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# 1. Introduction

Research that is carried out under European Framework Programmes is often closely connected to standardization. Projects addressing technical or scientific issues in many cases will produce results that can be used to develop a new standard, to improve an existing one, or to anticipate a future standard. Even projects that do not primarily aim at developing standards, may contain elements supporting ongoing or new standardisation processes and may benefit from interfacing with standards bodies for the dissemination of their results.

To optimize interfacing and cross-fertilization, standardization and research will have to proceed in parallel as much as possible. This will ensure the standards community receives contributions at the earliest possible point in time, while at the same time safeguarding research projects from missing out on the latest developments and state-of-the-art in standardization.

The ICT standardization environment is however a dynamic environment with several hundreds of standards bodies, trade organizations and industry consortia worldwide operating in the same arena, making it relatively hard for research projects finding the organization(s) that best fit their needs and objectives, although they are required to keep standards bodies informed on contributions they could make to standardization processes. As a consequence, windows for standardization often appear too short or are even missed out on, causing resources being wasted (both on the side of research projects and standards bodies), and projects' output not becoming available to industry and society.

These are the issues that were addressed by the Cooperation Platform for Research and Standards (COPRAS), a Specific Support Action (SSA) in IST Call 1 of FP6, that started its activities early February 2004, and terminated its work end of January 2007. During these 3 years, the COPRAS partners supported many projects in FP6 in their interfacing with standards organizations, and cooperated towards a set of sustainable deliverables that will also assist projects in future Framework Programmes in their efforts to pass their output through standardization processes. Nevertheless – as shown in the last section of this report – other measures beyond the scope of COPRAS will have to be taken as well to enable future project achieving their standardization results.

This Final report provides an overview of the main targets COPRAS set itself at the start of its activities, and the methods it deployed working towards these targets. In addition, it will briefly discuss the work that was carried out, and will evaluate the impact that the project's deliverables and results managed to generate. Finally – in Annex A to this report – it will also elaborate how the sustainability of the main deliverables beyond COPRAS' own lifespan can best be guaranteed.

## 2. Partners involved

COPRAS was initiated by the European Committee for Standardization (CEN – also the coordinating partner), the European Committee for Electrotechnical Standardization (CENELEC) and the European Telecommunications Standards Institute (ETSI), together with the World Wide Web Consortium (W3C) and The Open Group. All of these 5 standards organizations are members of the Information and Communication Technology Standards Board (ICTSB); the coordinating forum for ICT standardization in Europe.<sup>1</sup>

As the combined partners in COPRAS address a very broad spectrum of ICT areas, ranging from electrical systems to web languages, from mobile communication technologies to GRID technology, and from embedded systems to eHealth, the project was able to address most of the Strategic Objectives defined in the first two IST Calls of FP6. Moreover, through the cooperation with other standards organizations in the ICTSB, as well as through individual partnerships of the consortium partners with – for example – ISO/IEC<sup>2</sup>, ITU<sup>3</sup> or the IETF<sup>4</sup>, a virtually complete package of research/standards interfacing services could be offered to other projects.

Despite the fact that lead-partners were appointed for specific lines of activity, the consortium members distributed the work in a balanced way across different Work Packages, allowing

<sup>1</sup> For more information on the ICTSB and its members, please see: [www.ictsb.org](http://www.ictsb.org).

<sup>2</sup> International Standards Organization/International Electrotechnical Committee, also see: [www.iso.org](http://www.iso.org), or: [www.iec.org](http://www.iec.org)

<sup>3</sup> International Telecommunication Union, also see: [www.itu.org](http://www.itu.org)

<sup>4</sup> Internet Engineering Task Force, also see: [www.ietf.org](http://www.ietf.org)

participation of all partners in all activities, which contributed to the stability of the consortium throughout the entire 3 year period.

