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WISECOM
Wireless Infrastructure over Satellite
for
Emergency COMMunications

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Thematic Priority: Information Society Technologies (IST)

Deliverable D6-1
Final Dissemination Report

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General

Document Info

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1 Introduction

1.1 Background and Scope of the Document

This document presents and summarizes the dissemination activities of the WISECOM project for the complete project duration.

The purpose is to describe the actions and activities the project has conducted for multiple purposes. It has the form of presenting the activities, rather than presenting the project itself. The relevant publications do that well and it is not the intention to copy such content into this deliverable.

This document is one of the last documents produced from the project in order to collect all efforts that have been performed.

1.2 Structure of the Document

The present document is organized as follows:

- First general and common dissemination is presented
- Next, dissemination is presented per partner
- The end summarizes and concludes

1.3 Related Documents

1.3.1 Applicable Documents

In principle all WISECOM documents are applicable; their main ones perhaps are listed below.

- [AD-1] “User and System Requirements for Emergency Telecommunication Services”, D1.2-1, rev2 – WISECOM, Work Package 1.2, 19/01/07.
- [AD-2] “Demonstrator Specifications and Design”, D3.1-1, WISECOM, Work Package 3.1, 20/09/07
- [AD-3] “Demonstrator Development Report”, D3.2-1, WISECOM, Work Package 3.2

1.3.2 Reference Documents

- [RD-1] E. Fazli, D. Tassetto, H. Tork, J. Laineste, M. Werner, “Location Based Services (LBS) and Localization Techniques for Satellite Based Emergency Communications”, Wireless Rural and Emergency Communications Conference (WRECOM 2007), Rome, Italy, 1-2 October 2007.
- [RD-2] E. Fazli, M. Werner, N. Courville, M. Berioli, V. Boussemart, “Integrated GSM-WiFi Backhauling over Satellite: Flexible Solution for Emergency

Communications”, IEEE 67th Vehicular Technology Conference (VTC2008-Spring), Marina Bay, Singapore, 11-14 May 2008.

- [RD-3] E. Fazli, M. Werner, N. Courville, M. Berioli, V. Boussemart, “Development of Integrated and Transportable Communication Terminal Using GSM and WiFi over Satellite for Emergency Communications “, 26th AIAA International Communications Satellite Systems Conference (ICSSC 2008), San Diego, CA, 10-12 June 2008.
- [RD-4] D. Tassetto, E. Fazli, M. Werner, “A Novel Hybrid Algorithm for Passive Localization of Victims in Emergency Situations”, 4th Advanced Satellite Mobile Systems Conference (ASMS 2008), Bologna, Italy, 26-28 August 2008.
- [RD-5] H. Skinnemoen, S.K. Hansen, Axel Jahn, M. Berioli “Satellite Based Infrastructure for Emergency Communications”, AIAA ISCCS conference, Seoul, Korea, April 2007

2 General Dissemination

The motivation for the dissemination activity includes objectives such as

- Make the project known in order to find partners and possible customers/user
- Document the work of the project
- Disseminate to standards bodies
- Allow others to build on the effort and benefit from the community funding
- Allow partners to advertise their efforts and results in order to develop spin-off effects.

The purpose of the dissemination activities are to contribute towards these objectives. In order to best to that, a multi-angled approach is selected, with both a broad public including the satellite community and the Emergency Communications Community as a whole but also national and local focus as well as specific targeted focus to areas deserving special attention is important.

2.1 WISECOM Flyer

A project flyer was designed by DLR together with an external architect and professional designer for dissemination purposes. The flyers were distributed at different conferences and public events, and it was printed two times, with slightly different updates on the text, also to advertise the final WISECOM demonstration. The total amount of printed copies was around 2000.

The flyer was printed in DIN A4 format, folded in a way to have 6 pages. The following two pictures show the front and back pages of the flyer.

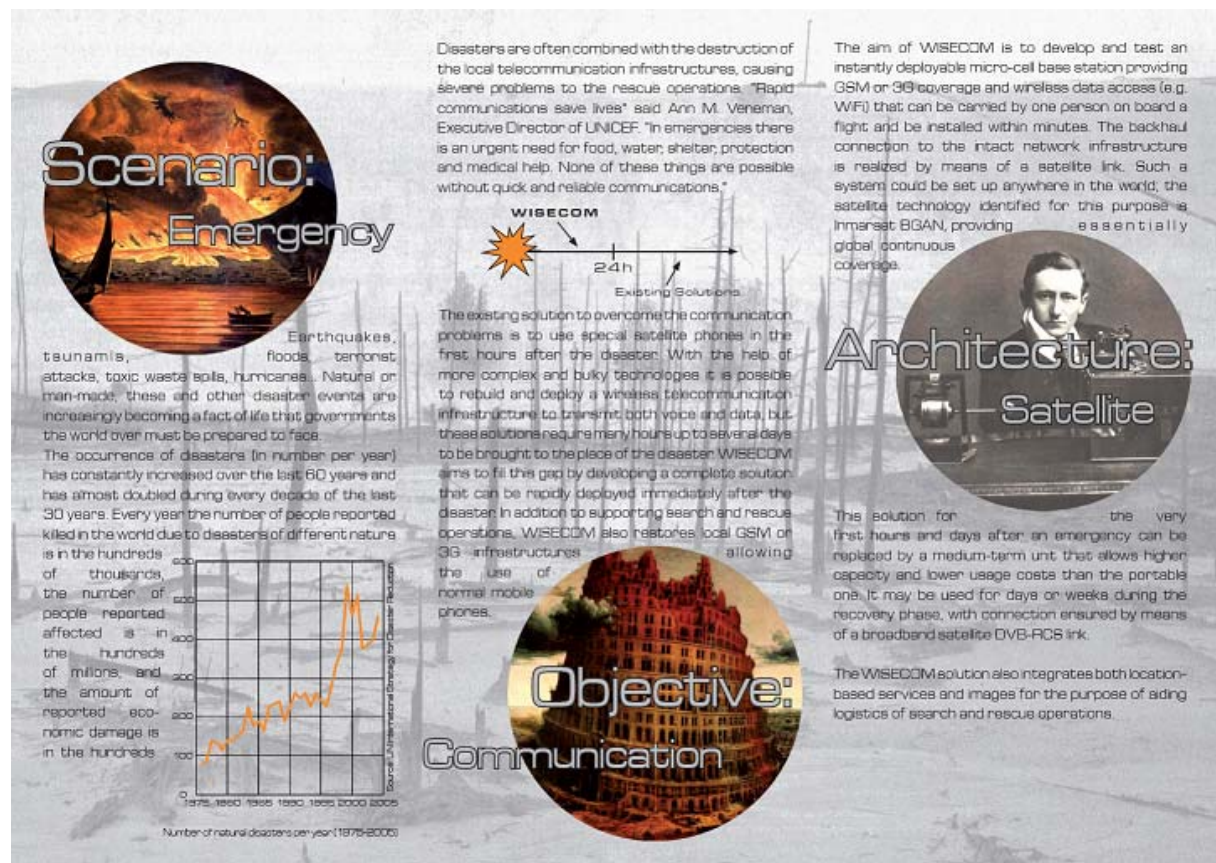


Figure 1: Pages 2, 3, and 4 of the WISECOM flyer.

Summary & Strategy

The WISECOM project is supported by European funds under the FP6 IST Programme (contract no. 019707/01). It studies, develops, and validates by two trials communications infrastructures for emergency conditions (after a natural or industrial hazard). The system integrates terrestrial mobile radio networks - GSM, WCDMA, WIMAX and UTRAN - over satellites, using Inmarsat, ORAN and DVB-RCS systems. WISECOM uses lightweight and rapidly deployable technologies, and incorporates location-based services. The infrastructure is intended to cover immediate needs in the first hours and days after a disaster event, as well as medium to longer term needs, during the recovery and rebuilding phase following an emergency.

The WISECOM system will be soon presented during a live demonstration:
April 29th, 2008
 in **Oberpfaffenhofen** near Munich (Germany).
 Fly to Munich <http://www.wisecom-fp6.eu>

WISECOM is counting on active participation by medical and rescue organizations. Your feedback is welcome and will be taken into account.

Participants

COORDINATOR:
 German Aerospace Establishment (DLR)
 Institute of Communications and Navigation
 Germany

PARTNERS:
 TrisGruSys
 Germany
 Ansoft Technologies
 Norway
 Webcom SAS
 France
 Fraunhofer Foundation Center
 Germany
 Telesp U
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WISECOM
 Wireless Infrastructure over Satellite
 for Emergency COMMunications

Figure 2: Pages 5, 6, and 1 of the WISECOM flyer.

2.2 The WISECOM Website

A website was designed, prepared and maintained by DLR with regular updates on the project status and with recent news: www.wisecom-fp6.eu. Here are some screen shots of the WebPages.



