COPRAS

Cooperation Platform for
Research & Standards

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Contents

1.   Introduction

The Cooperation Platform for Research and Standards (COPRAS) is an FP6 Specific Support Action (SSA) project addressing projects in calls 1 and 2. It addresses Thematic Priority Area number 2: 'Information Society Technologies' and aims to serve as a platform for IST research projects seeking to upgrade their results through interfacing with standards bodies.

The project started 1st February 2004 and will run until 31st January 2007. It will bring together the research and standardization aspects of the eEurope activity and optimise the interface between FP6 IST projects and standardization. In doing so, it will speed up adoption of research results and generate feedback on their acceptance and usage.

For the purpose of identifying and selecting projects that may benefit from cooperating through the COPRAS platform and from developing 'Standardization Action Plans', several methodological steps have been defined and bundled together in Work Packages (WPs). The first set of these methodological steps established WP2 and encompassed the information gathering process, or the surveying of projects for standards related output. The second set establishes WP3 and covers the analysis of the information gathering report, the definition and application of project selection criteria, the organization of a 'kick off meeting' and the reverse mapping of standards bodies' main focus areas against IST projects standards related activities.

The focal point for the WP3 activities is the kick off meeting, that aims to conclude the activities in this Work Package as well as to jump-start the work in WP4. Thorough preparation of these meetings (e.g. through pre-meetings with projects or discussions with standardization working groups) was considered essential to generate the best possible results and to maximize the usefulness of the output for both selected research projects and standards bodies projects intended interfacing with.

This report encompasses the call 2 kick-off meeting's targeted objectives and methodology followed, as well as the subsequent steps that have been taken in order to organize the meeting. Finally, it lists the results achieved and conclusions drawn from this kick-off meeting, both at a generic as well as on a more detailed ('break-out cluster') level.

The report, together with the actual information gathered and analyzed during the process, aims to serve as a basis for further activity in COPRAS and establishes the starting point for the development of appropriate standardization paths for projects in call 2, starting end of June 2005.

2. Kick-off meeting targeted objectives

The main objective of the kick off meeting was to jump-start cooperation between (groups of) research projects and standardization working groups. The kick off meeting therefore focused on the following issues:

i)   defining communalities between standardization issues addressed by projects;
ii)   defining projects actual ' timing and resources;
iii) defining the actual nature of planned contributions (i.e. formal specifications, guidelines, other contributions, etc.);
iv)   defining relevant standardization working groups are actually planning to do in the areas identified;
v)   defining some high-level steps jump-starting the WP4 work (who is going to draft certain contributions, etc.);
vi)   identifying the right people within the research project consortia actually working on specific standards issues (e.g. to include them in mailing lists).

3. Kick-off meeting organization

The kick off meeting for call 2, that was held 16 June in Brussels, was organized as a combination of a general session, break-up sessions and again a plenary session. The agenda of the kick-off meeting is provided in Annex A of this report. Presentations from the plenary meeting can be found on the COPRAS web-site (www.copras.org).

The methodology followed when preparing and organizing the kick-off meeting as well as the steps that have been taken during this process are provided in the following sections.

3.1 Methodology and process steps

During its conference call on 27 May 2005, the project team agreed to organize the kick off meeting for call 2 in the same way as was done for for call1, i.e., as a combination of a general session, break-up sessions (into several different clusters) and again a plenary session at the end of the day to summarize the results and agree the next steps. Based on the experience from the kick-off meeting for call 1 the project team agreed to focus again on 4 to 5 larger clusters rather than aiming for a multitude of smaller ones, although overlap between projects standards related activities – at least in several Strategic Objectives – seemed to be less evident when compared to call 1.

In view of timing, it was decided to organize the kick-off meeting mid June, thus avoiding the holidays period as well as leaving the project team enough time for producing and approving the kick-off meeting's proceedings. It was therefore decided to organize the meeting for Thursday, 16 June 2005 at the CEN/CENELEC Meeting Centre, 35 rue de Stassart, 1050 Brussels.

Targeted groups for participating in the meeting, next to the COPRAS consortium partners, were representatives from the European Commission and selected tier 1 projects and tier 2 projects. Contrary to call 1, it was decided not to invite representatives from specific standardization working groups to the kick-off meeting. Reasons for this were the following:

i)   Experience in call 1 showed that there is insufficient time to also discuss ongoing standardization process in detail at the kick-off meeting;

ii)   For many selected call 2 projects the standards bodies to interface with appeared to be less evident, hence the kick-off meeting should first provide more clarification before (preferred) standardization working groups could be identified

iii)   For a considerable number of projects for which partners in the standards world were already reasonably clear, the COPRAS consortium partners represented the organizations projects were most likely to interface with.