### 3. Objectives & methodologies

COPRAS started its activities on 1 February 2004 with the two following core objectives, that have basically remained the same for its entire lifespan:

- To provide projects in FP6 IST Calls 1 & 2 with individual support, helping them to arrange their communication and cooperation with standards organizations, and;
- To develop a set of Standardization Guidelines that will help projects in subsequent Calls and Framework Programmes contacting the right standards organizations and building the interface to standardization into their project proposals and work programs.

With respect to the first of these two objectives, COPRAS' aim was to develop 'Standardization Action Plans' for those IST projects in the first two Calls of FP6, that were expected to benefit most from receiving concrete support in their standardization activities.<sup>5</sup> These plans would specify the subsequent steps a project should take to quickly get in contact with the standards organization of their choice, to build the constituency necessary for the adoption of their contributions, and to prepare the process of making the actual submissions. With several hundreds of IST projects in FP6, the target was to develop Standardization Action Plans for 8-10% of projects in Calls 1 & 2.

In order to determine which projects should be addressed, a 4-step methodological process was designed, and applied to the first two 2 Calls in a cyclical way:

1. Gathering of information from all projects in the Strategic Objectives selected, on the standardization potential of their output;
2. Analysis of the information gathered and – where applicable – clustering this information around specific themes/areas;
3. Selection of projects that are expected to benefit most from having Standardization Action Plans developed for them;
4. Development of Standardization Action Plans, followed by the approval en execution of the plans by the projects.

With respect to the impact of the Standardization Action Plans, COPRAS defined two basic goals: first, the target was to generate in total 6 tangible contributions to ongoing standardization work; this could concern technical specifications, but for example could also be the establishment of a new constituency, or contributions to increase the deployment of an existing standard. Secondly, the results and experiences of the standardization work would be published in a set of 10 so called 'case study brochures' that could support future projects building the interface to standardization into their project plans.

The second objective envisaged using the knowledge that COPRAS was about to build up as a result of working with the selected projects in Calls 1 & 2, as the basis for a set of generic guidelines that would assist projects in their research/standards interfacing processes, also beyond COPRAS' own lifespan. In order to optimize this deliverable, a 4-step methodology was defined as well prior to and during the project's activities:

1. Preparation of a first document version of a set of generic Standardization Guidelines, and distribution of this document among projects in Calls 4 & 5;
2. Gathering of feedback from projects in Calls 4 & 5 with respect to their appreciation and usage of the generic Standardization Guidelines;
3. Development of an interactive platform version of the Standardization Guidelines aiming to ease different constituency's access to standards information specifically relevant to them;

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<sup>5</sup> COPRAS addressed 18 out of 22 Strategic Objectives in Calls 1 & 2, because 4 areas (i.e. 'Pushing the limits of CMOS, preparing for post-CMOS', 'Micro and nano systems', 'Advanced displays', and 'Optical, opto-electronic, photonic functional components') were not considered sufficiently promising in terms of standardization output that could be expected.

4. Upgrade of the document and platform versions of the Standardization Guidelines based on feedback received, and launching the new versions at an 'Open Meeting', bringing all relevant groups of stakeholders to the ICT research/standards interfacing process together .

As the cooperation with other projects, as well as their usage of the Standardization Guidelines was essential with respect to COPRAS achieving its goals, the communication of its objectives and results played a vital part the project's strategy. Consequently, one of the main goals from the beginning was to systematically disseminate its results, findings and deliverables to all three of its main constituencies, i.e. the research and standards communities and Commission Project Officers. More information on this issue is contained in Annex A to this report.

## 4. Work performed and results achieved

Implementing the methodological steps it had defined, COPRAS started of with the information gathering process addressing projects in FP6 IST Call 1. It send out an information package on its objectives, as well as on the benefits the cooperation with COPRAS could bring, and invited then to fill in a questionnaire on their standardization intentions and requirements. This generated a response rate that was considerably higher than the anticipated 40-50%, and provided COPRAS with a large amount of information on the standardization requirements of IST projects in Call 1.