Figure 3: Homepage of the WISECOM website.

WISECOM | Wireless Infrastructure over Satellite for Emergency COMMUNICATIONS - Microsoft Internet Explorer bereitgestellt: von

http://www.wisecom-fp6.eu/overview.php

Overview
July 30, 2008

MAIN MENU

- HOME
- NEWS & EVENTS
- OVERVIEW**
- PARTNERS
- STANDARDISATION ISSUES
- PUBLICATIONS
- DELIVERABLES
- LINKS
- CONTACT

PSC Europe Forum

INFORMATION

Scenario: Emergency

Earthquakes, tsunamis, floods, terrorist attacks, toxic waste spills, hurricanes... Natural or manmade, these and other disaster events are increasingly becoming a fact of life that governments the world over must be prepared for.

The occurrence of disasters (in number per year) has constantly increased over the last 60 years and has almost doubled during every decade of the last 30 years. Every year the number of people reported killed in the world due to disasters of different nature is in the hundreds of thousands, the number of people reported affected is in the hundreds of millions, and the amount of reported economic damage is in the hundreds of billions of US dollars².

Number of country-level natural disasters per year (1975-2005)

Year	Number of Disasters
1975	100
1980	150
1985	200
1990	250
1995	300
2000	450
2005	550

Objective: Communication

Disasters are often combined with the destruction of the local telecommunication infrastructure, causing severe problems to the rescue operations. "Rapid communications save lives" said Ann M. Veneman, Executive Director of UNICEF. "In emergencies there is an urgent need for food, water, shelter, protection and medical help. None of these things are possible without quick and reliable communications."

The existing solution to overcome the communication problems is to use special satellite phones in the first hours after the disaster. With the help of more complex and bulky technologies it is possible to rebuild and deploy a wireless telecommunication infrastructure to transmit both voice and data, but these solutions require many hours to several days to be brought to the place of the disaster. WISECOM aims to fill this gap by developing a complete solution that can be rapidly deployed immediately after the disaster. In addition to supporting search and rescue operations, WISECOM also restores local GSM or 3G infrastructures allowing normal mobile phones to be used.

WISECOM vs **Existing solutions** timeline:

- WISECOM:** Immediate response (represented by a starburst icon).
- Existing solutions:** Require 24 hours to be deployed.

Figure 4: "Project Overview" page of the WISECOM website.

2.3 WISECOM Trials

The consortium organized a major demonstration on the 28th of May 2008, showing the total sum of all parts of WISECOM. The WISECOM demonstration, together with all the preparation trials, which were conducted for more than one month before, was the most prominent event organized by the project. A complete and detailed description and analysis of the WISECOM final demonstration is provided in the deliverable D5.2-1. Anyhow it should be mentioned here that the organization of this big event forced DLR and SFZ to spend a lot of effort in public relations and discussions with external parties (press, civil protection authorities, regional fire brigades, etc.) and thus it produced in fact a lot of dissemination activities.

2.4 WISECOM Organized Events

This section lists the events specifically organized by the WISECOM consortium.

2.4.1 IST Summit

The consortium organized the IST Summit 2007 Workshop with FP6 BRASIL. The outline is shown below

The WISECOM and BRASIL Projects invite you to a FREE WORKSHOP during the IST SUMMIT in BUDAPEST, July 5th 2007

Solving world communications needs via satellite

Organized by the FP6 Projects BRASIL and WISECOM

Organizer and contact: Dr. Harald Skinnemoen, Ansur Technologies, NORWAY

Email: harald@ansur.no

BRASIL and WISECOM:

Advanced Broadband Satellite Systems for Rural and Emergency Communications

GSM and Internet over Satellite Communications - Similar Technology for two prominent applications!

- 1 – Applied to Ad-Hoc Emergency Communications via Satellite
- 2 – Applied to Rural Communications, focused on Latin America

Development of key technologies in satellite communications has at least two prominent applications. Both in Emergency Communication and in Rural Communications there is a need to provide cost-effective and rapidly deployable solutions for providing voice communications, multimedia and general Internet Access.

For emergency communications the solutions need to be bandwidth efficient in order to enable service capabilities via small satellite terminals.

For rural communications solutions need to be efficient in order to secure a business case over e.g. DVB-RCS based systems.

The aim on this particular workshop is to discuss how satellites can be used in order to save lives and the environment in rapidly deployable ad-hoc solutions using e.g. BGAN and DVB-RCS, and next highlight interesting benefits for Rural Communications in e.g. Latin America and Brazil, using similar technology in new configurations. We will discuss how a joint focus on these two key developing areas enable an unique possibility for the society to benefit from the exclusive advantages of satellites and space communications via Inmarsat BGAN and the open standard DVB-RCS.

Limited Space - Register now via the WISECOM or BRASIL Websites:
www.wisecom-fp6.eu or www.dvb-brasil.eu

This was the program of the BRASIL-WISECOM workshop:

Time	Session	Title	Speaker	Affiliation
9:00	Opening	Setting the Scene for the workshop, Combining BRASIL and WISECOM	Dr Harald Skinnemoen	AnsuR, Norway
9:20	Session 1	Present Situation for Emergency Communications from an Emergency Physician View	Dr. Laszlo Gorove	
9:40	RURAL Overview	Rural Communications in Brazil; Visions and Challenges	Roberto Aroso	TELECOM, Leader e-Brasil
			
10:10	Session 2	Emergency Telecommunications over DVB-RCS	Jean-Louis Fondere	Thales Alenia Space, France
10:30	Satellites Rural	Satellites in Emergency and Rural Communication: Korean View	NamKyung Lee	ETRI, Korea
10:50	Emergency	ESA Satellite Communications Projects serving Rural and communications	Frank Zeppenfeldt	ESA, Netherlands
11:10		WISECOM: GSM and Wi-Fi Rapidly Deployed	Matteo Berioli	DLR
11:30	Coffee Break	Coffe Break		
11:45	Session 3	The PSCE Forum Vision & Roadmap	Latif Ladid	PSC Forum, Luxumbourg
12:00	Applications for Rural and	European Commission Initiatives for Emergency and Security via Satelite	Dr. Jorge Pereira	EU Commision
12:15	Emergency	Telemedicine in the Amazonas - a solution using the AmerHis satellite svstems	Frank Zeppenfeldt	ESA, Netherlands
12:30		TWISTER: Rural Experiences with Wi-Fi and DVB-RCS Satellite over 3 years	TBA	EADS Astrium
12:45		BRASIL: Providing Rural Services over Satellite	Harald Skinnemoen	BRASIL Coordinator
			
13:00	Session 4	How to explore the synergies further between SPACE, RURAL and EMERGENCY applications	Expert Panel , TBA	
14:00	END	Workshop Conclusions	Harald Skinnemoen	AnsuR

2.5 Press Releases

The following press releases and public announcements have been issued during the project (in the list it is mentioned also the topic of the press release):

- EchtZeit 2006 (internal DLR newspaper): Kick-off of the WISECOM project;
- EchtZeit 2008 (internal DLR newspaper): WISECOM final demonstration;
- DLR press distribution list: WISECOM final demonstration;
- Invitation to the WISECOM final demonstration: it was issued to selected people (around 100);
- Newsletter 1st Semester 2008 of DLR Center of Excellence 2008-2010 for Robust and Reliable Communications (this is a newsletter which DLR sends to a selected number of people and companies in the area of Communications for disaster relief): WISECOM final demonstration.

The feedback and the resonance of the press about the final demonstration was the following:

- Several German newspapers, regional and online ones (e.g. <http://www.merkur-online.de/regionen/bayern/:art8830,926506>, <http://www.gemeinde-anzeiger.de/>);
- Main Bavarian daily newspaper: Sueddeutsche Zeitung;
- Technical medical magazine: PN Verlag Krnakenhaus Technik + Management (www.ktm-journal.de);
- Online specific websites:
 - The Bavarian civil protection website reported a very detailed description of the final WISECOM demonstration (<http://www.katastrophenschutz-ev.de/content/view/72/9/>);
 - ICT Results (<http://cordis.europa.eu/ictreults/index.cfm/section/news/tpl/article/BrowsingType/Features/ID/89887>);
 - Inmarsat stories (<http://www.inmarsat.com/About/Newsroom/00024169.aspx?language=EN&textonly=False>);
 - Satellite Today (<http://www.satellitetoday.com/st/headlines/23972.html>).

In addition to general project PR, TriaGnoSys has issued a complementary press release on 29th May 2008, focussing on the BGAN-based WAT and the importance of this prototype development for the company's strategy and business development. The press release entitled "TriaGnoSys Launches GSM Network Capability For Disaster Recovery" is accessible for download via the Media centre page of the company's web site www.triagnosys.com.