3.1.1   Clustering of selected projects

The objective of this process was to define 4 to 5 clusters of projects that have a similar focus with respect to standardization, or touch upon more or less related standards issues, and to group them into parallel kick-off meeting break-out sessions. This clustering process focused on the standardization issues rather than on projects' overall thematic focus areas and therefore sometimes combined projects that were working in different Strategic Objectives. The following clusters and projects were identified for the kick-off meeting:

i)   **GRID-based systems:** combined in this cluster were all 12 GRID projects in Strategic Objective 2.3.2.8 as well as the ASG project from the 'Open development platforms for software and services' (2.3.2.3) Strategic Objective;

ii)   **Content, applications, communication & security:** this cluster encompassed the MOSQUITO project from the 'Applications for the mobile user and worker' (2.3.2.6) Strategic Objective, the EUROPCOM project from the 'Improving risk management' (2.3.2.9) Strategic Objective, and the IPerG, INCCOM & POLYMNIA projects from the 'Cross-media content for leisure and entertainment" (2.3.2.7) Strategic Objective;

iii)   **Embedded Systems:** in this cluster the selected projects, as well as the additional IP, STREP and NoE projects from the 'Embedded systems' (2.3.2.5) Strategic Objective projects were included; also included in this cluster was the SMMART project, which is not in FP6 but will expectedly touch upon standardization issues in the Embedded systems area;

iv)   **eInclusion:** this cluster encompassed the selected projects in the 'eInclusion' (2.3.2.10) Strategic Objective;

v) **Software, services & languages:** combined in this cluster were the SODIUM, SECSE, IN-FRAWEBS and AMIGO projects from the 'Open development platforms for software and services' (2.3.2.3) Strategic Objective, and the SNOW and wearIT@work projects from the 'Applications for the mobile user and worker' (2.3.2.6) Strategic Objective.

3.1.2   Pre-meetings with selected projects

Similar to the process in call 1, 'kick-off pre-meetings were arranged, with several projects in call 2, either to better prepare the kick-off meeting, or to obtain a better and more in-depth understanding of the standardization issues projects touch upon (and hence the standardization working groups they may benefit from interfacing with). Another reason for organizing these pre-meetings was the fact that some of the invited projects were not able to participate in the kick-off meeting itself on 16 June due to conflicts with other (project-internal) events.

The pre-meetings were organized during the first half of June 2005 at the premised of the project coordinators of the respective projects. An additional aim of the pre-meetings was to provide the projects, by means of a generic presentation, with more detailed information on the aspects of a Standards Action Plan and with more information on the benefits of cooperating with (or through) COPRAS.

3.1.3   Contacts with relevant standards bodies

As mentioned in section 3.1, for call 2 COPRAS decided not to invite representatives of the standardization bodies to the kick-off meeting, but to involve them in the process at a later point during the process of the development of Standards Action Plans. As soon as the standardization issues addressed by the selected projects are discussed and clarified during the kick-off meeting, the relevant standardization bodies and their respective working groups will be contacted in order to get them involved as soon as possible into the process of developing individual Standards Action Plans with the projects.

A second reason why contacting the relevant standardization working groups was postponed, specifically for call 2, is the fact that the 'Reverse mapping report' for call 2 (COPRAS deliverable 18) that will be available by the end of August 2005, may provide additional valuable information for defining the best possible ways to match research projects' activities with ongoing standardization activity.

3.2 Pre-meeting organization & results

Physical pre-meetings were set up with the POLYMNIA and IPerG projects because these indicated not to be able to participate in the kick-off meeting. Both these projects are from the 'Cross-media content for leisure and entertainment' Strategic Objective. The following section provides the information of pre-meeting organization & results with the two mentioned projects.

In Strategic Objective 2.3.2.7 (Cross-media content for leisure and entertainment), 3 projects were selected as 'tier 1' projects, while 1project was selected as a 'tier 2' project:

i)   IPerG (Integrated Project on Pervasive Gaming);
ii) POLYMNIA (PersOnalised Leisure and Entertainment over cross Media iNtellIgent PlAt-forms);
iii) INCCOM (Integrated cross-media customer oriented models);

In order to get a better understanding of the standards issues addressed and the projects' requirements for support from COPRAS, contacts were established with the representatives (e.g. coordinators) of the selected projects. Additional discussion with project coordinators or representatives in charge of standardization issues for these projects indicated that the two selected tier 1 projects were likely to benefit from closer cooperation with COPRAS, while INCCOM was unlikely to require this support, as it does not aim to make direct contributions to standardization.

Subsequently, meetings at the National Technical University in Athens, Greece, (for POLYMNIA) and at the Swedish Institute for Computer Science in Kista, Sweden (for IPerG) were set up with the two selected tier 1 projects, as neither of them was able to make representatives available to

join the call 2 kick-off meeting COPRAS had organized in Brussels 16 June 2005. Details of these meetings can be found in the table below.

Project	Strategic Objective	Persons contacted	Project consortium partner	Type of contact
IPerG	Cross-media content for leisure and entertainment	Dr. Annika Wearn	Swedish Institute for Computer Science	Meeting 09/06/05
			Swedish Institute for Computer Science	
POLYMNIA	Cross-media content for leisure and entertainment	Dr. Dimitrios Kosmopoulos	National Technical University, Athens	Meeting 27/05/04
		Ms. Vicky Andronikou	National Technical University, Athens	
		Mr. Vassilios Anagnostopoulos	National Technical University, Athens	

A short overview of the outcome of these initial discussions with the individual projects can be found in the sections hereafter.

