Mr. Yamauchi raised a question on the relationship between VII and ED Map, including the frequency of data collections.

Mr. Shields said that the basic data will initially be collected by cellular, and later will mostly be collected in much more detail by 5.9GHz.

5-2-3. Europe: Mr. Fremont

Mr. Fremont made his presentation on "CHAUFFEUR 2 Final presentation Balocco, 07.05.2003".

Mr. Mizutani asked a question about cost reductions, such as payments for drivers in the second and subsequent vehicles.

Mr. Fremont answered that it will depend on the unions.

Mr. Mizutani also asked about the dedicated lane for automatic diving. Mr. Yamauchi also asked about the applicability of this system to ordinary roads. The answer to these questions was “yes” by Mr. Fremont.

Mr. Yamauchi also asked about possible problems at the intersections. Mr. Fremont answered that intersection approaches are calculated by link distance and other parameters

Mr. Yamauchi raised another question about the difference of this approach from the PATH approach. Mr. Fremont answered that the differences from PATH are lane keeping for the dedicated bus lane, and no consideration of platooning.

5-2-4. Japan: Mr. Kaoru Seki, ITS Center, JARI, Japan

Mr. Seki made his presentation on "Applications of DSRC in Japan -DSRC application to Vehicle Safety-".

Session 4.

At 15:30, Mr. Fremont reconvened the session.

5-3. Communications for Vehicle Safety

5-3-1. ISO/TC204/WG16: Mr. Evensen,

Mr. Evensen made his presentation on "Communications for Vehicle Safety".

Ms. Miyoko Honma asked Mr. Evensen about the interoperability of CALM-M5.
Mr. Evensen mentioned that the service part is the most difficult part. However, the lower layers, such as the physical and MAC layers, which will be standardized by ETSI, will have interoperability.
Mr. Tachikawa asked about CEN WG9 activities. Mr. Evensen answered that the CEN Technical Committee will make a decision, and the outcome is uncertain.
Mr. Oyama asked about the DELTA project.
Mr. Evensen said that DELTA has been finished. The report and recommendation have already been made on that project.
CEN is trying to restructure its work items, and the DSRC interface is on the list of proposed items. However, the decision has not yet been made whether it should be included as a Work Item or not.

5-3-2. Europe: Mr. Fremont,

Mr. Fremont made his presentation on "IVHW: an Inter-Vehicle Hazard Warning System".

Mr. Norio Komoda, Sakura Enterprises, US, raised a question about beacons.
Mr. Fremont answered that the system used removable beacons for temporary hazards, such as “under construction” areas.
Mr. Komoda raised another question on necessary time or any good idea to increase penetration of V2V/V2R communication to make a success story because it has potential difficulty for customers' benefit/cost till its wide penetration.
Mr. Schaffnit said that we have to start with intersection collision warning and then go to the next step.
Mr. Fremont said that the project has lead by car manufacturers.
Mr. Evensen asked Mr. Fremont about the status of standardization on message contents.
Mr. Fremont answered that it will be standardized at the next stage.

5-3-3. Japan: Mr. Tetsuo Horimatsu, FUJITSU, Mr. Kunihiko Sasaki, DENSO and Mr. Shunji Miyahara, VISTEON,

Mr. Horimatsu and Mr. Miyahara made their presentation on "Study Approach of Vehicle to Vehicle communications".

5-3-4. U.S.: Mr.Schaffint,

Mr. Schaffnit made his presentation on "International Workshop on Vehicle Safety Communications -Session4-".

Mr. Sasaki mentioned problems of latency and mobility on WLAN at 5.9 GHz. Mr. Schaffnit said that small packets for broadcasting will use the control channel. Mr.Sasaki asked about performance under high mobility conditions.
Mr. Schaffnit answered that performance is better than they expected.
Mr. Hirota, ITS Japan, asked about the performance at the corner.
Mr. Schaffnit answered that the performance with an omnidirectional antenna at non line of sight is better than they expected. Up to 2W is allowed in the US.

Mr. Namba, DENSO, asked about the performance differences between 5.8 and 5.9GHz.
Mr. Schaffnit answered that the main differences are 10MHz bandwidth and using the control channel instead of scanning.

Session 5 (Part 1)

The session was started at 16:30, chaired by Mr. Schaffnit.

5-4. Communications for Vehicle Safety (Field tests)

5-4-1. Japan: Mr. Yoichi Yanagiuchi, NEC and Mr. Masaki Terashima, Panasonic,
Mr. Yanagiuchi and Mr. Terashima made their presentation on "Study on the next generation ITS radio communication in Japan".

Mr. Evensen offered several comments, such as that the data transmission rate (which the ASTM standard DSRC has 6MBPS minimum using QPSK), using circular antennas, and other considerations, will provide simple solutions to the issues raised in the presentation.
Mr. Shields asked Japanese experts the reason why Japan doesn't join the development of CALM-M5 with the US and Europe. There was no comment.

At 17:30, the meeting for the day was adjourned.