3 Standards Bodies Dissemination

3.1 3GPP LTE SAE

About the initiative

3GPP LTE (Long Term Evolution) is the name given to a project within the Third Generation Partnership Project to improve the UMTS mobile phone standard to cope with future technology evolutions. Goals include improving spectral efficiency, lowering costs, improving services, making use of new spectrum and refarmed spectrum opportunities, and better integration with other open standards. The LTE project is not a standard, but it will result in the new evolved Release 8 of the 3GPP specifications, including mostly or wholly extensions and modifications of the UMTS system. The architecture that will result from this work is called EPS (Evolved Packet System) and comprises E-UTRAN (Evolved UTRAN) on the access side and EPC (Evolved Packet Core) on the core side.

Relevance

WISECOM is a network for emergency communication mainly based in satellites, but supporting 3GPP over satellite backhaul. As such the LTE should also be supported as needed when it is specified. Another question is if WISECOM actively should contribute to the LTE of UMTS. The group has considered this but concluded that it was not among the prioritized forums. These were more emergency oriented arenas. Also, the sustainability required for participation is better handled by the partners individually and outside of the project.

3.2 OMA DM

About the initiative

OMA Device Management is a device management protocol specified by the Open Mobile Alliance (OMA) Device Management (DM) Working Group and the Data Synchronization (DS) Working Group.

OMA DM specification is designed for management of small mobile devices such as mobile phones, PDAs and palm top computers. The device management is intended to support the following typical uses:

1. Provisioning – Configuration of the device (including first time use), enabling and disabling features
2. Configuration of Device – Allow changes to settings and parameters of the device
3. Software Upgrades – Provide for new software and/or bug fixes to be loaded on the device, including applications and system software.
4. Fault Management – Report errors from the device, query about status of device
5. All the above functions are supported by the OMA DM specification, and a device may optionally implement all or a subset of these features. Since OMA DM specification is aimed at mobile devices, it is designed with sensitivity to the following:
6. small foot-print devices, where memory and storage space may be limited
7. bandwidth of communication could be constrained, such as in wireless connectivity

8. tight security, as the devices are vulnerable to virus attacks and the like; authentication and challenges are made part of the specifications

Relevance

As for the 3GPP LTE, the OMA DM initiative is somewhat on the side of what WISECOM focuses on. It is not irrelevant to consider the topics of OMA DM, but we do not foresee special WISECOM devices but rated standards off-the-shelf devices. As such the standards developed by OMA DM should be supported over WISECOM access with satellite backhaul. The consortium does not see that a special initiative is needed in order for this interoperability now.

3.3 IEEE P1900.4 Working Group

Main characteristics of the working group

Among the possible relevant standards, a check on the interest for Wisecom of the IEEE 1900.4 Working Group has been handled over.

The IEE P1900.4 working group “Architectural Building Blocks Enabling Network-Device Distributed Decision Making for Optimized Radio Resource Usage in Heterogeneous Wireless Access Networks” is one of the 4 working groups of the IEEE P1900 Standards Committee. The objective of the committee is to develop supporting standards dealing with new technologies and techniques for the next generations of radio and advanced spectrum management

The purpose of the IEE P1900.4 working group is to improve overall composite capacity and quality of service of wireless systems in a multiple Radio Access Technologies environment, by defining an appropriate system architecture and protocols which will facilitate the optimization of radio resource usage, in particular, by exploiting information exchanged between network and mobile Terminals, whether or not they support multiple simultaneous links and dynamic spectrum access.

Relevance for WISECOM

The IEE P1900.4 working group is mainly involved in the Software Define Radio (SDR) problematic and addresses the future technical standards needed to get an operational SDR system. For instance, the Dynamic Spectrum Access for the radio system has to be studied and recommendations to be issued by the WG.

WISECOM is focused on the implementation and efficiency of hybrid technologies associating space and terrestrial systems for the purpose of public safety users. However, WISECOM project does not aim at refining or improving the existing terrestrial standards (Wi-Max, GSM, ...) which are applied as such on WISECOM configurations (DVB-RCS or BGAN ones). Therefore the involvement of WISECOM partner in IEEE working group is too far from the objectives of the project itself. From a standardisation point of view, some ETSI working groups on satellite have been considered of higher relevance for the project (see next chapter on SatEC)

To establish links with IEEE working group might be of interest for future optimisation of terrestrial/ satellite hybrid configurations, in particular if an optimisation of the air interface concept is deemed necessary to improve the overall system performance.

3.4 ETSI WG SatEC Satellite for Emergency Communications

Main characteristics of the working group

SatEC is an ETSI working group attached to the Technical Committee Satellite and Earth Stations (TC SES).

SatEC was created in September 2006 under the impulsion of the European Commission with the mission of specifying satellite based telecommunication networks able to cope with disasters. SatEC creation was clearly inspired by the example of two recent majors disasters where telecommunication satellites played a key role and could have played a even more important role : the giant tsunami of December 2004 and Katrina hurricane.

Its scope of activity as per the terms of reference is : “To perform standardization in the area of satellite emergency communication in particular involving broadband services.”

So far six meetings have been hold to which 14 persons, representing 7 organisations and 4 countries including a non European one (ETRI from Korea) have participated.

The two European space systems manufacturers (Thales Alenia Space and Astrium) participate to activities as well as three space agencies (ESA, CNES, DLR).

One deliverable has been published: Technical Report TR 102 632 “Overview of present satellite emergency communications resources”.

There are two deliverables in progress:

1. Draft Technical Specification DTS SES – 00310 “Multiple Alert Message Encapsulation over Satellite (MAMES)”
2. Draft Technical Report DTR SES – 00311 “Secunet Infrastructure Network for Civil Securities and Professionals (SECUNET)”

SatEC is liaising with working groups EMTEL (EMergency TELEcommunications) and MESA (joint TIA – ETSI project for integration of mobile networks with a view to emergency communications, possibly by means of satellite links).

Relevance for Wisecom

Three WISECOM members participate actively to the working group : TAS, Astrium and DLR. TAS chairs the working group.

The production of a deliverable which could value WISECOM work is under discussion : it is about an “Easily Deployable Emergency Communications Cell” (working name), a concept which has been validated by WISECOM project. It intends to specify an equipment transportable on disaster areas which could enable one to deploy quickly a wireless local loop based on various technology and to connect it to backbones by means of a satellite link. This deliverable is under the responsibility of DLR.

An official presentation of WISECOM was made at SatEC meeting 5.

3.5 PSCE Forum

DLR attended regularly all meetings of the PSCE Forum since its creation. Dr. Matteo Beriole was asked to chair a working group in the PSCE Forum about satellite communications, it was named SHARPS (Satellite and HAPs for emeRgency and Public Safety communications).

DLR has performed an important activity in the PSCE Forum. The activity of the PSCE Forum was advertised, a document was prepared to describe the objectives of having a satellite working group in the PSCE Forum, and in particular the creation of

the satellite working group was announced by means of newsletter to different groups of the European and international satellite community: the IEEE Satellite and Space Communication Technical Committee (SSC TC) of the Communication Society; the Integral Satcom Initiative (ISI) (the European Technology Platform for Satellites); the Satellite Network of Excellence (SatNEx). Matteo Berioli was asked to chair this satellite working group inside the PSCE Forum; the exact group name is Satellite and HAPs for emeRgency and Public Safety communications (SHARPS). DLR has toughly worked on the preparation of the SHARPS workshop, held in the framework of the 1st general assembly of the PSCE Forum, which was held in Luxembourg on the 21st and 22nd May '07. ASTR has appointed a permanent contact point who is part of this working group (Philippe Boutry); Mr. Boutry gave a presentation during the 1st SHARPS workshop (held in conjunction with the 1st PSCE Forum general assembly) on topics addressed through WISECOM. P. Boutry is actively supporting M. Berioli and F. Zeppenfeldt from ESA (who is also member of this working group) to reach a proper momentum and make the SHARPS working group alive and define complementarity with SatEC (ETSI) and EU Respond. The SHARPS working group has now met twice and has around 15 members from European industries and research centres.

The satellite working group of the PSCE Forum (SHARPS) was mentioned in the May 2007 newsletter of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER), see http://www.unoosa.org/pdf/unspider/UNSPIDERUp_05_07E.pdf.

3.5.1 SHARPS Description

Working group moderator: Dr. Matteo Berioli (Matteo.Berioli@dlr.de)

Mailing List: sharps@wisecom-fp6.eu

Website: <http://www.wisecom-fp6.eu/pscforum.php>

The working group held four meetings since its creation, two physical meetings and two telephone conferences. The reports of these meetings are available on the SHARPS homepage which was arranged inside the WISECOM website (see next figure).

The following issues should be addressed by the WG:

- Independent analysis of technical solutions for satellite and HAPs communications in emergency and public safety;
- clarify relation between commercial use and public-safety use of satellite capacity (and eventually also military capacity, incl. secure link);
- address the problem of reducing costs of satellite communications for emergency (evaluate technical possibilities).