The IPerG project focuses on the technical and design aspects of pervasive games and touches upon issues such as business models, design and evolution, infrastructure and tools, through the development and deployment of 5 different showcases, each emphasizing specific aspects of pervasive gaming.

The background of the project lies in sensor-network technology that is based on the principle of small, cheap and low-energy consuming hard- and software components, being able to communicate when moving into each others proximity.

Pervasive games integrate the physical environment into the gaming experience, providing the user with a new experience, but also raising issues such as ad-hoc description and recognition of (elements in) the physical environment, and (ubiquitous) connectivity. Moreover, although for several aspects of pervasive computing, such as tracking and positioning, standardization effort is already underway, this integration may open up possibilities for the project contributing to standardization, for example in the following areas:

- Ad-hoc connectivity (also for higher levels in the OSI-layer model) and scalability of this connectivity;

- A methodology (or language) for describing a physical environment, i.e. spaces

- Middleware for pervasive games and pervasive applications

In addition the IPerG project will be developing a distributed object model for (ad-hoc) peer-to-peer networks. It remains to be decided however whether this will be based on open source software, or whether this will be a proprietary development.

Although pervasive games are the design goal of the project, its results –specifically those that are fit for standardization – could have an impact across a larger area of pervasive applications, such as virtual advertising, where messages or services may be triggered through the (unpredictable) proximity of spaces and (personalized) devices.

Despite the project's potential contribution to standardization, it has only few resources to address this and therefore welcomes the support from COPRAS. Prime focus areas in this respect could be:

- To see whether there are cooperation possibilities with other projects working in the areas of pervasive computing or peer-to-peer technology;

- To point out ongoing standardization work that might be relevant to IPerG's activities or objectives;

- To analyze in which areas and to which standards bodies IPerG could bring contributions, taking into account the project's work plan, as well as the agenda or the respective standards bodies.

Cooperation between IPerG and COPRAS will have to be concretized in a Standards Action Plan; in view of the thematic scope of the project's activities, W3C could be an interfacing partner for the project.

The <u>POLYMNIA</u> project focuses on personalizing visitors' experience at entertainment parks or other venues such as historical or archeological sites or interest. This is being done by identifying, tracking, and recording them individually through a system with multiple cameras.

The system set up by POLYMNIA will not only provide visitors with a high quality souvenir, but will also enable them to give family or friends real-time access (e.g. through the Internet) to their experience. Moreover, it will provide the option of customizing their recorded experience with personalized electronic content or preset augmented reality scenarios.

As far as standardization is concerned, focus is on enhancing content representation standards (such as MPEG-4, MPEG-7 and MPEG-21), on the W3C Synchronized Multimedia Integration Language (SMIL) standard, and on content delivery aspects. Possible contributions could include:

- New scalable visual content representation algorithms, description and organization schemes for MPEG-7 (e.g. 'fuzzy rules' for the Description Definition Schemes (DDS) or tree-structured models for better indexing of data in databases in order to speed-up the search-process);

- Enhancements to SMIL (e.g. by introducing scalable spatio-temporal description or by enabling adaptation of content to network and terminal characteristics);

- Concepts for automatic acquisition, detection and localization of semantic content in MPEG-4, specifically focusing on human content detection in a continuously changing physical environment;

- Content delivery issues such as Quality of Service and privacy issues.

The exact nature of the contributions can be determined once the first prototype of the POLYMNIA system has been evaluated.

POLYMNIA's standardization activities are conducted by the project coordinator, in conjunction with 2 other partners. However, with only 3 person/month allocated to standardization, resources are limited and additional support from COPRAS would be welcome, focusing on the following topics:

- Determining which of the (potential) contributions could be relevant to standards bodies and determining to which organizations and working groups (potential) contributions could be made;

- Determining whether there are recent developments in standardization that POLYMNIA could make use of in its project.

Cooperation between POLYMNIA and COPRAS will have to be concretized in a Standards Action Plan; in view of the thematic scope of the project's activities, W3C could be an interfacing partner for the project.

4.   Kick-off meeting

The second COPRAS kick-off meeting marking the end of COPRAS WP3 activities and addressing projects in call 2 was held 16 June 2005 at the CEN/CENELEC Meeting Centre in Brussels. Purpose of the meeting was to identify common views, possible communalities in specifications addressed, and possible clustering of resources and work, as well as to determine which support could be given to the projects by – or through – COPRAS, and to identify the right constituency for giving this support.

Finally, the objective of the kick-off meeting was to define the proper follow up actions between projects, COPRAS and standardization groups, in order to get the development of Standardization Action Plans underway.

4.1 Invited projects

In Strategic Objectives 2.3.2.3 (Open development platforms for software and services) all selected tier 1 and tier 2 projects (i.e. AMIGO, ASG and SODIUM) projects were invited, together with 2 additional projects (INFRAWEBS and SECSE) as suggested by the responsible Project Officer.

From the Cognitive systems (2.3.2.4) Strategic Objective no projects were initially selected for the COPRAS Programme, and hence no projects were invited.

