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COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 3.7.2009  
COM(2009) 324 final

**WHITE PAPER**

**Modernising ICT Standardisation in the EU - The Way Forward**

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## Modernising ICT Standardisation in the EU - The Way Forward

### 1. ACHIEVING A MODERN ICT STANDARDISATION POLICY

Information and Communication Technology (ICT) is a major driver of competitiveness and represents one of the key industrial sectors of the 21<sup>st</sup> century. In 2007 the European ICT industry had a turnover of €670 bn and accounted for over 5% of total employment in the EU. European ICT needs sound framework conditions to fully contribute to the growth and jobs agenda and in this context standardisation plays an important role. Moreover, as ICT tools are used in all economic sectors, an effective EU ICT standardisation policy can encourage the faster uptake of new technologies and applications thereby contributing to the competitiveness of the European economy as a whole.

Standardisation is a voluntary cooperation among industry, consumers, public authorities and other interested parties for the development of technical specifications. Industry uses standards to meet market needs – to support its competitiveness, to ensure acceptance of innovative solutions or to increase interoperability. Public authorities refer to standards in legislation, policies and procurement to achieve societal aims for safety, interoperability, accessibility, environmental performance, etc. While industry can use any standards, public authorities have a strong preference for, or even an obligation to use standards resulting from open, transparent and inclusive processes. However, through standard referencing and use, public authorities can help drive the competitiveness of industry and facilitate competition for the benefit of consumers.

The implementation of the current EU standardisation policy<sup>1</sup>, is based on the work of the European standardisation organisations (ESOs) and their cooperation with the international standardisation organisations. It allows the Commission to invite the ESOs to undertake specific standardisation initiatives and enables the EU and the Member States to refer to European standards established by those organisations in legislation and policies. Furthermore the current legal basis on ICT standardisation recognised certain ICT specificities such as the need for interoperability and allows for some flexibility in case of referencing ICT standards in public procurement<sup>2</sup>.

The ICT standardisation landscape has dramatically changed over the last decade. Alongside the traditional standard setting organisations, specialised and mostly global fora and consortia have become more active and several have emerged as world-leading ICT standards development bodies, such as those responsible for the standards covering the internet and the world wide web. This development is not reflected in the EU standardisation policy. Fora and consortia standards cannot currently be referenced, even if they could be of benefit in helping to achieve public policy goals. Without decisive action the EU risks becoming irrelevant in

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<sup>1</sup> OJ L 204, 21.7.1998, p. 37. Directive 98/34/EC consolidated amendments on Council Directive 83/189/EEC of 28 March 1983, and was further amended by Directive 98/48/EC to cover information society services.

<sup>2</sup> Council Decision 87/95/EC (OJ L 36, 7.2.1987, p. 31.)

ICT standard setting which will take place almost entirely outside Europe, and without regard for European needs.

This analysis is largely shared by the Member States and the Council has stressed the need to make further progress in the application of standardisation to areas such as ICT, underlining that the current European standardisation system has to adapt to the needs of fast-moving markets, especially, in services and high-technology products<sup>3</sup>.

It is indeed imperative to modernise the EU ICT standardisation policy and to fully exploit the potential of standard setting. Otherwise the EU will fail to master the information society, will not realise a number of important European policy goals which require interoperability such as e-health, accessibility, security, e-business, e-government, transport, etc, and will face obstacles to being a driving force in the development and promotion of international standards for personal data protection as set out in the Communication on the Stockholm programme<sup>4</sup>.

More broadly the following policy goals need to be addressed:

- Drive innovation and competitiveness by adapting ICT standardisation policy to market and policy developments;
- Provide industry including SMEs, with high-quality ICT standards in a timely manner to ensure competitiveness in the global market while responding to societal expectations;
- Enhance the position of European ICT standardisation at global level;
- Assure consumer benefits by facilitating competition in European and international ICT markets;
- Strengthen the internal market by setting common criteria and processes for referencing ICT standards in European legislation, policies and public procurement;
- Increase the quality, coherence and consistency of ICT standards;
- Provide active support to the implementation of ICT standards.