In the information analysis process that followed, many of the projects responding were identified as being likely to benefit from support from COPRAS, and hence were selected for closer cooperation. Subsequently, these projects were contacted and meetings were arranged with several of them to obtain a more precise understanding of the standards issues they planned to address. Finally, all of them were invited to participate in a first 'kick-off' meeting on 14 October 2004, together with representatives from standards organizations relevant to their projects.

With 47 participants from projects in almost all targeted Strategic Objectives, as well as from 13 standardization working groups (also some of whom do not participate in COPRAS), the first kick-off meeting was very successful. Of the selected projects, 60% attended and presented the standardization issues they planned to address, while representatives from standards bodies gave an overview of their organizations' activities towards the issues addressed by the projects. Both sides discussed the possibility of developing closer cooperation throughout the course of their projects' lifespan. The kick-off meeting marked the start of the development of (individual or clustered) Standardization Action Plans for the first 16 projects, covering 8 out of the 10 Strategic Objectives addressed in this Call.

Strategic Objective	Project	Instrument	Plan
Broadband access	GANDALF	STREP	Individual
	BROADWAN	IP	Individual
Mobile and wireless systems beyond 3G	SIMPLICITY	STREP	Individual
Towards a global dependability and security framework	SECOQC	IP	Individual
Multimodal interfaces	SIMILAR	NoE	Individual
	TALK	STREP	Individual
Networked audio-visual systems and home platforms	ENTHRONE	IP	Clustered
	ePerSpace	IP	Clustered
	MediaNet	IP	Clustered
	TEAHA	STREP	Clustered
Networked businesses and governments	SATINE	STREP	Individual
eHealth	ARTEMIS	STREP	Individual
Technology-enhanced learning and access to cultural heritage	ELeGI	IP	Clustered
	TELCERT	STREP	Clustered
	UNFOLD	CA	Clustered
	ICLASS	IP	Clustered

As the process and methodologies applied had been proven to very effective, the same steps were applied for projects in Call 2. This again generated a considerable amount of response, and lead to the development of Standardization Action Plans for an even larger group of projects as demonstrated in the table below.

Strategic Objective	Project	Instrument	Plan
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Embedded systems	ARTIST2	NoE	Clustered
	ASSERT	IP	Clustered
	DECOS	IP	Clustered
	HIJA	STREP	Clustered
Applications for the mobile user and worker	wearIT@work	IP	Individual
Cross-media content for leisure and entertainment	IPerG	IP	Individual
	POLYMNIA	STREP	Individual
GRID-based systems for solving complex problems	AKOGRIMO	IP	Clustered
	CoreGrid	NoE	Clustered
	DataMiningGrid	STREP	Clustered
	GRIDCOORD	SSA	Clustered
	HPC4U	STREP	Clustered
	InteliGRID	STREP	Clustered
	K-WF GRID	STREP	Clustered
	NextGRID	IP	Clustered
	OntoGrid	STREP	Clustered
	PROVENANCE	STREP	Clustered
	SIMDAT	IP	Clustered
	UniGridS	STREP	Clustered
	Improving risk management	EUROPCOM	STREP
eInclusion	EUAIN	CA	Individual
	Support-EAM	SSA	Individual

The process of analysing and selecting projects in Calls 1 and 2 ended with the kick-off meeting organized for projects in Call 2, on 16 June 2005. Looking at the results of the process steps that lead to the development of the Standardization Action Plans, it was concluded that the methodology had been very successful, and that all targets set had been reached. Moreover, instead of the anticipated 8-10%, COPRAS finally developed Standardization Action Plans for more than 13% of projects in these two Calls, and had even developed such a plan for a cluster of Call 5 projects before these started their activities.