In 2.3.2.5 (Embedded systems) the selected tier 1 and tier 2 projects (DECOS, HIJA and ICODES) were invited, as well as – upon suggestion of the responsible Project Officer – all other IP, NoE and STREP projects in this Strategic Objective (i.e. ARTIST-2, ASSERT, BETSY, CEmACS, COBIS, COMPARE, GOLLUM, HIPEAC, HYCON, NeCST and RUNES).

Three selected tier 1 and tier 2 projects (MOSQUITO, wearIT@work and SNOW) were invited in Strategic Objective 2.3.2.6 (Applications for the mobile user and worker).

Three projects were invited in Strategic Objective 2.3.2.7 (Cross-media content for leisure and entertainment), i.e. the tier 1 projects IPerG and POLYMNIA (with whom pre-meetings were organized) and the tier 2 project INCCOM.

All projects in Strategic Objective 2.3.2.8, 'GRID-based systems for solving complex problems', (i.e. AKOGRIMO, CoreGrid, DataMiningGrid, GRIDCOORD, HPC4U, InteliGRID, K-WF GRID, NextGRID, OntoGRID, PROVENANCE, SIMDAT and UniGridS) were invited to the kick-off meeting.

The selected tier 1 project EUROPCOM from Strategic Objective 2.3.2.9 (Improving risk management) was invited to the kick-off meeting.

In Strategic Objective 2.3.2.10 (eInclusion) the selected tier 1 and tier 2 projects (i.e. ASK-IT, EIAO, Support EAM and MAPPED) were invited.

Apart from the FP6 projects listed, also the SMMART project was invited to participate in the Embedded systems break-out session.

Of these 41 invited projects, only 8, or a bit less than 20% actually attended the kick-off meeting. A list of participating projects, their representatives and the break-out session they attended is shown in the table below.

Project acronym	Represented by	Strategic Objective	Break-out session
DECOS	Mr. Erwin Schoitsch	2.3.2.5	Embedded systems
HYCON	Ms. Françoise Lamnabhi-Lagarrigue		
HIJA	Mr. Scott Hansen		
SMMART	Mr. Bernard Istasse		
UniGridS	Mr. Daniel Mallmann	2.3.2.8	Grid-based systems
Data Mining Grid	Mr. Vlado Stankowski		
EUROPCOM	Mr. Stuart Ingram	2.3.2.9	Individual meeting
wearIT@work	Prof. Michael Lawo	2.3.2.6	Individual meeting

When compared to the call 1 kick-off meeting (where 72% of invited projects actually attended the kick-off meeting), turn-out for the call 2 kick-off meeting is actually very low. A number of reasons can be identified here:

- Many of the invited projects (almost 30%) initially did not respond to the COPRAS questionnaire, and therefore may not (yet) have concrete intentions of contributing to standardization, or concrete requirements from standards bodies;

- Several projects indicated to appreciate the support from COPRAS but not to be able, due to agenda conflicts, to come to the kick-off meeting in Brussels; reason for this clearly is the timing of the kick-off meeting in the – traditionally very busy – pre-holiday period;

- Several projects indicated not to be able to send representatives to the kick-off meeting due to resource issues; this may be caused by the fact that the number of projects that has not allocated work packages or resources to standardization is considerably higher in call 2 than it

was in call 1; this issue was partly addressed by organizing kick-off pre-meetings at project coordinator's premises, as well as post kick-off meeting contacts.

- In some Strategic Objectives, notable GRID-based systems for solving complex problems, cooperation towards and communication on standardization is already well organized internally as well as externally, taking away the necessity for all projects participating in events like the COPRAS kick-off meeting.

When taking these circumstances into account, and subtracting the number of projects that may not have found the necessity for joining the kick-off meeting while at the same time adding the projects that joined in pre-meetings or had post kick-off meeting contacts, the attendance rate increases to almost 58%. Although this is still lower than the results for the call 1 kick-off meeting, it is a reasonable turn-out considering the circumstances.

4.2 Participation of external experts, Commission Project Officers and COPRAS representatives

In addition to representatives from research projects, several representatives from the European Commission, as well as external experts participated in the GRID-based systems and Embedded systems break-out sessions of the call 2 kick-off meeting, as described in the table below.

Entity	Represented by	Break-out session
European Commission, DG InfSo, Unit G2	Mr. Peter Wintlev-Jensen	Plenary Session only
European Commission, DG InfSo, Unit G3	Mr. Tom Clausen	Embedded Systems
European Commission, DG InfSo, Unit F2	Ms. Annalisa Bogliolio	GRID-based systems
University of Southampton	Prof. David De Roure	
GRID Standardization Coordination Group	Mr. Philippe Wieder	

Specifically the participation from Commission Project Officers was highly appreciated, both in view of their contributions to the discussions in the break-out sessions as with respect to the Commissions strong encouragement towards projects to interface with standardization processes.

