

when public authorities must reduce spending while offering better and more environmentally compatible services, these benefits cannot be ignored.

Realizing these benefits in a public transport information system, however, requires a wireless data technology that is up to the task. If data from vehicles is not received due to the unavailability of data channels, dropped connections during roaming or other network problems that prevent data delivery, the whole system breaks down. Information provided to passengers at bus stops and train stations is incorrect or missing. Dispatchers are not able to deal with disruptions of service dynamically as they arise. Drivers become harassed and are unable to work effectively. Irritation among passengers mounts, while operating costs increase. These are the inevitable consequences of choosing next-best technology that is

not up to the task. The market for information technology and wireless solutions in the public transport and Intelligent Transportation Systems (ITS) sector is set to create a major new market worth \$8 billion in the US and \$5 billion in Europe, for technology vendors within five years. The benefits of ITS systems go beyond direct commercial gain, however. Indirectly, they represent huge potential savings on the public purse as well as in insurance payouts. Government spending on public safety (police, fire, ambulance services), medical care and social benefits resulting from accidents could be substantially reduced, more than covering the cost of such systems. Lower insurance payouts would encourage insurance companies to promote ITS and ultimately feed through to lower premiums and lower transport costs in general. By assisting the collection and dissemination of information, wireless

technologies can help to provide remote control, signalling and information capabilities, for fleet management and safety applications. Wireless cellular systems in particular, with their widely available coverage, hardware and expertise offer a convenient and reliable alternative to proprietary radio systems and other methods of communication. Cellular systems provide standardised solutions for many communications requirements in the signalling and control areas of ITS and transport systems and are being implemented in these areas by a variety of major players.

This text is based on two articles:

Wireless data technology for public transport systems
(www.mobitex.org/resources/pubtransport.pdf)

Wireless transport systems seen as major new market
(www.m-travel.com/11002.shtml)

HITACHI NEWS

Top flight advertising at Heathrow

As was already touched upon in Connexion issue 6 & 9, "Inspire the Next" is Hitachi's corporate statement. Those of you who regularly travel through Terminal 3 at Heathrow will have seen the Hitachi Inspire the Next posters in the arrivals hall, on the way to baggage reclaim after passing through passport control. There are also poster sites in the departure lounge of Terminal 1 and on the arrival/departure concourse of Terminal 2.

The posters have been in place for over a year now, and will soon be replaced with a newly designed poster that reflects the latest creative for our global advertising campaign. Its theme is Technology in Action, and the focus will be on Rail, Storage, Plasma and Power, which are all key growth business areas for Hitachi in Europe.

It is in place since the end of August, so make sure you keep your eyes open!

For more information please contact Caroline Kyrke on +44 (0) 1628 585340, or caroline.kyrke@hitachi-eu.com.



Visit the new Forum homepage:
www.hitachiforum.com

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THE NEWSLETTER FOR MEMBERS OF THE EU HITACHI SCIENCE & TECHNOLOGY FORUM

ISSUE 15

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Editorial note



"The Forum ambitious goal is to make its members part of the public policy debate on the role of science and scientists in today's European society". I wrote this a year ago, today you will be pleased to know that through the Antwerp Forum and the summary of its pro-

ceedings we are moving closer to achieving this goal. The summary was sent to many EU and national key people. It is a great reward to get many thank you letters from Commissioners' offices, from several directorates from the Commission, from MEPs. This clearly signals we are on the right track. Congratulations to all of you!

The new working Group, under Dr. Dónall A. Mac Dónaill's chairmanship has already started to address next year topic. We are also actively looking to appointing a Forum moderator, whom we would like involved in the elaboration of the Forum agenda. Before the year end we will come back to you with precise information on the agenda. In this respect, you know we will be glad to provide you with advanced reading and information should you be interested.

Connexion wants to be a link between Forum members. Please do not hesitate to provide insights, articles, comments we will be glad to publish them.

Our next Forum will take place in Stockholm on 14-16 May 2004. Again it will be a challenging meeting and I hope to see many of you on that occasion.

Hans Craen will be leaving Hitachi on October 10, I wish to thank him on your behalf for his many contributions and wish him a well-deserved success in his future activities. Mrs. Kinoshita will replace him, I am sure she will enjoy your support for a continued challenging and friendly Forum.

