EUROPEAN HARMONIZATION IN PUBLIC SAFETY COMMUNICATION AND INFORMATION SYSTEMS - THE NARTUS PROJECT

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Abstract

The NARTUS project is focused on creating a European platform and roadmap for future public safety communication and will help to facilitate European integration in the area of Public Safety with particular focus on public safety communications and information systems.

The tools used by NARTUS for creating such platform and roadmap, have been identified in Forum Conferences. Through Forum Conferences NARTUS will launch consultations and build consensus organizing, developing and following up discussions between operational and technological stakeholders involved in Public Safety Communication and Information systems.

The diversity of technologies used by different European member states and user groups creates serious interoperability problems at different levels, starting from the level of equipment and going to the level of applications and user/system requirements. The interoperability problem dramatically reduces the efficiency of emergency response, especially in complex situations and /or requiring coordinated international efforts.

The increasing costs of new technologies and limited state budgets require careful evaluation of new systems at the tendering phase of new contracts' negotiations. At the same time the small size of the public safety market makes it more difficult for manufactures and service providers to reduce their level of costs.

The only solution to this multidimensional problem is to internationally harmonize requirements, systems and applications. Harmonization will be a complex process that requires the involvement of different key players at the international level and could continue for long periods of time. The key element of harmonization will be the creation of an internationally accepted roadmap that will facilitate discussions between major stakeholders and will provide a vision and key milestones for this work.

With the main goal of continuously improving the harmonization of technologies, the NARTUS project will establish links and regular discussions between Public Safety (PS) communications systems users, policy makers, industry, research organizations and standardization bodies.

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Background

The main objective of the project is to create a pan European (including non European Union nations) consultative network for public safety users, applications and system providers and operators that utilizes vehicles such as conferences, meetings, electronic media etc to create a discussion platform that will facilitate European convergence in the area of public safety communications and information management systems.

The need for such a convergence stems from a series of obstacles that hinders communication and the exchange of update to date and accurate data in emergency settings, thus jeopardizing the effectiveness of public safety operations. Currently there are a large number of diverse technology systems that either cannot inter operate, or, if they can, the interoperability is very limited in scope. In the interests of effective and consistent levels of service delivery across Europe, the communication within authorities, from authorities to citizens and from citizens to authorities needs to be internationally harmonized.

Among the obstacles presently hindering the building of an internationally integrated system are, for example multi languages and the difficulty of localization of emergency calls. Also, the networks enabling the communication between the authorities and from authorities to the citizens are difficult to implement as harmonized systems due to different structures, cultures and policies of the various authorities.

The diversity of technologies used by different European member states and user groups creates serious interoperability problems at different levels, starting from the level of equipment and going to the level of applications and user/system requirements. The interoperability problem dramatically reduces the efficiency of emergency response, especially in complex situations and /or in situations requiring coordinated international efforts.

The increasing costs of new technologies and limited state budgets require careful evaluation of new systems at the tendering phase of new contracts' negotiations. As a result a large number of diverse systems are used, but they cannot talk with each other efficiently. At the same time the small size of the public safety market makes it more difficult for manufactures and service providers to reduce their level of costs. The communication between authorities, from authorities to citizens and from citizens to authorities needs to be internationally harmonized.
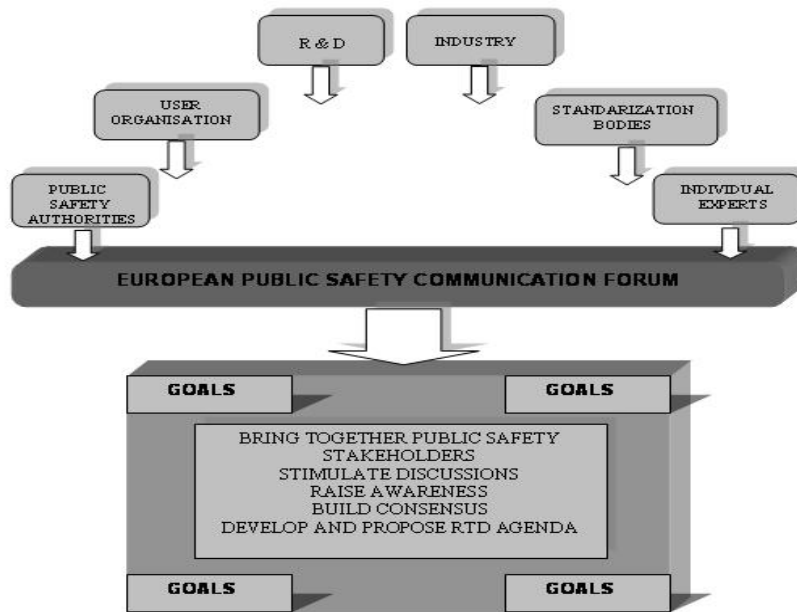
The only solution to this multidimensional problem is to internationally harmonize user requirements, systems and applications.