As already indicated in section 3.1, for several reasons it was decided not to invite representatives from standardization working groups to the call 2 kick-off meeting. Instead, the responsibilities to chair the break-out sessions as well as to provide participating projects with an overview of ongoing standards activities potentially relevant to their project's activities were distributed among the COPRAS consortium members as follows:

COPRAS consortium partner	Represented by	Break-out session
CEN	Mr. James Boyd	Plenary session only
CENELEC	Mr. Bart Brusse	wearIT@work
ETSI	Prof. Tatiana Kovacikova	EUROPCOM
	Mr. Yves Chauvel	GRID-based systems
The Open Group	Mr. Scott Hansen	Embedded systems
W3C	Mr. Rigo Wenning	GRID-based systems

4.2 Plenary sessions

As with call 1, the kick-off meeting was split up in a plenary part, focusing on the more generic aspects of interfacing between IST research and standardization, and several parallel break-out sessions focusing on the actual contents of standardization work in pre-identified thematic areas. In order to allow more time for discussion between projects in break-out sessions, and hence to maximize their output, the plenary part of the kick-off meeting was kept relatively short and concentrated on issues that were considered to be supportive to the goals of the kick-off meeting. The plenary part therefore focused on the following issues:

i) Overview of the objectives and results of the COPRAS project
ii) Different paths projects can take towards standardization
iii) The importance of standardization for IST research projects
iv) The agenda and targeted outcome of the break-out sessions

For more information on the way these issues were addressed during the plenary part, the agenda of the kick-off meeting can be found in Annex A, while the presentations given can be found on the COPRAS web site (www.copras.org) .

4.3 Break out sessions

As a result of the relatively low turn-out of the kick-off meeting, and the fact that discussion with several projects had already been taken care of in pre-meetings, the break-out sessions were finally organized as follows:

   i)   Break-out session 1: **Embedded systems** (DECOS, HYCON, HIJA & SMMART, chaired by **The Open Group**)
   ii) Break-out session 2: **Grid-based systems** (UniGridS and Data Mining Grid, chaired by **W3C**)
   iii) **Individual meeting** with the EUROPCOM project (chaired by **ETSI**)
   iv) **Individual meeting** with the wearIT@work project (chaired by the **CENELEC**).

The aim of the break-out sessions was to enable projects addressing similar standardization areas to give a more detailed overview of the actual issues they were addressing for the purpose of determining cooperation possibilities between projects as well as between projects and standards bodies. Therefore, the COPRAS consortium partners also gave an overview of the status of the most relevant activities within and outside their organizations activities in order to identify overlap, matches and also possible conflicts with projects' (planned) standardization activities. In this respect, focus was on the actual contents of ongoing work as well as on the processes adopted for this work. The results of the 5 break-out sessions are summarized in the following sections.

4.4.1   Embedded systems break-out session

The focus of the embedded systems breakout session was to exchange information amongst projects concerning standardisation objectives, and to determine if there were areas of common interest. Where common areas are discovered the projects would discuss the feasibility of creating one or more clusters of IST projects to collaboratively progress shared standardisation interests. The following projects participated in the breakout session:

   i)   DECOS (Dependable Embedded Components and Systems);
   ii) HYCON (Hybrid Control: taming heterogeneity and complexity of networked embedded systems);
   iii) HIJA (High Integrity Java Applications);
   iv) SMMART (System for Mobile Maintenance Accessible in Real-time);

In addition to partners from each of these projects, a representative from the Embedded Systems Unit of the European Commission also kindly participated in support of greater collaboration amongst the embedded systems projects in addressing standards objectives.

Each of the projects presented a summary of the relevant standards area where their projects will utilise existing standards and potentially develop extensions or new standards in support of the new research and development being undertaken within their projects. The following summarises the key points:

The DECOS project presented how they were addressing several standards topics related to functional safety, security and dependability aspects of embedded systems. The project has several partners that are active in various standards bodies including ARINC, Autosar, Flexray, IEC, and others. The project will develop a safety case for the technologies developed within the project in conformance with EN 50129. The project has already identified shortcomings related to the security aspects of the IEC 61508 functional safety specification and expects to develop proposed extensions. The project is also developing various tools and methodologies for the development of embedded systems, which are intended to contribute to standardisation. It was noted that the embedded systems area often lacks a holistic view of standardisation with specifications addressing only part of the challenge for specific domains. For example, Security has a Safety impact, but there are several different approaches to security and specifications amongst the standards organisations.

The <u>HYCON</u> project presented its work towards methodologies and tools for the design of networked embedded control systems in power management, industrial control, automotive control and multimedia communication networks. The project has broad support from both academia and expects to make a contribution to standards in the area related to development tools as part of their work to establish a new open framework and online tool repository for developers of embedded control systems. The NoE seeks to establish a base of industry tools that utilise standard data formats for switched linear systems, common models, and component libraries. The project intends to contribute to standards through making these specifications public and to encourage a broad range of tool developers and researchers to adopt the proposed approach to tool integration being developed within the project.

The <u>HIJA</u> project has resources allocated to specific objectives to contribute to standards for real-time Java for developing architecture neutral embedded systems for the safety critical, business critical and ambient intelligence domains. The project has developed a safety critical real-time Java profile, which is intended to become an industry standard for Java based embedded systems development in the aerospace and other safety related applications. Further profiles will also be submitted as proposed standards addressing embedded systems development for business critical and ambient intelligence domains. The project is also developing a toolset for real-time application development that includes tools for analysis, model checking, and validation of embedded systems applications. The techniques and specifications for these tools and their interactions will also be published as industry specifications.