SHARPS should also try to promote the Tampere convention.

A white paper was prepared, it includes:

- an overview of state of the art and of the upcoming evolution of the satellite and HAP technologies relevant for emergency and public safety, including in particular terminals, interoperability issues with terrestrial systems, technology limitations and advantages;
- a clear picture of user requirements (e.g. solution sustainability, rapid reaction capability), based on functional operational scenarios;

- a matching between user requirements and candidate satellite technologies, to clarify where satellites can be an answer;
- to identify open research areas and the need for new satellite interfaces/standards.

SHARPS have regular liaison with the following PSCE working groups:

- “User” working group in the PSCE Forum (still to be created: a note should be prepared and sent to the PSCE Forum chairman, before the PSCE meeting in October 2007, to propose to the PSCE Forum general assembly to create such a working group);
- “IP Based Public Safety Communication” working group;

Others (to be discussed).



Figure 5: Homepage of the PSCE Forum working group SHARPS.

3.5.1.1 External Liaisons

SHARPS have relation to the following external entities:

- ETSI SES/SatEC,
- ISI Security Working group,
- ESA,

- EURespond.

ETSI SES/SatEC: The ETSI/SES-SatEC working group is oriented to the definition of regulatory, procedural and technical requirements to support the adoption of existing satellite systems for EC (Emergency Communications). The ETSI activity may benefit from the interaction with PSC-SHARPS by:

- collecting all the relevant information from European companies and Operators about the recent available technologies and systems for space communications;
- being aware of the most recent technological trends for satellite communications and navigation services;
- recording an up-to-date map of emergency aware communication systems of other world regions;
- collecting and processing indications and ideas from companies and research centers useful for the development of standardization documents.

Similarly PSC-SHARPS will take benefit from the activities inside the ETSI group by:

- receiving the up-to-date reports on the SatEC standardization activity;
- sharing the most relevant regulatory and standardization decisions among PSC-SHARPS community, providing common targets for industrial partners and research institutions.

Note: ETSI SES/SatEC working group is going to draft an official statement for the liaison between SHARPS group and SES/SatEC in the next months, as required by the ETSI rules.

ISI Security Working group: SHARPS should liaise with satellite industries through the ISI European Technology Platform for satellite communications; a delegate of ISI may regularly attend SHARPS meetings and report the outcomes to the ISI general assembly, in order to keep satellite industries informed on the evolution of the SHARPS work.

ESA¹: SHARPS should give ESA guidance on what specific areas are outstanding in terms of research/development/demonstration, so that ESA could initiate more work in this area; it is foreseen to do this on ad-hoc basis and not regularly.

EURespond (<http://www.eurespond.org/>): EURespond is an alliance working to provide, among other things, Europe with easy-to-use, resilient, and ubiquitous communications systems for emergency response. Its aim is in particular to raise awareness with policy makers and other relevant decision makers of these issues. SHARPS will try to use the political channels provided by EURespond to bring forward its decisions and to make them reality.

¹ The collaboration with ESA is still to be clarified.

4 Description of Dissemination by Participants

In this section all participating organizations describe their objectives and results of their dissemination activities.

References are also found in the reference section and links to events in the Annex. In this section papers with more than one WISECOM partner may be listed more than once, aimed to indicate where partners have contributed. Also non-accepted papers are listed here, while they are not in the final reference list.

4.1 DLR

4.1.1 Objectives and Targets

The goals of DLR in disseminating WISECOM activities were mainly linked to advertising its competence and competitive strength in the area of satellite-based, rapidly deployable networks for environmental risk management. DLR has been active in this area for some years. The WISECOM project helped to get more system knowledge and novel practical solutions, which satisfy the communications needs primarily for post-disaster, but also for pre-disaster management.

WISECOM also enabled to strengthen synergies with other projects running at DLR.

4.1.2 Specific Actions

4.1.2.1 Papers and Presentations

2 papers with TGS:

- E. Fazli, M. Werner, N. Courville, M. Beriola, V. Boussemart, “Integrated GSM-WiFi Backhauling over Satellite: Flexible Solution for Emergency Communications”, *IEEE 67th Vehicular Technology Conference (VTC2008-Spring)*, Marina Bay, Singapore, 11-14 May 2008.
 - *Presentation*: E. Fazli (TGS)
- E. Fazli, M. Werner, N. Courville, M. Beriola, V. Boussemart, “Development of Integrated and Transportable Communication Terminal Using GSM and WiFi over Satellite for Emergency Communications”, *26th AIAA International Communications Satellite Systems Conference (ICSSC 2008)*, San Diego, CA, 10-12 June 2008.
 - *Presentation*: E. Fazli (TGS)

1 paper with ASTR (not accepted for presentation):

- “Hybrid satellite-terrestrial based solutions for rapid deployment of wireless telecommunication networks in emergency situations” Laurent Thomasson, Greet Verelst, Sophie Deprey, Philippe Boutry, Matteo Beriola, Nicolas Courville submitted to the 15th annual International Emergency Management Society (TIEMS) conference 2008),

1 paper with TAS (not accepted for presentation):

- “TETRA over DVB-RCS for Emergency Communications” V. Boussemart, M. Beriola and J.-L. Fondère, submitted to *IEEE 67th Vehicular Technology Conference (VTC2008-Spring)*

3 presentations in international workshops and events were co-organized, directly prepared by DLR, and in one case also given by DLR:

- presentation from Manfred Blaha (external) to the NATO SCEPC;
- presentation by Nicolas Chuberre (TAS) in an international workshop in Seoul (Korea) organized by ETRI, the Korean Electroni and Telecommunications Research Institute, on the 22.11.2007;
- Participation by Matteo Beriola (DLR) to the General Assembly of ISI, Integral Satcom Initiative (Erlangen, Germany), for the endorsement of WISECOM by ISI (24-25.10.2008).

4.1.2.2 Organized Events

DLR co-organized with AnsuR the BRASIL – WISECOM workshop during the IST Summit in Budapest, July 2007.

DLR took the responsibility for the overall organization of the final WISECOM demonstration.

4.1.2.3 National Focus

DLR has prepared and submitted a national project funded by the German Ministry of Research and Education, to investigate the open research issues coming out from WISECOM, e.g. emergency-specific satellite resource management, TETRA over satellite, meshed DVB-RCS networks. The project should start in Autumn 2008.

4.1.2.4 Web Based Activities

DLR had the responsibility of the project website, so they kept it up-to-date with the latest news.

4.1.2.5 Link to other projects

- **ISI Endorsement:** a presentation was given by DLR in the General Assembly of ISI, the procedure for endorsing the project by ISI was initiated and pursued; some ISI documents were updated by DLR with information on WISECOM, in order to give WISECOM the highest possible visibility in the European satellite community;
- **SatNEx Deliverables:** DLR participated in different working groups of the SatNEx project (in particular JA2120), in order to keep track of the research topics relevant to the project, and to disseminate project results in the academic community;
- **LIMES:** LIMES (Land and Sea Monitoring for Environment and Security) is an Integrated Project co-funded by the European Commission within the 6^o Framework Programme – Aeronautics&Space/GMES Security. It started on December 1st 2006, will end in 2010 and involves around 50 Partners. DLR is a partner of the LIMES EU project, and, also thanks to experience gained in WISECOM, performed outstanding demonstrations in Cyprus in June 2008, working on innovative solutions based on Earth Observation systems and satellite Communication and Positioning technologies for GMES (Global Monitoring for Environment and Security);
- **u-2010 / PSCE Forum:** Thanks in particular to the PSCE Forum, DLR had the possibility to be in touch with people from other European projects working on similar topics; in particular the use of the Internet Protocol (IP) for safety communications was discussed with partners of the u-2010 project (ubiquitous

IP centric Government & Enterprise Next Generation Networks Vision 2010), whose aim is mainly to address the public safety issues for emergency and crisis management investigating on innovative and state-of-the-art communication technologies, based on the current and new Internet technologies (e.g. IPv6).

4.1.3 Exploitation

The system knowledge gained by DLR in WISECOM will be reused in upcoming EC, ESA, and national projects and demonstrations. For the next future DLR also intends to support companies/organisations in the development and integration of commercial system solutions. Synergies with other activity areas of DLR were started and are being fostered; the most interesting topics in this respect are earth observation, monitoring, surveillance, and navigation for environmental risk management.

4.1.4 Results and Next Steps

4.1.4.1 Results and Conclusions

WISECOM has been a milestone for DLR activity in the area of satellite communications for safety and emergency situations; thanks to WISECOM it was possible to open new research directions for DLR, to investigate new concepts and to develop new satellite-based solutions for PPDR; Thus DLR has become a key player in Europe on these topics.