Call	Number of Projects	Work Package 2				Work Package 3		Work Package 4	
		Addressed		Responding		Selected & invited		SAP development	
		Target	Result	Target	Result	Target	Result	Target	Result
1	176	176	164	> 70	92	>14<18	40	>14<18	16
2	111	111	107	> 44	55	>9<11	41	>9<11	26
<b>1 &amp; 2</b>	<b>287</b>	<b>287</b>	<b>271</b>	<b>&gt; 115</b>	<b>147</b>	<b>&gt;23&lt;29</b>	<b>81</b>	<b>&gt;23&lt;29</b>	<b>38</b>

The Standardization Action Plans, describing projects' steps working towards standardization results and the support COPRAS would provide in this process, were executed from early 2005 onward. This process was closely monitored, and where necessary adjustments were made, and additional assistance was provided to projects. Although several plans, specifically for projects in Call 2, exceeded the lifespan of COPRAS itself, and were still continuing when this report was written, a considerable number of projects managed to conclude their cooperation with standards organizations in a successful way.

This is documented by the fact that the overall target for COPRAS was to generate at least 6 tangible contributions to standardization processes; this could for example encompass extensions to an existing technical specification, but it could also be the establishment of a new constituency opening up a new area of work, or even supporting the uptake of a newly developed standard by industry and society. However, as the overview in the table below shows, projects managed to generate impact in standardization processes across at least 10 different areas, addressing standards organizations participating in COPRAS, in the ICTSB, and even on a global level. As the execution of the plans is still ongoing, and standards processes can sometimes be continued beyond a projects lifespan by its consortium partners, it is likely that the Standardization Action Plans may generate twice as much tangible results as originally targeted.

Project	Standardization Impact
Embedded Systems Cluster	Creation of a new working group within the <u>Java Community Process (JCP)</u> that adopted the HIJA project results as the basis for a new safety-critical standard for the Java programming language.
SIMILAR	Promotion of UsiXML as a new standard in <u>W3C</u> .

<b>Project</b>	<b>Standardization Impact</b>
GRID Cluster	Establishment of a new Technical Committee in <u>ETSI</u> , working towards a first set of specifications for new GRID standards.
e-Learning Cluster	Dramatic increase of the number of 'Units of Learning' produced using the <u>IMS Learning Design</u> standard specification.
TALK	Creation of a constituency in <u>W3C</u> around the advanced research technologies developed within the project.
POLYMNIA	Submissions to the <u>W3C Semantic Web Deployment Working Group</u> .
TEAHA	Submission of several UPnP contributions to the <u>Home Gateway Initiative (HGI)</u> .
Call 5 CWE Cluster	Formalising the process for establishing a common architecture across as a new industry reference for use in building collaborative working tools and applications.
EUAIN	Creation of <u>CEN/ISSS</u> Workshop on Accessible Document Processing.
MediaNet	Contribution of a reference architecture to <u>IETF</u> ; contributions to the DSL Forum as well as to <u>ETSI TISPAN</u> on Video over IP.

To communicate the results individual projects achieved through their execution of the Standardization Action Plans, and to summarize their experiences from working with standards organizations, COPRAS produced a set of 'case study brochures'. The following brochures were developed in cooperation with the projects concerned, and distributed both electronically and in paper format via the COPRAS web site and the COPRAS Open Meeting (see below).

<b>Project</b>	<b>Subject</b>
ENTHRONE	Standardization in technologies for the audio-visual chain
GANDALF	Standardization in combined wireless and wireline technologies
UNFOLD	Standardization in eLearning technology for Europe
HIJA	New programming standard for safety-critical embedded systems
MediaNet	Standards that ease exchange of digital audio-visual content
TEAHA	Interconnecting standards for home appliances and audio-visual applications
TALK	Standardization of multimodal dialogue context formats
Telcert	Standards for interoperability of eLearning systems
POLYMNIA	Improving personalized content detection in audio-visual standards
COSPACES	Standardization of a reference architecture for collaborative work
EUAIN	Standards for accessibility of digital information for disabled citizens

The activities towards projects in Calls 1 & 2 were completed through the 'reverse mapping analysis'. Contrary to defining standards organizations for projects to interface with, the reverse mapping process held the main standardization topics of 11 different organizations in the ICTSB against projects in Calls 1 & 2 to determine to which extend the FP6 ICT programme was addressing today's main standardization issues. The results of this analysis, that are displayed in the table below show a remarkable overlap, again stressing the necessity to streamline research/standards interfacing in ICT in order to further the development of the information society.