Norikiyo Koide

General Manager
Hitachi Corporate Office, Europe

"Transport and its implications for European Society" Progress Report by Chairman of the Working Group

Dónall A. Mac Dónaill

The theme for the 7th EU Hitachi Science and Technology Forum is "Transport and European Society." The topic of transport is extremely broad, and affects each of us, both directly and indirectly in almost every aspect of our lives, from how we get to work, to the food we eat. So extensive a theme naturally touches on issues addressed in previous forums, such as the 3rd Forum on "Electronic Commerce and its impact on Society" (Dublin, 2000) and the 6th Forum on "Energy and its implications for EU Society" (Antwerp, 2003).

Eight HIVIPS participants volunteered to form a working-group to assist Hitachi in selecting the particular topics for the 7th Forum. Some weeks ago every working group member was asked to suggest five or more topics, and the brainstorming began. As chairman I placed no limitations on the topics which might be considered, nor did I indicate my own preferences, as I wished to avoid the possibility of my own particular prejudices or interests might influence the discussion. As might be expected, the E-mail exchanges between working group members revealed a wealth of ideas, enough in fact, for several Forums.

One of the most popular topics, and not surprisingly since most of us are scientists/engineers, is the role of new and emergent technologies, from cleaner or alternative fuels, to information technologies, in changing our transport patterns, or at least minimizing the detrimental impact of transport on our social and natural environment. Other topics being considered include the role of the EU in shaping transport development and integration. Will we see a continent-wide high speed rail network in which it will be possible to travel from Stockholm to Madrid, or from Vilnius to London, on a single integrated system? There's also the thorny issue of public versus private transportation, and the extent to which we as European citizens, should be encouraged, or even pressured, into leaving our cars at home and embracing public transport. And just why is it that some public transport systems appear to work so much better than others?

Other topics under consideration relate to the impact of globalisation on safety, and the environment.

It is still too early to say what the final topics will be. One of the tasks before us as a working-group is to narrow these down to a manageable number. The working-group has made a running start, and over the next couple of months we will further refine the topics, in preparation for the Working Group Meeting which will take place in Brussels, on the 20-21st November 2003.

Finally, a word about the working group members; those of you who were in attendance at the 2003 meeting will remember how surprisingly quickly volunteers came forward. This same enthusiasm was reflected in the response to my request for ideas, and has made my job as chairman all the easier. To my fellow working-group members – thank you.

Dónall A. Mac Dónaill (Ireland)
Director of Computational Chemistry and Lecturer in Advanced Materials at the Department of Chemistry, Trinity College, Dublin

The other working group members are:

Amaury Catlin (Belgium)
Associate Business Analyst at SWIFT

Cathelijne Dortmans (The Netherlands)
Policy Advisor at the Dutch Ministry of Finance

Niek Ijzinga (The Netherlands)
Senior Consultant at LogicaCMG

Primoz Kerkoc (Slovenia)
Scientific Consultant at the Slovene Centre of Higher Education Studies

Bülent Öney (Turkey)
Assistant Professor at Dokuz Eylül University, Faculty of Engineering

Sylvestre Perrin (France)
Worldwide Marketing Manager (safety products) at Honeywell

Monica Tramontan (Italy)
Export Manager at Lampogas Group

Hitachi Sophia Antipolis Laboratory

Stéphane Amarger

Hitachi Sophia Antipolis Laboratory, as it continues to expand, has recently relocated to larger premises in Sophia Antipolis in South-East of France. The Laboratory was opened at the beginning of October 2000, and evolved due to four years close collaborative work and research with Institut Eurécom in response to the globalisation of networks, skills and economies.

Here, our research team is pursuing mobile computing and communications R&D activities in partnership with Eurécom and INRIA (The French National Institute for Research in Computer Science and Control).

The collaboration between Hitachi and Eurécom/INRIA is truly an international partnership and the Laboratory intends to work together with, not only government organisations but with private enterprises within the region, to produce quality developments within these fields.

Further to this, Hitachi is proud of the symposiums that it has held since 1997, which have focussed on mobile technologies and related topics. Speakers from across the telecommunications sector have been involved in the symposiums, and each year the attendance grows as the race to find the best solution to mobile technologies increases.

We are confident that with our growing knowledge and continued partnerships with Eurécom and INRIA it will help us to produce cutting edge telecommunications developments for the future, while our continued pursuit of excellence will maintain Hitachi's reputation as world leaders in research and development fields.