4.1.4.2 Including follow-up activities

WISECOM has provided DLR with the proper background to start a number of follow-up activities (two projects have already become reality) and to open new research directions.

4.2 TriaGnoSys

4.2.1 Objectives and Targets

TriaGnoSys' objectives concerning project dissemination and exploitation have been twofold:

1. General (paper and conference) presentation of both scientific and development/prototyping work.
2. Fostering focussed PR and contacts around the developed prototype, to explore potential market segments early in the development.

4.2.2 Specific Actions

4.2.2.1 Papers and Conferences

E. Fazli, D. Tassetto, H. Tork, J. Laineste, M. Werner, "Location Based Services (LBS) and Localization Techniques for Satellite Based Emergency Communications", *Wireless Rural and Emergency Communications Conference (WRECOM 2007)*, Rome, Italy, 1-2 October 2007.

Presentation: E. Fazli (TGS)

E. Fazli, M. Werner, N. Courville, M. Berioli, V. Boussemart, "Integrated GSM-WiFi Backhauling over Satellite: Flexible Solution for Emergency Communications", *IEEE*

67th Vehicular Technology Conference (VTC2008-Spring), Marina Bay, Singapore, 11-14 May 2008.

Presentation: E. Fazli (TGS)

E. Fazli, M. Werner, N. Courville, M. Berioli, V. Boussemart, “ Development of Integrated and Transportable Communication Terminal Using GSM and WiFi over Satellite for Emergency Communications “, 26th AIAA International Communications Satellite Systems Conference (ICSSC 2008), San Diego, CA, 10-12 June 2008.

Presentation: E. Fazli (TGS)

D. Tassetto, E. Fazli, M. Werner, “A Novel Hybrid Algorithm for Passive Localization of Victims in Emergency Situations”, 4th Advanced Satellite Mobile Systems Conference (ASMS 2008), Bologna, Italy, 26-28 August 2008.

Presentation: D. Tassetto (TGS)

4.2.2.2 National Focus

During the development and integration phase of the project, but especially after the final demonstration, TriaGnoSys has sought contact to various national (mainly local and regional) users of emergency communications equipment, such as fire brigades, emergency doctors, etc. This has been particularly useful in getting feedback also with respect to potential every-day use of BGAN-based WAT equipment, so as to increase the acceptance and improve the handling for larger-scale but infrequent disasters.

4.2.2.3 Web Based Activities

A summary project description and the press release have been included in the respective company pages under “Research” and “Media centre”. Moreover, reporting about WISECOM has been included in the regular company e-Newsletter.

4.2.3 Exploitation

The final demonstration and related press release is seen as a major step towards exploitation. A BGAN-based WAT prototype is available after the project, together with a number of lessons learned during integration and trials, so that the prototype can be made more mature in follow-on work to achieve a valuable piece of pre-commercial demo equipment.

TriaGnoSys will seek to bring this knowledge and the prototype development into potential future projects, and continue on the company-internal path of developing this into an element of the generic MOGIS product line of the company.

4.3 AnsuR

4.3.1 Objectives and Targets

AnsuR has had the objective of a broad basic dissemination combined with a focused dissemination targeted toward special segments. This has been done by performing a combination of conference participation, event organization, local dissemination web-based dissemination.

4.3.2 Specific Actions

4.3.2.1 Papers and Conferences

AnsuR has presented the WISECOM project and activities at the

- AIAA ISCCS conference in Seoul, Korea, April 2007
- Participated at the FP6 EU Respond, in Brussels 2007
- Presented papers at the IST Summit Workshop in Budapest that the consortium organized
- Presented WISECOM at the UN Global Symposium on Geneva 2007
- Presented WISECOM at CommunicAsia Satellite Forum, June 2008, Emergency Communications session.

4.3.2.2 Organized Events

AnsuR organized the BRASIL – WISECOM workshop during the IST Summit in Budapest, July 2007

4.3.2.3 Special Focus

AnsuR has specifically targeted UN/OCHA Dissemination. Participated to the Global Symposium for United Nations and OCHA, Releifweb, in October 2007, with the result of a further collaboration with the UN. AnsuR will among other things contribute with the ASIGN application during the large and important TRIPLEX exercise that the UN holds in September 2008.

A special invitation to the session on Emergency Communications during the Satellite Forum at CommunicAsia, Singapore, June 17 2008, indicates the success of the strategy. Although this event is two days after the formal close of the work or the project, the fact that AnsuR is so prominently placed in the international workshop shows the effect of the previous activities.

4.3.2.4 National Focus

Competitions:

AnsuR has participated three times in a national Innovation Competition hosted by the biggest bank in Norway. All times AnsuR has reached the final with the WISECOM projects SATIN and ASIGN. SATIN is here used as an acronym for Satellite Based Ad-Hoc Telecommunication Infrastructure Network. The competition has provided AnsuR with major dissemination opportunities, and have indirectly lead to the contacts with the United Nations.

4.3.2.5 Web Based Activities

AnsuR has presented the project and its two main activities on its website.

4.3.3 Exploitation

AnsuR is continuing the ASIGN and GSM-RCS activities full time and building a business based on WISECOM activities. Specifically AnsuR continues work with UN, expanding it to include ESA and Inmarsat.

4.3.4 Results and Next Steps

4.3.4.1 Results and Conclusions

Having initiated the project, WISECOM has been very important for AnsuR. AnsuR was partly founded in order to follow up this initiative, and has during the project

managed to create a business with significant growth potential. We would do it all again and would enjoy a follow up project.

4.3.4.2 Including follow-up activities

AnsuR has initiated plans for several follow up activities, including commercial and research activities.

4.4 Astrium

4.4.1 Objectives and Targets

EADS Astrium has contributed to several actions related to dissemination in the frame of the WISECOM project. The dissemination has been focused on two main points: Firstly on the use of satellite for emergency applications and secondly on the association of WiMAX networks and space segment to share the satellite resource between users and to link the WiMax local network to the global network.

The project WISECOM is fully integrated in the EADS Astrium approach aiming at providing the PPDR (Public Protection and Disaster Relief) users with a telecommunication package.

4.4.2 Specific Actions

4.4.2.1 Papers

14th Ka and Broadband Conference (Matera – Italy - September 24-26, 2008).

Initially scheduled for the 13th Ka and broadband conference held in Turin in September 2007, it has been decided to shift the paper to the 14th conference to communicate on quantified results (with results coming both from laboratory test campaign and from the last may on-field demonstration). A paper has therefore been submitted to the 14th Ka and Broadband Conference

The abstract “Hybrid satellite-WiMAX solutions for emergencies and broadband access” has now been accepted and a paper is under preparation

Satellite for emergency : SHARPS working group of the PSC forum

The involvement of Astrium in the project WISECOM has been valorised in the preparation of a specific paper on the use of Satellite for Emergency applications. The paper titled “On the role of satellite communication for emergency situation in Europe” has been prepared and first discussed within several groups involved in the security:

- The standardisation group on satellite emergency communication SatEC belonging to ETSI,
- the network of excellence SatNex, funded by the Frame Programme FP6 of the EC,
- the EU Respond organisation.

Initially prepared as a white paper, the paper is now on the edge to be published.

TIEMS : The International Emergency Management Society

A paper has been prepared and proposed, but unfortunately not selected for the annual TIEMS event in 2008 in Prague. The paper, titled “Hybrid Satellite-Terrestrial

based solutions for rapid deployment of wireless telecommunication networks in Emergency Situations” deals with the different association of terrestrial and satellite technology to ensure the Public Safety mission. The paper will be resubmitted for the next TIEMS conference in 2009. It will be updated in order to include the results of the demonstration and to communicate on the achievement of the project in the domain of satellite-terrestrial hybrid communication

4.4.2.2 Other Presentations

IST event : (Nov 2006 - Helsinki)

During the first IST event, a group of persons involved in the Public Safety domain met together and launched the PSC forum. Initiated by the EC project NARTUS, the inputs from other projects were provided during this first networking meeting. The meeting has enabled to involve actors in the field of Public Safety above the Nartus project partners, in order to prepare the first PSC forum. Astrium was present (Ph. Boutry) to this first networking session

WISECOM and BRASIL workshop (July 2007)

Astrium participated as speaker to the WISECOM and BRASIL workshop held 5th of July 07

ISI forum (Erlangen 24-25 oct 2007) and (Athens 26-27 May 2008)

During the General Assembly in Erlangen, Astrium has supported DLR on the endorsement of WISECOM by ISI. Moreover, thanks to the participation of several members of the WISECOM project (Laurent Thomasson is member of the steering committee of ISI for instance), Astrium ensure that WISECOM project outcome and achievements are disseminated to the ISI members, and will be used to prepare the main initiatives of ISI

PSC Forum

Astrium was deeply involved from the beginning in the Public Safety Communication (PSC) forum. Several actions and contributions to the PSC forum have given the opportunity to communicate on the objectives and on the achievements of the WISECOM project.