<b>Standards organization</b>	<b>Number of main standardization areas</b>	<b>Number of areas covered at least by one of the projects</b>	<b>%</b>
CEN/ISSS	13	10	76,9
CENELEC	10	5	50,0
ETSI	21	14	66,7
DVB	8	16	50,0
Ecma International	9	2	22,2
ERTICO	1	1	100,0
OASIS	19	19	100,0
OMG	7	7	100,0
RosettaNET	7	7	100,0
W3C	9	9	100,0
The Open Group	22	21	95,5
<b>Total</b>	<b>126</b>	<b>111</b>	<b>88,1</b>

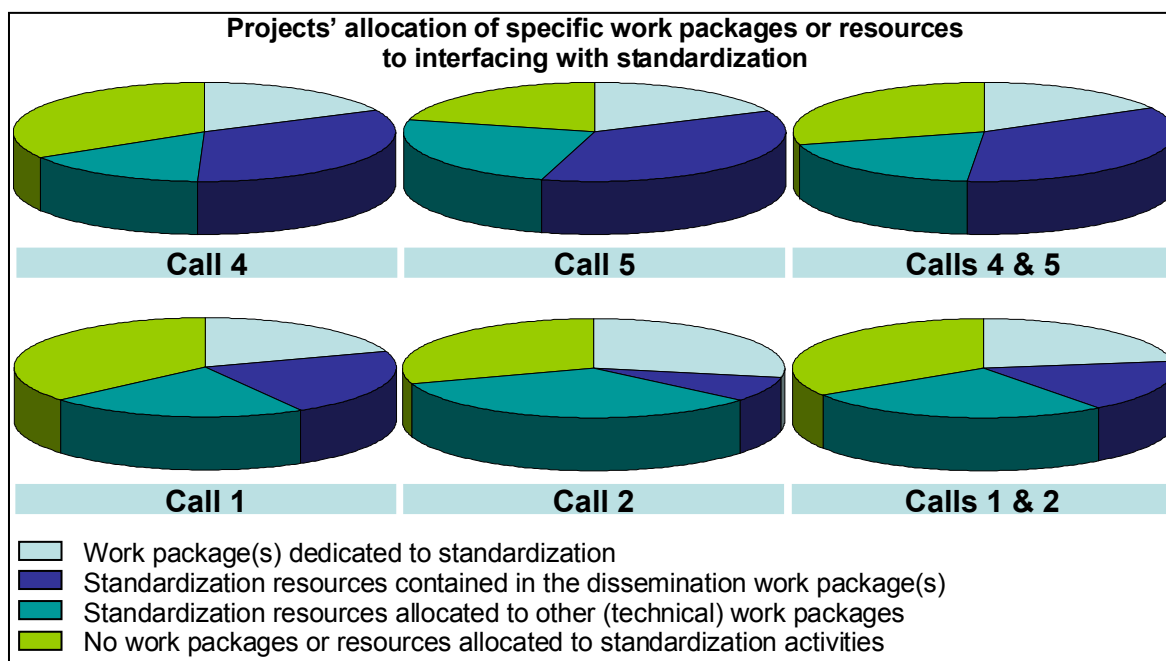
Focusing on the second of its main objectives, COPRAS spend considerable effort using, transforming and translating the information and knowledge it build working with projects in Calls 1 & 2, into deliverables addressing the more generic aspects of RTD/standards interfacing in ICT. As a first step, COPRAS developed a set of 'Generic guidelines for IST projects interfacing with ICT standards organizations'. These demonstrate the benefits of standardization to projects (and their consortium partners), and help determining whether or not an interface with standardization

should be pursued. The document pointed out the most important milestones within a project lifespan where standardization should be considered, and for example stressed the importance of interfacing with standards organizations at the beginning of a project's activities.