The <u>SMMART</u> project is currently in negotiations with the European Commission having successfully completed the evaluation and selection process for funding of their IP. The project will develop technologies for product engineering, manufacturing and maintenance system development and will use smart tags and a wide range of standards in support of new technologies for mobile maintenance and logistics for the transport sector. The areas where the project anticipates contributing to standards include RFID, signal processing for on-board systems, middleware technologies for devices, and possible revisions to the STEP standard. The project anticipates an official start date of October 2005, so participation in a cluster with embedded systems projects already in their first year of operation may not be appropriate. It was noted that the COPRAS partners can still assist the SMMART project in formulating the standardisation activities within the technical annex during negotiations, and as an individual project supported by COPRAS, once the project has started.

Based on the presentations and discussions, the projects identified two areas where there appeared to be opportunities for clustering of embedded systems projects to address common objectives: standards for safety critical embedded systems, and standards for embedded system tool chains. It was noted that there were several embedded systems projects that expressed interest in collaboration, but were unable to attend the meeting. The COPRAS project agreed to contact these and obtain more detailed information concerning target areas for contribution to standards. Once this information is collected and distributed amongst the projects, a conference call will be organized to discuss and make a final decision to form one, or possibly two clusters of projects addressing common areas of standardization.

4.4.2   GRID-based systems

In the breakout session on GRID Projects only few projects were actually present although all the Projects in the GRID area in call 2 of IST FP 6 were represented as they are organized in a GRID Standardization Coordination Group (GSCG). Representatives for this coordination group were Philippe Wieder and Daniel Mallmann from FZ-Jülich. Annalisa.Bogliolo from the GRID-Unit in DG Information Society presented and defended the point of view of the Commission. David De Roure from the Global Grid Forum (GGF) and the University of Southampton had also joined the meeting upon invitation of W3C, and Mr. Yves Chauvel, representing ETSI also participated.

The breakout session started with a brief introduction of the participants. As preliminary contacts through email exchange and conference calls between GSCG, the GRID-Unit of the European Commission and COPRAS had already taken place, the discussion focused directly on the core issues. Main issue for COPRAS in this respect was to understand the central aim of the GRID-Unit

in DG Information Society to better align the envisioned standardization plans with the goals that the projects and the GRID-Unit had in mind.

Subsequently, the group discussed a list of specifications the GSCG had distributed prior to the kick-off meeting. The standards discussed included several specifications used by GRID Projects, some specifications in GGF, OASIS and W3C that the projects hoped to influence, and some specifications that need to be created. The implications of SOAP (Simple Object Access Protocol) and Web Services were discussed as well as the general standardization situation in this area, which is characterized by hard competition and industry policy issues. Based on this framework, the specifications for the layers further up were considered and the need for further improvement was discussed to fit the needs of GRID systems.

All parties agreed that the list should be completed by a second round of enquiries within GSCG and among the projects. Once completed, the list can be used to build the foundations for a Standardization Action Plan for the GRID projects.

In order to further discuss perspectives and choices to be made by the projects, Rigo Wenning, representing W3C in the COPRAS project, will be added to the GSCG mailing list. The meeting reflected the very constructive spirit that marks the GRID movement.

4.4.3 EUROPCOM individual break-out session

The standards and regulatory issues affecting EUROPCOM were discussed during the kick-off meeting. The summary is provided below.

US regulations:

- UWB emitters are probably illegal everywhere except the USA, where there have been rules since 2002. The FCC set out a "mask" of allowed power density versus RF for unlicensed UWB devices, mainly for the "WPAN" application (100 MB/s, 3 m), and also different levels for some licensed uses (such as radar).

- These FCC rules make the unlicensed devices a special case of the accidental or out-of-band emissions allowed by all devices (whether radios or hair dryers). In some cases the UWB levels are lower than the general ones – on the grounds that there will be lots of them and their outputs will fill the bands they use.

- Since UWB inevitably emits power in other users' allocated bands, these other users are not happy, and have been lobbying for low limits in the USA, and for lower limits in Europe and via the ITU-R.

UWB Standards:

- The most advanced standards work is in IEEE 802.15, but this has been stalled trying to pick one of two proposals for over a year. They are now trying to merge them instead. There has not been much real hardware so far, and none at the size/power level needed for a WPAN, so the delay has not mattered much.

- ETSI started out with groups TG31A for most uses (comms, radar, and "other") and TG31B for car radars (at a higher RF). TG31B has reached the stage of having standards, but does not concern EUROPCOM..TG31A has put together some documents, but could not proceed as they were waiting for regulation, and their meetings have stopped.

- This ETSI work was started in response to standardization mandate M/329 from the EUropean Commission, February 2003, to be complete by December 2004.

EU and ITU regulations:

- Since then RSCom has issued another mandate to CEPT, and is about to issue a replacement, also to CEPT, both for regulations rather than standards. These RSCom mandates appears not to have reference numbers, which is confusing.

- There have been technical committees considering this in several places, and generally coming up with lower limits than the FCC's. On the other hand, the EC and some regulators (such as

Ofcom in the UK) are keen to open up access and copy the FCC (who were quite dismissive of existing users).