Astrium is an active member of the SHARPS (Satellite and HAPs for emergency and Public Safety communications) working group of the PSC forum. The main objectives of the SHARPS working can be summarized as follows :

- Independent analysis of technical solutions for satellite and HAPs communications in emergency and public safety;
- clarify relation between commercial use and public-safety use of satellite capacity (and eventually also military capacity, incl. secure link);
- address the problem of reducing costs of satellite communications for emergency (evaluate technical possibilities).

During the last PSC forum (Ljubljana – May 08), A discussion on Tampere convention has been held, introduced by a presentation from Astrium (Ph. Boutry). The point has been added to the PSC forum were coming from action taken during the First WISECOM review

A white paper has been prepared (see previous section on paper and conference)

4.4.2.3 *Special Focus*

Internal EADS WiMAX forum (12 and 13th December 2007)

Astrium has co-organised a specific WiMAX forum on the following thematic

- Exchange technical data / progress status on WiMAX topic
- Share issues and questions
- Identify areas for deeper exchanges / further cooperation

WISECOM has been addressed as an example for a hybrid configuration gathering WiMAX and satellite network to achieve enhanced global performance (combining the advantage of satellite ubiquitous coverage and performance of a dedicated local network)

SatEC

Astrium is a member of ETSI SatEC working group. Since the first meeting (7th of November 2006), the group has met several time. A first work item has been agreed by ETSI and end in March this year by the issuing of a Technical Report “**Overview of present satellite emergency communications resources**” now approved by ETSI

The SatEC group has identified several work items (TR and TS: Technical Report and Technical Specifications) as a continuation of its work. For what concern WISECOM, a work item is under approval on deployable systems for security application. This work item is dealing with “Easily Deployable Emergency Communications Cell” and WISECOM configuration should be considered as a guideline during the work item. Astrium is participating with other WISECOM partners (TAS, DLR, ...) to this work item.

4.4.2.4 *Link wit Other Projects*

TANGO (FP6)

A short presentation of WISECOM objectives and status to TANGO project partners has been performed by Astrium during TANGO Kick off. The EC project officer (C. Bernot) and ESA reviewers were also present at the Kick-off meeting (8th and 9th of November 06).

SATMAC (FP6)

Overview of WISECOM has been provided to the FP6 SATMAC Specific Support Action (“Satellite Communication Market Assessment and Cost Benefit”) and integrated by the Satmac Coordinator in a public deliverable addressing Market Characterisation and satellite communication application and services from now to 2030 (done mid-November 2007)

NETADDED (FP6)

Presentation of WISECOM objectives and status to NETADDED project partners has been done during the kick off meeting

4.5 Reach-U

4.5.1 Objectives and Targets

Reach-U objectives concerning project dissemination and exploitation have been:

1. General (paper and conference) presentation of both scientific and development/prototyping work.
2. Engaging in PR activities and informing contacts about the developed prototype, to explore potential market segments.

4.5.2 Specific Actions

4.5.2.1 Papers

The LBS system architecture developed by RUL was described in detail in the paper that was accepted and presented at WRECOM 2007.

- E. Fazli, D. Tassetto, H. Tork, J. Laineste, M. Werner, "Location Based Services (LBS) and Localization Techniques for Satellite Based Emergency Communications", Wireless Rural and Emergency Communications Conference (WRECOM 2007), Rome, Italy, 1-2 October 2007.

Presentation: E. Fazli (TGS)

4.5.2.2 Organized Events

None

4.5.2.3 Special Focus

None

4.5.2.4 National Focus

During the development and integration phase of the project, but also after the final demonstration, Reach-U has presented the progress and results of the project to the Estonian Rescue Board, which is the national body that is most concerned with the Wisecom target application. The Estonian Rescue Board falls under the Estonian Ministry of the Interior. Any international activities involving emergency situations will be coordinated by this Board. A strong interest was shown and Reach-U has agreed to keep the Rescue Board informed of any and all further progress in this important area of activity.

4.6 Steinbeis

4.6.1 Objectives and Targets

The major objective of SFZ in the WISECOM project was to cover the complete medical part of disaster management. Due to the air rescue background (European Aero Medical Institute e.V.), SFZ does have direct excess to a worldwide network of internationally recognized rescue organizations.

SFZ acted as a mediator to collect project relevant information from the worldwide rescue organizations and to disseminate them back to the project partners. In return, SFZ kept the rescue organizations updated on the project progress, and interviewed

the rescue organizations on further needs or requests that should be considered in the development of the final WISECOM product.

As pure medical service and consultancy provider in the project, the major focus of SFZ was to show the advantage of the easy to use on the field system and to medically explain the benefits of a faster localization and treatment of patients. WISECOM was used in many conversations and presentations as an excellent example to create a telemedicine application from the view and in consideration of the rescue staff that ultimately will use the application.

4.6.2 Specific Actions

4.6.2.1 Papers

SFZ is in the progress of publishing a medical paper on WISECOM.. As the peer-review journal needs a clear study that shows the effectiveness of a new “treatment” or a new application. Therefore the paper could not be published before the final demonstration and the completion of the study. The target is to publish the paper in one of the leading telemedicine journals with a mass circulation and a worldwide print run.

4.6.2.2 Attended Events

ITIC

15th ITIC International Travel Insurance Conference

November 5th – 9th 2007

Venice / Italy

Introduction of WISECOM and the respective features in regards of natural disaster such as the Tsunami / Thailand 2004

PSC EUROPE Forum

1st annual PSC Europe Forum Public Safety Communication Europe

May 21st – 22nd 2007

Luxembourg

Introduction of WISECOM

IST Summit 2007

IST mobile and wireless communication summit

BRASIL – WISECOM Workshop

July 1st – 2nd 2007

Budapest / Hungary

ARINC, USA

Communication, engineering, and integration specialist for satellite communication

Meeting to discuss and evaluate telemedical solutions and possibilities.



Introduction of WISECOM and clarification of marketing and sales opportunities for WISECOM in the USA and the rest of the world incl. Europe

March 10th – 13th 2008

USA

Heartsine Technologies

Marketing strategies for WISECOM and introduction to the WISECOM features

Evaluation of possible Sales and Marketing opportunities and strategies.

May 2008

Welch Allyn

Discussions about possible help for the WISECOM demonstrations

Information on their Mobile Acuity

2007 / 2008

American Heart Association

ITO meeting / conference

Introduction of WISECOM and the impact to medical disaster management

Influence of WISECOM to rescue forces and emergency physicians

November 2007

UN

Conference on telemedical opportunities and changes

Introduction to WISECOM and the impact on disaster management

Brussels / Belgium

September 2007

Saudi Red Crescent Society

Development of HEMS Stations and the development of rescue forces in Saudi Arabia

Introduction to WISECOM and explanation by means of a possible disaster during the "Hatch"

In the presents of the Royal Family, Prince Faisal

July 2007

Münchner Sicherheitsgipfel

Bavarian Security Conference / Bavarian Government



Introduction to WISECOM and the impact on the disaster management
Munich / Germany
February 8th 2008

EURAMI

European Aero-Medical Institute e.V.
Introduction of WISECOM to world wide members
March 2007

Air Med 2008

World Congress Air Med
May 20th – 23rd 2008
Prague / Czech Republic
Introduction of WISECOM

White Cross Italy

German – Italian Emergency rescue organizations conference
May 25th – 26th 2008
Bolzano / Italy
Influence of WISECOM to rescue forces and emergency physicians

Feuerwehrleitstelle Stuttgart

Clarification and discussion of possible acceptance of WISECOM
Introduction of the system and its performance
February 22nd 2008
Stuttgart / Germany

Rettungsleitstelle München

Introduction to WISECOM

Information on the planned trial in Oberpfaffenhofen and their involvement
March 21st 2008
Munich / Germany
Ärzteforum

German Emergency Physician Congress

September 13th – 14th 2007

Frankfurt / Germany

Introduction of WISECOM

4.6.2.3 *Special Focus*

Generally there is a shift in telemedicine applications from a hardware oriented focus to a service oriented focus. A lot of telemedical applications can nowadays be operated via everyday and commercially available mobile phones or other also commercially available telecommunication methods and applications. SFZ has therefore disseminated information about WISECOM to the security medical departments of globally acting corporations, as well as to the travel industry. A proactive risk management should always include an improved telecommunication which is usually done by a satellite in remote areas. This fact has been accepted by globally acting corporations and travel organizations in the past few years, especially since incidents such as the Tsunami 2004 has opened the eyes off the decision makers.

Major companies and companies from the travel industry that have been involved in this process where MARSH Etna Health Insurance, ARINC Satellite Corporation, Alliance Insurance, Munich Reinsurance, Siemens AG, Bosch AG, Daimler AG, Evonik (formally known as DEGUSSA), etc.