Harmonization will be a complex process that requires the involvement of different key players at the international level and could continue for long periods of time. The key element of convergence will be the creation of an internationally accepted roadmap that will contain a vision of future requirements, identify areas for further research, identify methods and technologies that will integrate legacy systems and identify emerging technologies that could be used in civil protection/public safety service delivery and that can be used to influence policy makers, regulators and standardization making bodies.

This is where NARTUS comes into play: NARTUS will establish and drive a European Public Safety Communication Forum that will produce a roadmap based on international consensus and convergence and which will be focused achieving future interoperability based on the harmonization of user requirements

Figure 1: Main project contributors and results

European Public Safety Stakeholders Forum

NARTUS convergence efforts will be pursued through the establishment of a European Public Safety Stakeholders Forum. Within such a process, a series of activities will provide educational and interactive media to enable the development of an internationally harmonized roadmap.

The European Public Safety Stakeholders Forum will be the central vehicle for launching a dialogue and building consensus, through a cycle of 5 conferences in the three years project period, discussions, workshops, electronic forum etc, which will bring together all Public Safety stakeholders.

The Conferences will be the showcases for the Project and will be the main platform for the final dissemination of the outcomes and deliverables from the Project. They will be a means to educate all public safety stakeholders, including political, authority, users, industry (including manufacturers and service providers), regulators and standardization making organizations. This platform will also help to validate, update and consolidate existing public safety user requirements, discuss a structure for security communication, and study system solutions. It will promote and facilitate the exchange of best practice, information, ideas, and experiences.

NARTUS Forum activities will represent the exchange platform for public safety political, technological and user stakeholders that will:

- Help to consolidate and validate existing common public safety user requirements
- Discuss a structure for security communication, and study system solutions
- Promote and facilitate the exchange of information, ideas, and experiences
- Provide advice and inputs to policy makers, regulators and standardization making bodies

The public safety user requirements to be established in the project will integrate user input from previous studies and relevant projects, both existing and in the future, and will help to

produce a consolidated high level Public Safety User Functional Specification for communications and information management systems for the future.

The European Public Safety Stakholders Forum will represent member states' interests at the European and international levels and provide coordinated European input and advices on matters related to public safety communications and information systems issues.

Input To European Standardization Activities

Standardization aspects will be addressed in the project with particular focus on communication with standardization making and regulatory bodies to influence the development of international standards.

The project will establish links with ETSI[3], ITU[4], OMG[5] and other relevant standardization organizations that have interests in the areas relevant to public safety communications and information management systems. It will facilitate the flow of information between relevant IST research projects and industrial organizations in order to contribute to standardization and to influence international standardization development activities. The particular focus will be on projects EMTEL[6], MESA[7] and OASIS[8]. The input into standardization organizations will facilitate the convergence efforts and help to shape the future market in this area.

Political Harmonization And Consensus Building

The vital part of the harmonization process is the participation and consensus building at the level of national authorities. Public safety communications and information management and communication systems have always been considered as an important part of the domain of national security, where the idea of establishing an international cooperation has been treated with a large degree of skepticism. The NARTUS project will facilitate the dialog between European national public safety agencies to achieve consensus on common user requirements and technologies in public safety communication and information management systems. These discussions could help to develop international legislation and standards required for introduction of European harmonized public safety communication and information systems management and emergency response protocols and provide more cost effective solutions.

Dissemination Activities

Making information available and accessible is a contribution to the consensus building process. Main focus will be given to the form in which information will be provided as well as to the tools to put at disposal. Main targets will be stakeholders, which will be consulted during the Forum process.

A communication and dissemination plan will be adopted, laying down the policy on which and how documents will be sent and to whom. Activities to disseminate the project inputs and outputs of the Forum will include the five conferences, electronic forums linked to the project

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[3] ETSI: European Telecommunications Standards Institute

[4] ITU: International Telecommunication Union

[5] OMG: Object Management Group

[6] EMTEL: Special Committee (SC) on Emergency Communications

[7] MESA: is an international partnership project initially created by ETSI and (Telecommunication Industry Association) TIA who have agreed to co-operate for the production of mobile broadband specifications for Public Safety aimed at the Public Safety markets.

[8] OASIS: On-line access to services and support from the Irish Government

website, the editing and issuing of a project leaflet, of regular news and of a newsletter to be posted on the website as well as all other documents of interest (conference reports, results of studies but also list of meetings reflecting the project progress).

NARTUS will enable the fluent communication between the users (citizens/authorities), regulatory bodies and industry and allow this exchange to be continuously available to the system developers and standardization bodies.