- This has led to some arguments between regulators about whether the co-existence principles defined in ITU-R recommendations are too conservative (and can be dismissed or relaxed) or should be followed exactly (which leads to low UWB power levels).

- TG3 (the special group of ECC doing this UWB work) should produce proposals by October, but this would only be for the WPAN use – it is unlikely that they would consider specialized use such as EUROPCOM this year.

Recent events:

One if the EUROPCOM intended outcomes is some inputs to ETSI (possibly other bodies) for a standard. As a first step, one of the EUROPCOM partners wrote a first draft of a summary of the regulatory and standards situation (Deliverable D2.4, May 2005).

Conclusions and next steps:

EUROPCOM is the project from the Improvement of the risk management Strategic Objective - it will investigate and demonstrate the use of UltraWideBand (UWB) radio technology to allow the precise location of personnel to be displayed in a control vehicle and simultaneously improve communications reliability.

The project plans to produce some input for standards later on – in 2007, however the project objectives touch upon two issues, regulatory as well as standardization. The attached ETSI TC is ERM (EMC and Radio Spectrum Matters), especially:

- TG31A (Ultra Wide Band for Short Range Devices) - LAES (Local Authority Emergency Services)

- TG31C – for UWB sensors.

The tasks that have been identified during the kick-off meeting include:

Within EUROPCOM, a consensus has to be found on using licensed, or non-licensed frequency band. Once consensus is reached, the EUROPCOM project will introduce the project's standardization issues within the next common ERM-ECC-ETSI meeting in October, 2005. COPRAS will arrange the invitation and all related issues necessary for the meeting. There have been also some particular technical issues identified that COPRAS will investigate before EUROPCOM is invited to the ERM-ECC-ETSI meeting in October 2005.

4.4.5   wearIT@work individual break-out session

The wearIT@work project intends to develop a new paradigm for wearable mobile computing that supports complex tasks with a minimum of human-machine interaction. This should enable those using the technology to keep their attention focused on the interaction with the work environment. Elements in the project's scope include a new software framework and hardware platform and addresses the following standardization issues:

Project	Area of activity	Standardization issues & objectives
wearIT@work	Hardware platform	- Ergonomic aspects; guidelines & standards for user-centric design
	Software framework	- Common basic architecture allowing a variety of input as well as output devices to interface in a standardized way and in a network independent way - Graphic User Interfaces; guidelines & standards for user centric design - Common middleware layer - Architecture for a common service module
	Content management	- Identifying content requirements & content retrieval based on geographic positioning and context/action detection

		• Content security management
		• Multimodal interfacing (voice recognition, haptic devices) for detecting content requirement

The wearIT@work project is spread out over a variety of different industrial and service environments and is setting up pilot projects in environments as far apart as a municipal fire department, a car manufacturing production line, an aircraft maintenance facility and a medical environment. Central aspects are increased efficiency and quicker ways of working through wearable computing devices and wireless communications.

For these pilot environments wearIT@work applies standards (e.g. communication protocols) already set by organizations responsible for these particular environments. However, when looking at the potential standardization deliverables, the project touches upon a considerable number of areas that could possibly generate input to a variety of standards bodies.

However, as there currently is no over-arching organization addressing the standardization requirements in wearable computing in an overall manner, the project needs support from COPRAS in the following ways:

- identify which existing standards could be applied in the wearable computing environment;

- identify the 'blank spots' between the currently existing standards and identify new areas for standardization or areas where extensions to existing standards are required.

An additional standardization objective for the wearIT@work project is to set up an 'Open Wearable Computing Group' as a new industry forum addressing the needs of the wearable computing environment and uniting the relevant stakeholders behind an interoperability program, a specification program, and a combined effort, supporting the wider adoption of wearable computing technology. Cooperation from existing standards bodies in setting up this forum could be helpful.

Due to the fact that the wearIT@work project touches upon a variety of potential standardization issues that are spread out over different organizations, additional discussion will be necessary to define cooperation possibilities in more detail and to make arrangements for the development of a Standards Action Plan.

4.5 Summary & overall kick-off meeting results

Considering the circumstances also underlined in section 4.1, the kick-off meeting was reasonably well attended with 18 participants, representing 8 different projects, several Units within DG InfSo and the 5 COPRAS consortium partners.

As far as clustering possibilities are concerned, there seem to be two concrete options that COPRAS will have to elaborate on:

- **GRID-based systems:** Although only 2 projects were represented in the break-out session for GRID-based systems, the responsible Project Officer strongly encouraged COPRAS to prepare a joint Standardization Action Plan for all 12 projects in this Strategic Objective.However, despite the fact that the necessity to work on GRID standardization is recognized, it is unlikely that sufficient commonality between projects can be identified short notice. Consequently it cannot be guaranteed that a Standardization Action Plan can be prepared for end of November 2005 (i.e. the planned delivery date for the call 2 Standardization Action Plans). W3C will however participate in the discussions of the GRID Coordination and Standardization Group that was initiated by the Commission.