When first published in July 2005, the Standardization Guidelines were welcomed by the European Commission that strongly supported their distribution among projects and project consortia in IST Calls 4 and 5 of FP6. In this respect the COPRAS web site established the main dissemination tool, and the almost 60.000 hits the different versions of the guidelines received since they were first published underline their relevance to and appreciation by the ICT research and standards communities.

During the 18 months following the first publication of the Standardization Guidelines, several processes were initiated to improve the information contained in the document, as well as its accessibility. First of all, a feedback gathering process, aimed at projects in Calls 4 & 5, that had actually used the guidelines, was launched in order to determine how – and where – improvements could be made. This process was largely conducted along the same lines as the information gathering process towards Calls 1 & 2, and featured a questionnaire focusing on projects' standardization intentions, on their usage of the Standardization Guidelines, and on their overall recommendations with respect to improving the research/standards interfacing process.

Feedback received from projects in Calls 4 & 5, not only showed that the vast majority of IST projects does foresee the need to interface with standards organizations at a certain point during their lifespan, but also pointed out that the Standardization Guidelines did already have an impact. This is for example demonstrated in the graph below, showing the allocation of resources to standards activities among projects in the Calls that were addressed by COPRAS. As the charts show, while the percentage of projects that did not allocate any resources remains relatively stable in Calls 1, 2 and 4, it suddenly decreased in Call 5. As projects in this last group were the first that had the opportunity to use the Standardization Guidelines before submitting their project proposals, a positive impact can be assumed here.



The analysis of the response further showed that the vast majority of projects that received or downloaded the Standardization Guidelines actually used (or planned to use) these during the course of their work, but that improvements in a number of areas would be necessary. Moreover, the fact that, instead of the anticipated 25-30%, feedback was received from more than 40% of projects in Calls 4 & 5, reconfirmed that research/standards interfacing remains an important issue for many projects. In this respect, it was however pointed out that a single platform facilitating the cooperation between research projects and standards organizations is necessary, as are a better internal coordination between project consortium partners, and additional mechanisms within

research programmes that will enable projects to continue their standards work also beyond their lifespan.

The feedback received from projects in Calls 4 & 5, as well as feedback received from other constituencies was used to improve the Standardization Guidelines. First, in order to improve the accessibility of the information in the document, the guidelines were transformed into an interactive platform, build upon a set of Frequently Asked Questions (FAQs) on research/standards interfacing. These questions focused on specific aspects of the process, as well as on the interests of the different constituencies, so that stakeholders could easily find their way through the information.

The platform, that is available at <http://www.w3.org/2004/copras/docu/faq/Overview.html>, was put on line towards the close of the COPRAS projects, just before Christmas 2006. In conjunction with this, an upgrade of the document version of the Standardization Guidelines, addressing a number of issues emerging from the feedback gathering process, was published on the COPRAS web site.

Both the interactive platform and the upgraded document version were presented at the Open Meeting that was organized towards the end of COPRAS' lifespan. The conference, for which more than 200 participants registered, featured speakers and delegates from all constituencies and was held 17 January 2007 in Brussels. In addition to the launch of the platform, it addressed a variety of themes relating to research/standards interfacing in FP7, generated as its main conclusions:

- Standards establish a bridge between research results and the implementation of innovative products. Standardization is therefore an essential component for boosting innovation;
- The current pace of technological development forces standardization and research to proceed in parallel; starting standards activity early provides better chances for being successful;
- There are still many barriers for projects participating in standardization such as membership fees or confidentiality rules; also more tools are needed to find the right standards organization and to determine the differences between various bodies;
- Competition between standards organizations forces the latter to put more effort into marketing, specifically towards the SME community;
- Interfacing with standardization remains an important aspect in FP7. Additional measures are needed and continuation of COPRAS' efforts to bring European research and standardization closer together is a necessity to reinforce Europe's position as a leading provider of technologies for the global information society.