Decision-makers will be the final target. Dissemination will need to address them with clear messages outgoing from the work carried out by the experts. Media support will be a useful further support to spread out the projects results. To this end, specific media events might be organized together with the first conference to launch the project and at the end of the project.

Integration Of Emergency Telecommunication Systems

The project will facilitate the integration of different technologies in the area of public safety by supporting regular discussions between stakeholders and technology providers and by providing relevant inputs to standardisation organisations, regulators and other research projects. The political harmonisation in the project will provide a platform for harmonisation and integration of different technologies and data structures.

Public Safety Technologies Assessment And Road Mapping

Technology assessment and road mapping of public safety technology will be another key objective of the project. The introduction of new (and the optimizations of existing) public safety Communications and Information management systems is a very costly and complex process. The increasing complexity level of public safety communication and information management systems technology will require large investments. Those investments will be mainly supported by the budgets of European states and have to be carefully evaluated and justified.

This work will facilitate the development of the open architecture required for public safety information and communication systems thereby enabling the provision of better value for money systems.

Roadmap For Future Public Safety Communication

The support action will help to establish an internationally harmonized road map in Public Safety Communications and Information Management Systems. It will help to facilitate European integration in the area of Public Safety with particular focus on public safety communications and information management systems.

The roadmap will define the key technology focus areas where the efforts in R&D, industrial organizations, standardization organizations and business units have to be brought together. The key milestones and links between key players will be defined. The road map will help to define the new market areas, and these will be brought to the attention of industrial players.

Development Of Strategic Research Agenda For IST FP7[9]

Another goal of the project will be the identification of research and development challenges and objectives for the next 3-/5-/10- years. The project will define the vision and the strategic research agenda for the technology platform for the future IST FP7 research program. The

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[9] IST FP7: Information Society Technologies, Framework Program 7

potential of the market in public safety communication and information systems will be evaluated. The project will explore the needs and gaps in public safety with respect to state-of-the-art and will identify actors for all relevant stages and determine the critical mass. The European competitive position and potential will be assessed in NARTUS.

Cooperation With IST Projects

It is an objective of NARTUS to facilitate the exchange of ideas and information between industrial and research organizations in the areas of technology, user requirements and standardization. The NARTUS project will identify and establish links with relevant IST research projects and will help to define the structure and scope of the IST and industrial projects that will be established in the future.

The NARTUS project will establish a regular exchange of information links with other IST projects such as CHORIST[10], u2010[11] and others.

Market Study

The market study and business models developed in the project will identify the relevant market areas and provide business models for the industrial organizations and SME's (Small and Medium sized Enterprises) interested in this area. The public safety communication and information management systems market is much smaller compared to the consumer market of public communication systems and requires careful evaluation to attract industrial investment.

Project Organization And Funding

The NARTUS project is a SSA (Special Support Action) under the sixth EU framework program within ICT for Environmental Risk Management. The project is fully financed by the EU Commission.

The following partners form the NARTUS Project Consortium is shown in the following table:

Role	Participant name	Participant short name	Country
Coordinator	Helsinki University of Technology	HUT	Finland
WP 1 leader	British Association of Public Safety Communications Officers	BAPCO	UK
WP 2 leader	Thales	Thales	France
Participant	EADS Secured Networks SAS	EADS	France
WP 3 leader	The International Emergency management Society	TIEMS	Internat.

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[10] CHORIST: IST Project - Integrating Communications for enhanced environmental risk management and citizens safety
[11] u2010: IST Project - Ubiquitous IP-centric Government & Enterprise Next Generation Networks Vision 2010

WP 4 leader	SQUARIS Consultants	SQUARIS	Belgium
Participant	National Technical University of Athens	NTUA	Greece
Participant	Martel	Martel	Switzerland
Participant	Universidad Politécnica, Madrid	UPM	Spain