- **Embedded systems:** there is some enthusiasm for clustered standardization activities among invited Embedded systems IP and NoE projects. This focuses on the following two areas:

  o Safety critical embedded systems;

  o Information exchange between tools.

- Projects that could possibly be involved in the clustering are (ICODES, DECOS, HYCON, HIJA, GOLLUM & ASSERT).Following up on the kick-off meeting, material presented will be distributed among the participating projects Embedded systems projects, and presentation

material from those projects that were not present but could be involved in a standardization Action Plan (i.e. ICODES, GOLLUM & ASSERT) will be gathered and distributed as well.

The EUROPCOM project requires COPRAS' support as it seeks direct interfacing with ETSI ERM rather than through one of its consortium partners (although some of these are ETSI members). The project intends making contributions to standardization end of 2007 but fears ETSI may propose a technical solution to CEPT, that is not compatible with the choice of the EUROPCOM consortium partners.

The wearIT@work IP project indicated a large number of areas where cooperation with COPRAS is desired. The project is developing pilots in 4 different areas (fire fighting, automotive production line, aircraft maintenance and hospital) all aiming to make the right information available on site through wearable computing devices.

Although wearable computing uses standards already developed in many different areas (e.g. data communication protocols) it has identified a number of areas where standardization specifically related to wearable computing maybe pursued such as context detection, interfacing between various input and output devices, common software architecture, middleware and content management.

As the project made a strategic decision to pursue standardization, support from COPRAS is required in helping identifying which standardization goals the project should best pursue. Additional discussions between the project and the COPRAS consortium partners will be planned to define the cooperation aspects in more detail.

Pre-meetings with IPerG and POLYMNIA also generated several concrete cooperation possibilities between these projects and standards bodies, both among the COPRAS consortium partners and external. This cooperation may take the shape of a two-way process with input from standardize bodies (e.g. on the most recent standardization developments relevant to the projects) to the projects as well as output from the projects being passed through standardization processes. Further discussion however will be necessary to plan in more detail the development of a Standards Action Plan.

Finally, cooperation possibilities with the EIAO project, that registered for the kick-off meeting but could not make it due to circumstances, will be investigated by COPRAS.

5. Conclusions & recommendations

The kick-off meeting, together with the pre-meetings, established the first step for projects in call 2 towards the development of Standardization Action Plans. For most projects (and clusters of projects) the second step will be a more detailed discussion on the concrete areas where cooperation with COPRAS will be beneficial and on the definition of these Standardization Action Plans. Elements of these plan may include COPRAS' support in helping projects drafting specifications, organizing meetings with relevant standards bodies and arrange input on mutual sides (it should be underlined in this respect that merely staying in contact with the projects is not enough).

The third step finally encompasses the execution and monitoring of the Standardization Action Plans in the 'rolling action plan', which contains all action steps in all Standardization Action Plans agreed between COPRAS and projects participating in the COPRAS programme.

When reviewing the results of the kick-off meeting, it should be concluded that COPRAS in in a good position achieving its target of concluding Standardization Action Plans with 9-11 projects in call 2. Taking into account the possibilities for clustered standards action plans for GRID-based systems and Embedded systems, it is not unlikely that these two alone will involve even a higher number of projects than the targeted amount. Further, several concrete opportunities will have to be elaborated on further with at least 4 individual projects.

It should however be underlined that not al projects or clusters have progressed far enough with their activities to start the work on a Standardization Action Plan. Considering the actions that have already been put in place, more clarity should be available during the first half of September 2005 and by the end of 2005 the first set of call 2 Standardization Action Plans should become available.

Annex A: Kick-off meeting agenda

Agenda

**FP6 IST call 2 Kick-Off Meeting, 16 June 2005; 11.00 to 17.00
CEN/CENELEC meeting center, 35 rue Stassart, 1050 Brussels**

Item	Topic		Timing
1	Opening of the meeting and welcome		11:00
4	Keynote address by Mr. Peter Wintlev-Jensen of the European Commission		11:10
2	Introduction to the COPRAS project and summary of its results by Mr. Bart Brusse, COPRAS Project Manager		11:20
3	Overview of different paths towards standardization by Mr. Scott Hansen of the Open Group		11:45
5	Presentation of the agenda and targeted objectives of the kick-off meeting by Prof. Tatiana Kovacikova of ETSI		12:10
Lunch			12:30
6	Thematic break-out sessions: A. GRID-based systems (Lorentz) B. Embedded systems (Galileo) C. EUROPCOM (Archimedes) D. wearIT@work (Sibelius) E, EIAO (Cervantes)		13:30
	6.1	Introduction by the invited projects on the scope of their projects and the possible standards related issues they will touch upon	13:30
	6.2	Short overview on planned or ongoing standardization activity in relevant areas as well as on relevant COPRAS activity	14:30
Coffee break			14:45
	6.3	Discussion in break out sessions and definition of: • Generic aspects of interfacing between IST projects and standardization that should be addressed by COPRAS • Specific areas/issues where COPRAS support is needed cooperation & clustering possibilities between research projects, COPRAS and standardization working groups; • Next steps	15:15
7	Review break-out sessions at plenary level, presentation of results and agreed next steps		15:45
8	Close of the meeting		16:00