## 5. Evaluation of the results & impact analysis

When looking back at the work COPRAS has done and the results it managed to achieve, a first evaluation shows that the project outperformed most of the (aggressive) quantitative targets it set itself early February 2004. Standardization Action Plans were eventually developed for 13% of projects in Calls 1 & 2, considerably higher than the original target of 8-10%.

	Projects in Call	Projects addressed in WP2	Projects responding	Projects selected in WP3	Projects attending kick-off meeting	Cooperating towards Standardization Action Plans
Call 1	176	164	92	40	28	16
	100%	93%	52%	23%	16%	9%
Call 2	111	107	55	31	10	26
	100%	96%	50%	28%	9%	23%
Total	<b>287</b>	<b>271</b>	<b>147</b>	<b>71</b>	<b>38</b>	<b>38</b>
	<b>100%</b>	<b>94%</b>	<b>51%</b>	<b>25%</b>	<b>13%</b>	<b>13%</b>
Target	no target specified		> 50%	no target specified		8-10%

Moreover, in terms of the impact generated by projects, COPRAS also outperformed its target as instead of the anticipated number of 6 tangible results, already 10 projects generated demonstrable impact on ongoing standardization processes, by the time COPRAS had terminated its activities, showing the importance of research/standards interfacing in ICT



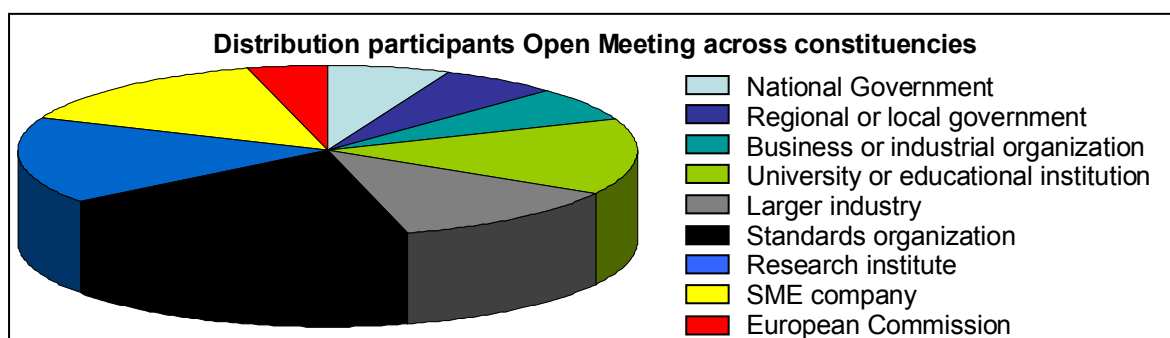
In this respect it is also important to realize that the impact COPRAS generated has not been limited to specific areas in ICT research or standardization. Standardization Action Plans involved projects across 14 out of 18 Strategic Objectives addressed, and across all instruments (STREPO, IP, NoE, CA & SSA). Moreover, they addressed standards activities in more than 20 different standards organizations on a European (e.g. CEN & ETSI) as well as on a global level (e.g. W3C, JCP, IETF, IMS or HGI), and produced technical specifications, build up new constituencies, and promoted the uptake of emerging standards through their work.

However, despite the good overall qualitative and quantitative results, analysis of projects' and standards organizations' experience also shows that projects are many times too optimistic with respect to the standards work they will be able to complete, and frequently have to adjust their plans due to lack of resources. A lower number of planned actions therefore increases the chance of a project being able to complete all of these.

With respect to the second of its objectives, COPRAS has been very successful as well. The initial distribution of the Standardization Guidelines to projects in Calls 4 & 5 already generated demonstrable impact, and the large number of hits on the COPRAS web site from visitors accessing or downloading the document shows that the information is clearly fulfilling a demand among several stakeholders to the research/standards interfacing process. The fact that the Standardization Guidelines have been upgraded and made accessible as an interactive platform as well, will expectedly increase the impact of COPRAS' results.