In order to renew the European ICT standardisation policy, the Commission launched a review with a study to analyse the current EU ICT standardisation policy and bring forward recommendations for its future development. The study report was published in July 2007<sup>5</sup> and a web-based consultation followed. The comments received were published on the Europa website<sup>6</sup> and an open conference was held in February 2008<sup>7</sup> to examine the study recommendations and those comments.

As a result, it was decided to present a White Paper to ascertain the degree of consensus on the possible proposals for policy choices and specific measures that would help the European ICT standardisation policy to better respond to industry and societal needs.

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[http://www.eu2006.fi/news\\_and\\_documents/conclusions/vko50/en\\_GB/1165932111543/\\_files/76410530393686600/default/92107.pdf](http://www.eu2006.fi/news_and_documents/conclusions/vko50/en_GB/1165932111543/_files/76410530393686600/default/92107.pdf)

4 Communication: An area of freedom, security and justice serving the citizen COM(2009) 262

5 [http://ec.europa.eu/enterprise/ict/policy/standards/piper/full\\_report.pdf](http://ec.europa.eu/enterprise/ict/policy/standards/piper/full_report.pdf)

6 [http://ec.europa.eu/enterprise/ict/policy/standards/piper\\_en.htm](http://ec.europa.eu/enterprise/ict/policy/standards/piper_en.htm)

7 [http://ec.europa.eu/enterprise/ict/policy/standards/cf2008\\_en.htm](http://ec.europa.eu/enterprise/ict/policy/standards/cf2008_en.htm)

While the European ICT standardisation policy should continue to be based on the principles of voluntary and market led standardisation, technology neutrality and balance of interest, the following are the most prominent areas for improvement of the current system:

- Establish an ICT standards policy that accommodates the global dynamics and requirements of the ICT sector and reflects the varying needs of the infrastructure and application domains;
- Allow for a more integrated approach in ICT standardisation and the use of ICT standards and specifications;
- Strengthen competitiveness of industry and fair competition by fostering the implementation of standards and specifications;
- Strengthen collaboration and cooperation in ICT standards development, both Europe-wide and globally.

## **2. KEY ASPECTS OF THE MODERNISATION OF ICT STANDARDISATION IN THE EU**

### **2.1. Attributes of ICT standards associated with EU legislation and policies**

In order to facilitate the use of the best available standards in support of European legislation and policies it is necessary to lay down requirements, in the form of a list of attributes, for such standards and their associated standardisation processes. These attributes ensure that public policy objectives and societal needs are respected. The list of attributes may need further clarification however, especially concerning the IPR policies in order to accommodate emerging software developing approaches such as the open source model.

It is proposed to use the criteria developed within WTO for international standardisation organisations as the basis for the list of attributes. The close link between the WTO criteria and the attributes underpinning the European ICT standardisation policy will support free trade in compliant products, services and applications and similar criteria should be applied in by our trading partners in their approach to standardisation.

It is suggested that the following attributes, which are already observed by the ESOs as well as some fora and consortia, should always be respected in standardisation processes:

- (1) Openness: The standardisation development process occurs within a non-profit making organisation on the basis of open decision making accessible to all interested parties. The open standardisation process is driven by the relevant stakeholder categories and reflects user requirements.
- (2) Consensus: The standardisation process is collaborative and consensus based. The process does not favour any particular stakeholder.
- (3) Balance: The standardisation process is accessible at any stage of development and decision making to relevant stakeholders. Participation of all interested categories of stakeholders is sought with a view to achieving balance.
- (4) Transparency: The standardisation process is accessible to all interested parties and all information concerning technical discussions and decision making is archived and

identified. Information on (new) standardisation activities is widely announced through suitable and accessible means. Consideration and response is given to comments by interested parties.