Global corporations, as well as the travel industry can put pressure on countries in need of an adequate risk management including hardware and services similar to the WISECOM project. SFZ has a lot of representatives in this field and has invested a respectively amount of effort and time to make them know that adequate systems will be available forthcoming..

4.6.2.4 *National Focus*

The medical directors of the major rescue services within Germany are well-known to SFZ and its director Dr. Michael Weinlich. From an early stage on these physicians have been included into the information distribution about the project and the relevant progresses, and had access to the public part of the WISECOM homepage. Some of the applications of WISECOM are very interesting for the local use in Germany and will be certainly tried and tested by the local rescue forces in the near future, once the WISECOM application is available.

4.6.2.5 *Web Based Activities*

The WISECOM project was published on the SFZ homepage as well as on the following homepages:

- www.medconteam.com
- www.eurami.org.

As these internet domains were also distributed by the health care magazine portal (Healthcare International Magazine or ITIJ), an adequate web dissemination for potential clients is therefore provided.

4.6.3 **Exploitation**

As SFZ is a scientific entity, it is closely working together with other companies that have the potential of providing services in the telemedical field on a worldwide base. One of these companies is med con team, which provides international services for

travelers and expatriates of companies and large insurances. Even though it is a service delivering company, its advice on hardware is often requested. Several members of SFZ are now employed in med con team. It will be able to use adequate parts of the projects for a future use.

4.6.4 Results and Conclusions

The WISECOM project was essential for SFZ to understand the technical possibilities and limitations in telemedicine field. SFZ is now able to provide adequate advice to international acting organizations and companies on how to best use telemedical applications under extreme conditions. This special knowledge will be essential in the future to improve services in the telecommunication field and to consult companies on how to develop adequate hardware for the rescue forces.

4.6.4.1 Including follow-up activities

As SFZ is more focusing on the consultation for adequate telemedical services, there will be a high possibility to interact with companies that might be interested in the WISECOM application, or at least in parts of the WISECOM application. To achieve a possible marketing strategy for the WISECOM application, a business plan has to be developed after the project has been completed.

4.7 Thales Alenia Space

4.7.1 Objectives and Targets

Though no specific budget was allocated to TAS regarding dissemination activities, TAS has however tried to contribute as best as possible these activities in the frame of the WISECOM project. The dissemination has essentially consisted in cross-fertilization in relation with the ETSI SatEC working group (of which TAS is chairman).

The WISECOM project is fully in line with Thales Alenia Space's strategy aiming at providing interoperable and deployable telecom solution for user communities working in the CMO (Crisis Management Operations) domain.

4.7.2 Specific Actions

4.7.2.1 Organized Events

WISECOM and BRASIL workshop (July 2007)

Thales Alenia Space has participated as speaker to the WISECOM and BRASIL workshop hold 5th of July 07 (JL. Fondère).

4.7.2.2 Special Focus

SatEC

TAS is chairing the ETSI SatEC working group. Three WISECOM members participate actively to the working group : TAS, Astrium and DLR.

The production of a deliverable which could value WISECOM work is under discussion : it is about an "Easily Deployable Emergency Communications Cell" (working name), a concept which has been validated by WISECOM project. It intends to specify an equipment transportable on disaster areas which could enable one to

deploy quickly a wireless local loop based on various technology and to connect it to backbones by means of a satellite link. This deliverable is under the responsibility of DLR.

An official presentation of WISECOM was made at SatEC meeting 5.

4.7.2.3 Link with other projects

LIMES (FP6)

TAS is in touch with the leader of the vertical cluster “Humanitarian Relief” and keeps him informed of the outcome of WISECOM, more specifically in the DVB-RCS domain.

MTA (ESA)

TAS is in touch with the prime contractor of the ESA study MTA (Multinational Telecom Adaptor) and keeps him informed of the outcome of WISECOM, more specifically in the DVB-RCS domain.

4.7.3 Exploitation

TAS exploited WISECOM to enhance an own product called Emergesat, a rapidly deployable container implement DVB-RCS satcom backhauling to relay WLAN (Wifi, VHF, GSM).

WISECOM has enabled TAS to better assess user needs related to emergency response during the first phase of a disaster. TAS also intends to use expertise and results of activities on WiFi and GSM backhauling activities to extend its product portfolio of satcom backhauling solutions for PPDR (Public Protection and Disaster Relief), in particular regarding fly-case portable solutions.

4.7.4 Results and Conclusions

The DVB-RCS WAT prototype is an important outcome of the project. This prototype can now be improved and in follow-on work to achieve a valuable piece of pre-commercial demo equipment.

4.7.4.1 Including follow-up activities

TAS will seek to exploit the outcome of WISECOM (both technical and related to users needs) into potential future projects, and use it to feed the roadmaps of internal product lines of the company.

5 Summary and Conclusions of Disseminations

5.1 Dissemination Conclusion

The WISECOM project has demonstrated an attractive solution and significant results, and the sum of the dissemination activities clearly show the success and the impact of the project.

We have seen a broad range of dissemination activities covering large parts of the world, both in major satellite events, in major emergency events and in several key focused areas.

As a conclusion of the efforts listed and described in this report we conclude that both the project and the dissemination activities are successful.

5.2 Dissemination Table Summary

This section lists the papers that have been presented and the audience as the result. The following table summarizes the listed activities.

Month / Year	Description	Type of audience	Countries addressed	Size of audience	Partner resp. / involved
October-06	Participation to ITIC conference in Prague	medical	Europe	Medium	SFZ
November-06	UN/OCHA presentation	focused	UN	Ca. 10	ANS
November-06	WISECOM presentation to TANGO project officer and ESA reviewer	technical	Europe	Ca. 40 people	ASTR
November-06	Presentation to SATMAC Specific Support Action	technical	Europe	Small	ASTR
November-06	First project flyer	heterog.	Europe	Medium	DLR
November-06	Project website	heterog.	Intern.	Broad	DLR
November-06	Participation to the IST Event, meeting with PSC Forum	technical	Intern.	Broad	DLR, ASTR
November-06	1st meeting of ETSI SES/SatEC working group	ETSI members	Europe	Small	TAS, ASTR
December-06	Presentation to ESA delegation visiting Estonia	technical	Europe	Small	RUL
December-06	Presentation to Estonian Rescue Board	political	EST	Small	RUL
January-07	<u>Participation to an issue of the Healthcare International magazine (www.health-int.com)</u>	medical	Intern.	Broad	SFZ, TGS
February-07	Further discussions with the Estonian Rescue Board	political	EST	Small	RUL
March-07	AnsuR application demo to UN / OCHA	technical	Intern.	Focused to UN	ANS



April-07	Abstract accepted to ICSSC 2007. ANS presented the paper, see [1]	technical	Intern.	Broad	ANS, DLR
May-07	[D1.2-1] submitted to the network of excellence SatNEx II (JA2120 focus topic 3)	technical	Intern.	Medium	DLR
May-07	creation of the satellite working group (SHARPS) in the framework of the PSCE Forum, 1st general assembly of the PSCE Forum, Luxemburg, May '07	heterog.	Europe	Medium	DLR
May-07	The SHARPS working group was mentioned in the May 2007 newsletter of the UN platform SPIDER	heterog.	Intern	Broad	DLR
May-07	PSC Forum: 1st Annual Assembly and workshops	all stakeholders	Europe	Broad	DLR, ASTR
June-07	Abstract submitted to TIEMS'07. Accepted. Final paper published in the conference proceedings, see [2]	heterog.	Europe	Medium	DLR
July-07	WISECOM workshop was held at the IST Mobile Summit 2007 (Budapest)	technical	Intern.	Broad	ANS, DLR, ASTR, TAS
July-07	paper accepted and presented at the 16th IST Mobile and Wireless Communications Summit 2007, Budapest, Hungary, see [3]	technical	Intern.	Broad	DLR, TGS
August-07	Paper accepted and presented at the Oshine 2007 conference, Vancouver, British Columbia, see [4]	technical	Intern.	Broad	DLR, TGS
September-07	German Emergency Physician Congress	Medical	Extern	Large	SFZ
September-07	UN Conference on telemedical opportunities and changes	Medical	Extern	Large	SFZ
September-07	Paper accepted and presented at WRECOM 2007 (Rome, Italy), see [5]	technical	Intern.	Broad	TGS, RUL
October-07	AnsuR presentation to Global Symposium	technical	extern	Focused UN	ANS

October-07	Meeting with ESA	ESA, and selected satcom companies	F, NL, I, UK, ESP, D	Ca. 10 people	DLR, ASTR
October-07	Workshop in Seoul, Korea	Technical	Extern	Large	TAS
November-07	American Heart Association ITO meeting / conference	Medical	Extern	Large	SFZ
February-08	Feuerwehrleitstelle Stuttgart	Medical	Extern	Small	SFZ
February-08	Münchner Sicherheitstgipfel	Medical	Extern	Small	SFZ
March-08	Rettungsleitstelle München	Medical	Extern	Small	SFZ
March-08	White Cross Italy	Medical	Extern	Small	SFZ
March-08	Air Med 2008	Medical	Extern	Small	SFZ
May-08	Presentation to NATO project deliverables will be regularly submitted to the ETSI SatEC working group	technical	Extern	Large	ASN
June-08		technical	Intern.	Medium	All
June-08	Presentation at CommunicAsia	Political and technical	Extern	Large	ANS
June-08	Presentation of the final results of the Wisecom demo activity to Estonian Rescue Board	political	Intern	Small	RUL
June-08	Continuously meetings and leading the ETSI SES SatEC	Technical	Extern	Small	TAS

5.3 Consortium Dissemination Summary

This section describes the dissemination activities carried out by the WISECOM partners; they are summarized then in the following.