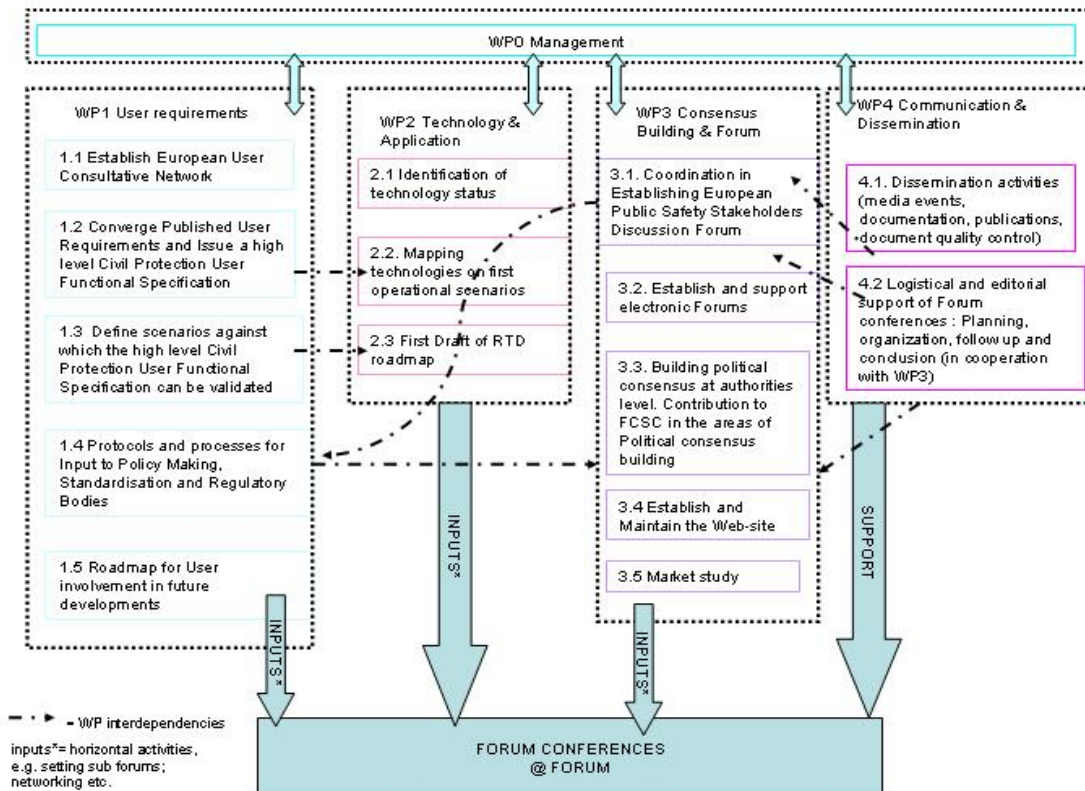The interrelation between the work packages and their content is shown in Fig 2.

Fig 2: The different work packages and their interrelation and content

NARTUS Project Time Schedule

The project will start 1st of June 2006, and will last three years. The first European Public Safety Stakeholders Forum is planned to take place in Helsinki, Finland, when the Finnish Government take over the chairmanship in EU late November 2006.

Conclusions

The NARTUS project is a EU Commission initiative aiming at harmonization and a common platform for public safety communication in Europe, with further global implications.

The key element of harmonization will be the creation of an internationally accepted roadmap that will facilitate discussions between major stakeholders and will provide a vision and key milestones for this work.

With the main goal of continuously improving the harmonization of technologies, the NARTUS project will establish links and regular discussions between Public Safety communications systems users, policy makers, industry, research organizations and standardization bodies, which is intended to continue after the project's lifetime.

References

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Bibliography

Adrian Boukalov received his M.S degree in radio engineering from Leningrad Electrotechnical institute (LETI) Radio System department, St. Petersburg, Russia, in 1984. Next 5 years he spent in industry being involved in several R&D projects. Later he has been a managing director of private company that has been active in the area of software development and communications. Since 1998 he has been with Communications Laboratory of HUT. His research interests include system aspects of smart antennas, resource allocation, network planning and simulation. He is responsible for the research activity of a small group of engineers and students working in this area. In 2000-2001 he had been a principal investigator of the international co-operation project between HUT and Stanford University (USA) and had been a visiting scientist with at Smart Antennas Research Group (SARG) at Stanford University. In 2002 Adrian became an elected chairman of the Technical Specification Group System (TSG SYS) of the transatlantic project MESA (www.projectmesa.org). His management responsibilities in MESA include the co-ordination of MESA work on system concept and technology development, co-ordination of different international research initiatives related to MESA. Adrian is the WP manager in WIDENS (www.widens.org) and CELTIC project DeHiGate. Since 2005 is Vice Chairman of OCG EMTEL /ETSI.

K. Harald Drager received his M.Sc., in Electrical Engineering/Control System Engineering from the Norwegian,Technical University in 1966, and his M.Sc. in Industrial Engineering from Purdue University (USA) in 1973.

He is the President of TIEMS, Chairman and Managing Director of QUASAR Invest AS and Chairman and Managing Directorof A/S QUASAR Consultants

He is specialized in International Business Development, Strategic and Tactic Analysis and Implementation, Emergency and Risk Management, Hazard Communications and Project Management. He is founder and currently President of the International Emergency Management Society (TIEMS) since 2002 and has been a consultant to NATO, World Bank/IFC, Safetec and a board member of Det Norske Veritas (DNV). He has been involved in numerous national and international projects, e.g. EUREKA Project MEMbrain (1993-1995), British/Norwegian R & D Collaboration Project (1995), French – Norwegian Research Project (1990 – 1993), SIRTAKI (EU), and MEPDesign (EU). He has published 81 papers in international publications.