Moreover the following attributes should be reflected in the standards themselves:

- (1) Maintenance: Ongoing support and maintenance of published standards, including swift adaptation to new developments which prove their necessity, efficiency and interoperability, is guaranteed over a long period.
- (2) Availability: Resulting standards are publicly available for implementation and use at reasonable terms (including for a reasonable fee or free of charge).
- (3) Intellectual property rights: IP essential to the implementation of standards is licensed to applicants on a (fair) reasonable and non-discriminatory basis ((F)RAND)<sup>8</sup>, which includes, at the discretion of the IPR holder, licensing essential IP without compensation.
- (4) Relevance: The standard is effective and relevant. Standards need to respond to market needs and regulatory requirements, especially when those requirements are expressed in standardisation mandates.
- (5) Neutrality and stability: Standards should whenever possible be performance oriented rather than based on design or descriptive characteristics. They should not distort the (global) market and should maintain the capacity for implementers to develop competition and innovation based upon them. Additionally, and in order to enhance their stability, standards should be based on advanced scientific and technological developments.
- (6) Quality: The quality and level of detail are sufficient to permit the development of a variety of competing implementations of interoperable products and services. Standardised interfaces are not hidden or controlled by anyone other than standard setting organisations.

(a) **The Commission suggests** that these attributes be integrated in the future ICT standardisation policy.

## 2.2. The use of ICT standards in public procurement

Referencing of standards in public procurement can be an important means of fostering innovation while providing public authorities with the tools needed to fulfil their tasks, especially in lead markets<sup>9</sup> such as e-health.

Public procurement has to comply with Directive 2004/18/EC<sup>10</sup> which differentiates between formal standards and other technical specifications, for which a description of functional requirements is additionally requested. Moreover, to allow tenders to reflect technical diversity it calls for the use of technology-neutral specifications. When public authorities refer to technical standards in their technical specifications, they should also specify whether they

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<sup>8</sup> The principle of FRAND is that all parties agree to license their intellectual property present in the respective standards on fair, reasonable and non-discriminatory terms to everyone who wishes to implement the standard. The actual licensing agreement is made between the respective owners of the IP and those who wish to implement the standard.

<sup>9</sup> Communication: A lead market initiative for Europe - COM(2007) 860.

<sup>10</sup> OJ L 134, 30.4.2004, p. 114.

allow tenderers to prove that their offer fulfils the specifications even if it does not comply with the technical standard referred to.

However, when acquiring ICT services and products, additional requirements may prevail. Public authorities need to be able to define their ICT strategies and architectures, including interoperability between organisations, and will procure ICT systems/services and products or components thereof, that meet their requirements.

Council Decision 87/95/EEC, which lays down the current EU standardisation policy in the field of ICT, recognises the specificities of the ICT domain and aims to provide guidance for public procurement of ICT systems. It emphasises the importance of interoperability and encourages reference to functional standards to achieve that objective. It also includes a provision to depart from this rule when justified. However, Council Decision 87/95/EEC is outdated since it focuses on products and not on the notion of services and applications as used today. Consequently Council Decision 87/95/EEC would have to be updated to provide public authorities with standards and specifications that meet today's needs with regard to public procurement of ICT services and applications.

Standards and specifications covering the interfaces between organisations or between ICT systems and services will, as a prime objective, need to fulfil the specific business needs of public authorities and thus implement their ICT strategies and architectures. Whenever appropriate and bearing in mind that flexibility is required to fulfil those needs, such interfaces should be defined via the referencing of technology, i.e. product and vendor-neutral standards or specifications which can be implemented by different suppliers. This ensures effective competition between bidders and thus lower prices and also makes it more likely that the resulting ICT systems will be interoperable with existing and future systems used by other public bodies or by private persons and companies.

- (b) **The Commission suggests** updating the public procurement provisions of Council Decision 87/95/EEC so that public authorities can more easily acquire ICT services, applications and products that fulfil their specific requirements and in particular an adequate level of interoperability.
- (c) **The Commission suggests** clarifying that when they are defined within the context of ICT strategies, architectures and interoperability frameworks, the implementation of standardised interfaces can be made a requirement in public procurement procedures, provided the principles of openness, fairness, objectivity and non-discrimination and the public procurement directives are applied.