However despite this upgrade and the high appreciation of the Standardization Guidelines among the ICT research community, additional improvements will be necessary, and the continuous usage of the document will have to be guaranteed through maintenance and upgrade activity, for example embedded into COPRAS-type follow up activities in FP7. Moreover, also outside the scope of the project itself, additional issues will need to be addressed, such as a single and permanent platform, installed by the standards world, supporting interfacing with research projects, and additional mechanisms within EU funded research programmes that will enable projects to acquire additional resources through which to continue their standards work beyond their original lifespan.

The Open Meeting COPRAS organized towards the end of its lifespan addressed the results and deliverables COPRAS generated, and confirmed the conclusions and recommendations that had emerged from its work. The conference also underlined the importance of the research/standards interfacing process in ICT, and pointed out a number of additional areas where (coordinated) action from the standards community or the European Commission could improve processes in FP7.



The good – and balanced – attendance and valuable outcome and recommendations from the Open Meeting concluded the results of the COPRAS project. Overall conclusion here should be that the project managed to achieve even better results than it originally anticipated, but these are nevertheless not sufficient to address all research/standards interfacing issues in future research programmes. Moreover, in order to capitalize on the initial impact COPRAS generated, follow up action is necessary from all the main stakeholders involved, otherwise there is a severe risk that the first steps towards overall improvement of the research standards interface will not get any follow-up, and the initial impact will fade away.

## 6. Conclusions and recommendations

The results and deliverables that COPRAS produced clearly point out that interfacing with standardization is an increasingly important issue for IST research projects, and also underline that this is an area within research programmes where many issues still need to be addressed. These

issues range from establishing a clearer view on the benefit of standardization for a research project, up to addressing the 'standardization gap' that occurs at the end of a project's lifespan, when standards activities often cannot be continued as resources and time have run out.

Through its activities targeting individual (or clustered) projects in FP6 Calls 1 & 2, COPRAS managed to address a lot of these issues by developing Standardization Action Plans that structured projects' paths through standardization. As the analysis of the execution of these plans, as well as a set of 'case study brochures' show, this support has made an impact and did contribute to standardization deliverables becoming available that otherwise would have taken a longer time, or might not have been produced at all.

In addition, the Standardization Guidelines proved to be very supportive. Analysis not only shows that the vast majority of projects that got access to the guidelines either used them or plans to use them during the course of their activities, but it also shows a significant increase in resources allocated to standardization among those projects that could use the guidelines prior to submitting their initial proposals. However, many additional issues need to be addressed as well to improve research/standards interfacing in future Framework Programmes. Most frequently mentioned here are the fact that insufficient means currently exist for projects to complete their standards activities (specifically when the project that these activities originate from has ended), as well as the fact that the ICT standards world does not provide proper mechanisms for encouraging and facilitating research projects to initiate a cooperation process.

In addition, many different issues creating barriers were pointed out, such as confidentiality, IPR or membership of a standards organization, mapping research activities with standards work, or finding the standards and standards organizations most relevant to a project, and contacting them. Despite the fact that the (improved) Standardization Guidelines will contribute to more research output finding its way to usage in industry and society more rapidly, the guidelines will not be able to address all issues to the full 100%.

Additional COPRAS-type support activity directed at individual or clustered projects in Framework Programmes will therefore remain necessary, in addition to activities that will have to be deployed by the standards community and the European Commission, and will have to focus on offering more information on standards and standardization processes, on better marketing of the benefits of standardization (e.g. to SMEs), on addressing current barriers to participation in standards processes (e.g. membership or confidentiality rules), on enabling research projects to acquire additional resources for completing their standards work, and on developing better tools helping projects finding the standards and standards organizations that are most relevant to them.

# Annex A: Final plan for using and disseminating knowledge & results



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# Introduction

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## 1. Exploitable results and their usage

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### 1.1 Standardization Action Plans

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### 2.4 Sustainability of the main deliverables

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### **3. Publishable results**

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