Research Topics

Recently HSAL have begun research on the following two projects:

Ad-hoc Network

While computer network has become an indispensable part of today's communication and knowledge acquisition capabilities, considerable complexities are involved in system definition and administration.

Ad hoc network, based upon wireless technologies, eliminates the complexities in infrastructure setup and management. It enables us to create, join or leave a new network freely, anytime and anywhere.

6QM

The objective of this European project is to develop a QoS (quality of service) measurement tool for IPv6 based IP network system. The consortium includes members from computer industry, communication infrastructure, consulting, and national R&D organizations.

We will soon expand our scope of research, addressing telecommunication systems at large, targeting applied cases in order to solve real business problems.

We are also expanding our collaborations through industrial partnerships (in order to address real problems) and partnerships inside Hitachi (like with HDCE, the Design Centre in Milan, in order to propose "close to market" solutions).

Stéphane Amarger is Laboratory Manager at Hitachi Europe - Sophia-Antipolis (Corporate Technology Group). For any questions, he can be reached at the following address : Immeuble Le Thélème - 1503, route des Dolines - 06560 VAL-BONNE (France) Telephone: +33 (0)4 89 87 41 00, email: stephane.amarger@hitachi-eu.com

7th symposium jointly organised by Hitachi & Eurecom

For the 7th time Hitachi is organising together with Eurecom a symposium which deals with the latest technologies in the telecommunication sector. It will take place on 27 November 2003 at Sophia-Antipolis and will deal with "Mobile communication for the society – Present and future".

Eurecom is a leading European telecom research institute in Sophia Antipolis, Southern France. As a key center for telecommunications research and development in Europe, Eurecom performs advanced researches in network and mobile computing and offers its students academic programs for degrees in the areas.

Hitachi System Development Laboratory (SDL) has built a close relationship with Eurecom and conducted joint researches together. Based on the joint research activities, Hitachi SDL has promoted international standardizations and established a solid foundation for expanding Hitachi's telecom businesses in Europe.

Researches on IPv6 and mobile networks and related application services are now actively carried on in Europe, which raises expectations of next-generation mobile businesses taking full advantage of high-speed, high-capacity communication systems.

Against this background, Hitachi-Eurecom symposium has been held annually since 1997 as part of efforts to enhance



partnerships and to promote technology exchanges.

If you are interested in attending this symposium or for any further inquiries, please contact Stéphane Dupuis at sdupuis@cm.px.head.hitachi.co.jp or at +32 2 643 48 88. More detailed information can also be found at www.eurecom.fr/Symposium2003/

Food for thought: Wireless Transport Systems

Public transport is a particularly attractive yet very demanding application area for wireless data. A wireless data system for vehicle tracking and dispatching and passenger information can significantly increase the efficiency of a public transport system while bringing passenger service and comfort to new levels. Realizing these benefits, however, demands a wireless data technology that is up to the task.

The communication network used in a public transport application must be able to handle a large amount of real-

time data that is generated by hundreds or even thousands of vehicles operating over a large and often densely populated metropolitan area. Typically, the data consists of positioning information generated by GPS (Global Positioning System) devices mounted in the vehicles that is forwarded over the wireless data network to a dispatching center where it updates a geographical information system that shows the current traffic situation and the locations of all buses and trains on all lines, thus allowing dispatchers to respond in real time to delays or interruptions of service.

The many thousands of vehicle positions being forwarded wirelessly to the dispatching center each hour are only the raw data for a public transport information system. In typical systems, there is also a substantial outflow of data to signs and monitors at bus stops and train stations that provide passengers with information about arrival and departure times and con-

necting lines. The dispatchers also use the system to send orders to drivers, so that a bus may be told to wait some extra minutes, for example, if a bus on a connecting line is delayed. Another important use of the system is to allow drivers to send an alarm to the dispatcher if an accident or a robbery occurs.

For public transport operators, a wireless data system can significantly increase the efficiency of transport services while greatly improving comfort, convenience and service for passengers. These benefits are very real and measurable. Fuel costs are reduced, and fleet management becomes more efficient. Fewer vehicles, drivers and dispatchers are needed, thus reducing both capital and overhead costs. Commuters get to their destination faster and are thus more productive. Improved service can provide the incentive for many people to leave their cars at home and take public transportation. At a time