### 2.3. Fostering synergy between ICT research, innovation and standardisation

Many ICT R&D projects lead to highly relevant research results. However, they are often insufficiently translated into concrete applications that can be commercialised at a later stage. Standards are one important way to promote the translation of research results into practical applications.

Initiatives to better link ICT standardisation and ICT R&D appear to be most effective when carried out at the level of the research planning phase rather than simply at the execution phase of the specific research project. Standardisation awareness thus needs to be considered

early in the research life cycle and should be an integral part of strategic research agendas developed by European Technology Platforms (ETPs).

- (d) **The Commission suggests** regularly consulting standardisation and research stakeholders, in particular ETPs, to ensure that relevant European research initiatives contribute most effectively to ICT standardisation activities.
- (e) **The Commission suggests** that standardisers adapt their procedures where necessary to ensure that contributions from research organisations, consortia and projects facilitate the timely production of ICT standards.
- (f) **The Commission suggests** that Member States consider a similar approach to any ICT R&D initiatives at national level.

#### 2.4. Intellectual property rights in ICT standards

ICT interoperability and especially software interoperability, has become critical in an ever more interconnected world. As a result IPR has an important role in standardisation in order to respect proprietary rights covering technology solutions needed for interoperability<sup>11</sup>.

In general, the European standardisation policy allows proprietary technologies, protected by IPR, to be incorporated in standards. EU competition rules provide, however, that standard setting should not lead to a restriction of competition, and ought to be based on non-discriminatory, open and transparent procedures<sup>12</sup>. Standards that are available unconditionally and can be implemented by all interested parties allow for effective competition.

There are many different IPR policies adapted to individual circumstances to be found among standards-developing organisations. In particular, software standardisation in support of interoperability requirements seems to follow its own approach. These differences do not in themselves pose a problem, provided that IPR relevant to the standard are given proper consideration in the process and policies comply with competition rules. Standard-setting policies should also be stable, predictable, transparent and effective. They should enable competition and facilitate product innovation. Openness, and easy access to standardisation processes as well as the availability of standards to all interested parties are important prerequisites to the implementation of effective IPR policies.

Stakeholders in the communication sub-sector of ICT seem to be generally content with the (F)RAND approach to the licensing of essential IP in standards. However even on that side, the increasing complexity of innovative services and applications can give rise to a multitude of essential patents resulting in a complex situation and a cumulative IPR burden in standards.

Although the (F)RAND principles can be a means to provide a fair balance between the rights of licensees and licensors, many stakeholders feel that there is room for improvement to reduce complexity and improve predictability of the licensing process. Declaration *ex-ante* of the most restrictive licensing terms, possibly including the (maximum) royalty rates before

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<sup>11</sup> See Industrial Property Rights Communication - COM(2008) 465, 16.7.2008.

<sup>12</sup> See Guidelines on the applicability of Article 81 of the EC Treaty to horizontal cooperation agreements - OJ C 3, 6.1.2001, p. 2. Any standard setting body will need to comply with these Guidelines. This White Paper does not prejudice the application of the competition rules and the Horizontal Guidelines.

adoption of a standard, may be a means of improving the effectiveness of (F)RAND licensing since this can allow for competition on both technology and price.

A majority of IT stakeholders on the other hand, especially in the software industry and among its users, are of the opinion that a more satisfactory level of interoperability can be achieved using IPR policies which could be perceived to differ from a (F)RAND approach. Several fora and consortia covering software standardisation have therefore adopted different approaches to IPR. Some, for example, require IPR in standards to be the subject of royalty-free licensing.

Finally, many SME stakeholders as well as consumer organisations support a royalty-free approach, often described as RF on (F)RAND, especially for standards which are to be referenced in legislation and policies.

While it is clear that many aspects of the treatment of IPR are covered by other policy areas, there are certain aspects of ICT standardisation with its focus on functional standards and interoperability, which make the treatment of IPR especially important and delicate in this field. Flexibility should remain however, to permit undistorted competition between different business models, including the increasingly popular open source model, whose use and implementation may be subject to conditions very different to the royalties encountered under (F)RAND.