Friday, September 5, 2003

Session 5 (Part 2)

The Chairman, Mr. Evensen, reconvened the workshop at 9:30.

5-4. Communications for Vehicle Safety (Field tests)
5-4-2. U.S: Mr. Schaffnit
Mr. Schaffnit made his presentation on "International Workshop on Vehicle Safety Communications -Session 5-".

Mr. Schaffnit mentioned that the data on VSCC field tests would likely be available on or after May 2004. The test kit software will also be open to the public in the near future.
Mr. Evensen asked what was happened at the distance of 100m.
Mr. Schaffnit answered that it was assumed that the reflection by the road was causing multipath interference because of the antenna. On the topic of antennas, a research project is being conducted.
Mr. Shields asked about the availability of combination antennas.
Mr. Schaffnit answered that the issue of antenna deployment is proprietary to the OEMs, but the VSC research intends to provide at least a reference design for DSRC antennas.
At last, Mr. Shields mentioned that having a low cost antenna is important.

5-4-3. Europe: Mr. Fremont

Mr. Fremont made his presentation on "Evaluation of the AIDA system".

Mr. Terashima asked about the frequency being used.
Mr. Fremont answered that the frequency is the same as ETC. CEN TC278 has been creating the standard for traffic information as one of the DSRC multiple applications.
Mr. Terashima asked Mr. Fremont to explain more about the DSRC multiple applications.
Mr. Fremont explained that discussions have been made several times already.
The parking application is not interesting. E-commerce is also not interesting.
Mr. Terashima also asked about the responsibility of frequency management.
Mr. Fremont answered that DSRC requires self-management in Europe.
Mr. Koga, NEC, raised a question of whether the transmission type is automatic or manual.
Mr. Fremont answered that it depends on the message. For example, incident information is transmitted manually.

Session 5 (Part 3)

The session was reconvened at 10:20. Mr. Schaffnit chaired the session.

5-5. Global Standards on ITS radio communications

5-5-1. ITU: Mr. Oyama

Mr. Oyama made his presentation on "ITS Standardization Activities -ITU-R, ASTAP & Japan-".

On WRC-03, Mr. Shields mentioned that the reason for withdrawal of the uniform 5.9 GHz ITS frequency proposal by Canada was because of lack of support from Japan. The US and Europe had supported the Canadian proposal. Mr. Oyama said that the information provided prior to WRC-03 by the US did not include the specified frequency band and this caused the problem.
Mr. Shields said the consensus was made the day before submission to the ITU-R by the government. Mr. Oyama said spectrum is an important government issue, not a technical level issue.

5-5-2. ISO and CEN: Mr. Evensen

Mr. Evensen made his presentation on "Communications for Vehicle Safety".

Mr. Schaffnit mentioned that it is a good idea to exchange information between VSC and CALM-M5.

5-5-3. Japan: Mr. Tachikawa

Mr. Tachikawa made his presentation on "Global Standards on ITS radio communications -Japan-".

Mr. Evensen asked if the frequency band for vehicle to vehicle communications was the same as that used for road to vehicle communications.
Mr. Tachikawa answered that 5.8 GHz and millimeter wave were used for the field

tests. However, the frequency assignment for real deployment has not yet been decided.

Session 6

Mr. Oyama, chairman, reconvened the session at 11:30.

6. Toward the future
6-1. Issues to be solved

6-2. Next workshop

7. Wrap up: Mr. Oyama

At the conclusion of this First Workshop, Mr. Oyama proposed the Second International Workshop on VSC, to be planned in the following manner;

Next workshop (Tentative):

June/July 2004 in Bay Area or Detroit, USA.
Sessions for 2 full days, plus technical visit

Objective:
Same as on the Tokyo meeting in September 2003.
To learn what is happening on VSC after the Tokyo meeting.
To discuss what we need to do on VSC.
To study possible cooperation with i-Safety Program.

Organizing Committee (Tentative):

Japan:	Horimatsu, Nakamura, Yamauchi, Seki, Oyama
US:	Schaffnit, Honma, Komoda,
Europe:	Fremont, Evensen

The workshop attendees approved the proposal.

8. Closing Remarks:

As his concluding message, Dr. Katsuhiko Kosaka, ARIB, Japan, stated that it was successful to have this workshop.

Mr. Oyama conveyed special thanks to Mr. Nakamura, ARIB, Mr. Yamauchi, AHSRA and other staff members for their strong support of this workshop.

9. Adjourned

The workshop was concluded at 12:00.

Technical visit

Date:	Friday, September 5, 2003 12:30 – 18:00
Venue:	National Institute for Land and Infrastructure Management (NILIM), Tsukuba, Ibaraki, Japan
Attendees:	12

After the workshop sessions, experts from overseas visited NILIM, and experienced ride-along demonstrations of systems for vehicle safety. The trial rides effectively demonstrated to the experts that it is necessary to have assistance from roadside communications to support a number of vehicle safety applications. However, it was mentioned that the level of services, such as the ways of providing information, have to be discussed between researchers in each of the countries.

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