In the framework of the ISI (Integral Satcom Initiative) technology platform, an informal working meeting was held at ESA together with other companies working in the field of security and satellite communications (4th of Oct. 2006). DLR and Astrium were invited, WISECOM was presented.

SFZ participated to the International Travel Insurance Conference (ITIC) 2006, held in Prague on 31 October – 3 November 2006, to contact end users and to start creating awareness of the project.

An abstract was jointly submitted by DLR, ANS and TGS to the 25th AIAA International Communications Satellite Systems Conference 2007, to be held in Seoul, South Korea, 10-13 April 2007. The paper was accepted and presented by ANS [1].

ASTR and TAS have attended the first meeting and later several of the SatEC working group at ETSI (first on 7th and 8th of November 2006); the working group

chairman is a member of the WISECOM project, Pierre Loyer (TAS). Several contributions have been provided by the WISECOM team to this ETSI group. All public deliverables of the WISECOM project will be officially submitted to the ETSI SatEC working group, and this decision was approved by the project officer.

A project flyer was developed, and it was distributed at several events, first during the IST Event 2006 in Helsinki, 22.

A project website was developed (www.wisecom-fp6.eu) and continuously maintained. DLR had the responsibility of the project website, so they kept it up-to-date with the latest news.

ASTR setup a link with other EC projects relevant for emergency services:

- Short presentation of WISECOM objectives and status to TANGO project partners, EC project officer (C. Bernot) and ESA reviewers during the Kick-off meeting (8th and 9th of November 06), TANGO is a project co-funded by EC under FP6 Aeronautics & Space priority, and dealing with telecommunication infrastructures for GMES;
- Overview of WISECOM provided to the FP6 SATMAC Specific Support Action ("Satellite Communication Market Assessment and Cost Benefit") and integrated by the SATMAC Coordinator in a public deliverable addressing market characterisation and satellite communication application and services from now to 2030 (done mid-November 2007).

AnsuR has met several times with the United Nations (UN) in New York and in Geneva. The group met was UNOSAT and OCHA – Office for Coordination of Humanitarian Affairs; one of the major groups and responsible for the emergency communications in the UN. The responsibility is divided between New York and Geneva, and there are also strong links to Peace Keeping missions around the world. The topic of Emergency Communications via satellite was discussed, specifically some of the elements that are also included in WISECOM, namely ASIGN and GSM and WiFi pico-cells. The UN has several partners who provide them with services; often free services. Such partners include Telenor Satellite Services (TSS), Ericsson Response and their main partners in telecoms, Telecom Sans Frontières (TSF, www.tsfi.org). The latter organization is perhaps essential for WISECOM to liaise with. A main message from the UN is that the concepts of WISECOM look very interesting. However new concepts need to be properly integrated with existing systems and needs to fit operational wise in the UN framework. There is the option for a continuing dialogue, and the UN would be prepared to contribute to e.g. an emergency communications conference.

DLR and ASTR participated to a networking session organized by the PSCE (Public Safety Communications Europe) Forum during the IST Event (Helsinki, November '06), and had a meeting with PSCE Forum organizers. During that event the WISECOM project was advertised, flyers were distributed; meeting with PSC Forum coordinator was held to organize upcoming collaboration.

DLR submitted an abstract for the 14th Annual Conference of the TIEMS (The International Emergency Management Society), entitled "Disaster Recovery and Relief: Current & Future Approaches", which was held in Trogir, Croatia, from June 5th to 8th 2007. Final paper for the conference 2007 was prepared by DLR [2].

Healthcare International magazine (www.healthcare-int.com) asked SFZ to participate in a telemedical roundtable for the next issue of the magazine. Together with Triagnosys, SFZ answered 13 questions on telemedicine in disaster situations.

RUL has performed the following dissemination activities:

- Description of WISECOM project and Reach-U participation in presentation to ESA delegation visiting Estonia (regarding Estonia's plan to become a member of ESA).
- In December 2006, held a meeting with the Estonian Rescue Board, to provide a thorough overview of the WISECOM project and objectives. A follow-up meeting was held in February 2007 to update the project progress. The deputy director of the Estonian Rescue Board was personally very interested and agreed to follow the project progress and provide feedback and inputs on real operational needs of Rescue Services. This feedback will realistically be provided after the end of the Wisecom project.

AnsuR and DLR have prepared and organized a European workshop on satellite-based emergency communications, during the IST Summit 2007. A proposal to hold a WISECOM workshop at the IST Summit 2007 was submitted to the conference organizing committee; the event was co-organized with the FP6 project BRASIL (title of the workshop: "Broadband Satellite Systems for Rural and Emergency Communications"), for more information see http://www.wisecom-fp6.eu/news_events.php. ASTR, TAS and DLR have appointed speakers for presentations arranged during this workshop.

A WISECOM paper on the system architecture and the business role model was accepted at the 16th IST Mobile and Wireless Communications Summit 2007, Budapest, Hungary, 1-5 July 2007. The paper was presented by DLR [3].

A general WISECOM paper on the integration of satellite and terrestrial networks was accepted at the International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness (Qshine 2007), Vancouver, British Columbia, 14-17 August 2007. The paper was presented by DLR [4].

A new IEEE conference was identified for dissemination activities: the First IEEE Conference on Wireless Rural and Emergency Communications (WRECOM 2007), which was held in Rome, Italy, from September 30th to October 2nd, 2007. A technically sound paper about LBS was submitted jointly by TGS and RUL [5]. This paper was accepted for the conference and presented by TGS.

WISECOM Deliverable [D1.2-1] was submitted by DLR to the Network of Excellence SatNEx II (JA2120 focus topic 3, which is dealing with PPDR, Public Protection and Disaster Relief). The terminology which was defined in WISECOM is adopted by the SatNEx community, too.

DLR has performed an important activity in the PSCE Forum. The activity of the PSCE Forum was advertised, a document was prepared to describe the objectives of having a satellite working group in the PSCE Forum, and in particular the creation of the satellite working group was announced by means of newsletter to different groups of the European and international satellite community: the IEEE Satellite and Space Communication Technical Committee (SSC TC) of the Communication Society; the Integral Satcom Initiative (ISI) (the European Technology Platform for Satellites); the Satellite Network of Excellence (SatNEx). Matteo Berioli was asked to chair this satellite working group inside the PSCE Forum; the exact group name is Satellite and Haps for emergency and Public Safety communications (SHARPS). DLR has toughly worked on the preparation of the SHARPS workshop, held in the framework of the 1st general assembly of the PSCE Forum, which was held in Luxembourg on the 21st and 22nd May '07. ASTR has appointed a permanent contact point who is part of this working group (Philippe Boutry); Mr. Boutry gave a

presentation during the 1st SHARPS workshop (held in conjunction with the 1st PSCE Forum general assembly) on topics addressed through WISECOM. P. Boutry is actively supporting M. Beriola and F. Zeppenfeldt from ESA (who is also member of this working group) to reach a proper momentum and make the SHARPS working group alive and define complementarity with SatEC (ETSI) and EU Respond. Thanks in particular to the PSCE Forum, DLR had the possibility to be in touch with people from other European projects working on similar topics.

The satellite working group of the PSCE Forum (SHARPS) was mentioned in the May 2007 newsletter of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER), see http://www.unoosa.org/pdf/unspider/UNSPIDERUp_05_07E.pdf.

TAS is chairing the ETSI SatEC working group. Three WISECOM members participate actively to the working group : TAS, Astrium and DLR

Several WISECOM papers were presented by TGS, including during VTC08 in Singapore and ICSSC in San Diego.

AnsuR was invited to the Emergency Communications session during CommunicAsia 2008 and presented WISECOM and ASIGN along with United Nations and SingTel.

DLR took the responsibility for the overall organization of the final WISECOM demonstration.

The consortium is also planning for a special issue in an international journal about "Satellite and Emergency Communications" as a follow up.