- (g) **The Commission suggests** that ICT standards developing organisations should, subject to competition law and respecting the owner's IPR:
- implement clear, transparent and balanced IPR policies which do not discriminate and allow competition among different business models,
  - ensure the effectiveness of procedures for IPR disclosures,
  - consider a declaration of the most restrictive licensing terms, possibly including the (maximum) royalty rates before adoption of a standard as a potential route to providing more predictability and transparency.

## 2.5. Integration of fora and consortia in the ICT standardisation process

Currently the European standardisation policy restricts the referencing of standards in EU legislation and policies to standards established by the ESOs. However the ESOs are required to perform tasks and adopt working methods which can make it difficult to efficiently respond to all of the growing demands for timely standards in the fast evolving domain of ICT. The study and the subsequent consultation process demonstrated that industry has a tendency to put the scarce highly skilled technical competences needed for standardisation in many complex ICT domains into fora and consortia which can more quickly react to market demands on issues such as interoperability.

Fora and consortia have produced many relevant ICT standards, primarily in domains where the technical expertise clearly lies with specific fora and consortia and not with the ESOs. This is the case with standards covering internet protocols established by IETF and web accessibility guidelines produced by W3C. The market acceptance of the mentioned standards is undisputed. The number of standards established by industry fora and consortia with direct access to the required technical resources is growing steadily and they are often implemented

in innovative products and services. European policy should build on and benefit from the potential provided by fora and consortia.

It is expected that better cooperation with ICT fora and consortia and especially increased coordination between them and the formal standardisation organisations will reduce the risk of fragmentation, duplication and conflicting standards in the ICT domain. Slow uptake and fragmented solutions present special reasons for concern in services of major societal interest such as e-government, e-learning and e-health. The cooperation and coordination efforts will increase interoperability and thus increase market uptake of innovative solutions.

Efforts to make more use of fora and consortia work should take account of the fact that the association of standards with EU legislation and policies has a public policy dimension in addition to the purely voluntary character of the standards themselves. This explains the importance of the attributes list described above in the case of legislative referencing.

Given this reality, and in addition to closer cooperation between formal and non-formal standard-developing bodies, the direct referencing of fora and consortia standards in areas where there is clearly no risk of duplicating the scope of work of the ESOs or the formal international standardisation organisations would be the most effective way for the EU to fill specific standardisation gaps.

Recognising standards developed by fora and consortia such as IETF, W3C and OASIS would in general facilitate cooperation in ICT standardisation matters with major trading partners such as the US and such cooperation could be taken up in the framework of the Transatlantic Economic Council.

While reaffirming the appropriateness of harmonised standards in areas covered at present by the new approach, public authorities should have the possibility, provided the right conditions are fulfilled, to depart from the general rule of referencing formal ESO standards. To that end the Commission could put in place a suitable procedure to enable the referencing of specific fora and consortia standards in legislation and policies.

- (h) **The Commission suggests** enabling the referencing of specific fora and consortia standards in relevant EU legislation and policies subject to a positive evaluation of the standard and the forum or consortium processes with regard to the attributes list as described in Chapter 2.1.
- (i) **The Commission suggests** promoting better cooperation between fora and consortia and ESOs on the basis of a process which would lead to standards issued by the ESOs.

## 2.6. Enhancing dialogue and partnership with stakeholders

Council Decision 87/95/EEC foresees a Committee, the Senior Officials group on standardisation in the field of Information Technology (SOGITS), to assist the Commission in managing the Decision. Its composition is limited to Member States, although representatives of the ESOs have observer status and SOGITS has the possibility of inviting experts to discuss specific issues. However, the wider aspects of ICT standardisation policy, including priority setting, the use of standardisation work from other sources as well as the coherence between the ICT standardisation policy and other policies making use of ICT standards, are

largely outside the scope of SOGITS. Therefore, SOGITS only had a limited success in the past.

The Commission believes that SOGITS should be superseded by a platform representing all the stakeholders concerned. Such a platform should ensure a more coherent, transparent and consistent ICT standardisation policy thus facilitating the development of high-quality ICT standards. It should also provide the Commission and the Member States with expert advice on matters concerning ICT standardisation policy and its implementation, such as:

- providing advice on the Commission's annual ICT standardisation work programme and its priorities
- early identification of ICT standardisation needs in support of new EU legal frameworks and policies
- discussing possible mandates to ESOs and other organisations involved in developing ICT specifications
- monitoring and reviewing ICT standardisation matters in support of new EU legal frameworks and policies during their execution
- examining the application of the attributes list with regard to fora and consortia processes and standards
- identifying relevant fora and consortia and defining their role to improve the integration of their work in European ICT standardisation
- collecting of information concerning the work programmes of participating organisations and possibly, national ICT related standardisation activities.

This dialogue should allow the Member States and the Commission to discuss matters within their specific responsibilities while also allowing discussion with the wider circle of stakeholders from standards organisations, including fora and consortia, industry, SMEs, consumers, etc.

Furthermore, the stakeholders' platform should be complemented by a structure building on the current ICT standards board (ICTSB) to coordinate the standardisation activities of ESOs and fora and consortia in response to its policy orientations. The ICTSB's main task will be to monitor and coordinate the standards development activities among the relevant standard setting organisations in response to the policy guidelines set by the stakeholders' platform.

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| <p>(j) <b>The Commission suggests</b> the establishment of a permanent, multi-stakeholder, ICT standardisation policy platform (with a wider membership than the Member State SOGITS Committee previously established by Council Decision 87/95/EEC) to advise the Commission on all matters related to the European ICT standardisation policy and its effective implementation.</p> <p>(k) <b>The Commission suggests</b> inviting the ESOs and other ICT standard developing organisations to review the function and composition of the current ICTSB to make it more efficient.</p> |
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### 3. NEXT STEPS

In publishing this White Paper, the Commission is inviting comments from all interested parties, especially on the suggestions made for further actions. As indicated in the above chapters, these suggestions focus on possible non-legislative measures and on measures which can be implemented by updating Council Decision 87/95/EEC.

In parallel, a broad review of the current European standardisation system has recently been initiated. The Commission has charged an independent Expert Panel to prepare strategic recommendations for the review of the overall European standardisation system by the end of 2009. The proposals in relation to the ICT standardisation policy outlined in this White Paper will be taken into account in the work of the Expert Panel.

In the light of the outcome of the ongoing general policy review and following the public consultation undertaken by this White Paper, the Commission envisages presenting in 2010, any necessary policy and legislative proposals.

The Commission invites comments on this White Paper, and especially on the boxed suggestions. They may be sent, by 15 September 2009, preferably via 'Your Voice in Europe' [http://ec.europa.eu/yourvoice/consultations/index\\_en.htm#open](http://ec.europa.eu/yourvoice/consultations/index_en.htm#open),

or by e-mail to: ENTR-ICT-STANDARDISATION@ec.europa.eu

or by post to:

Modernising ICT Standardisation Policy in the EU: the Way Forward (ENTR/D/4)  
European Commission – BREY 6/60  
B-1049 Brussels.

Unless you are responding as an individual, please indicate the name and nature of the organisation you represent. Companies responding should in addition provide details of their size in terms of number of employees as well as indicating whether they are primarily ICT product providers, ICT service providers or ICT product or service users.

DG Enterprise and Industry will publish your submission on the World-Wide Web ([http://ec.europa.eu/enterprise/ict/policy/standards/ict\\_index\\_en.htm](http://ec.europa.eu/enterprise/ict/policy/standards/ict_index_en.htm)). Please read the specific privacy statement attached to the consultation for information on how your personal data and contribution will be dealt with. Professional organisations are invited to register in the Commission's Register for Interest Representatives (<http://ec.europa.eu/transparency/regrin/>) set up in the framework of the European Transparency Initiative with a view to providing the Commission and the public at large with information about the objectives, funding and structures of interest representatives.