



# **Interim Activity Report**

## **NO-REST**

**Deliverable 3**

**First Project Review Report**

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**Organisation name of lead contractor for this deliverable: Fraunhofer-Institut ISI**

## **1. Introduction**

This first interim activity report of NO-REST reports the most important activities in the different work packages, the dissemination activities and important steps in the project management. It covers the first eight months of the NO-REST project.

The interim activity report is structured as follows. At first, we present brief descriptions of the work been done in the work packages and preliminary outputs. Then we list the dissemination activities from webpage, to newsletter and the numerous presentations at different conferences and workshops. The interim report closes with a brief overview of the project management.

## 2. Summary of WP1 Standards' Interactions with their Environments

The main objective of Work Package 1 is to construct a framework in which all of the factors that affect the standardisation process can be visualised and the interactions between them documented in a systematic way. In effect, WP1 describes the commercial and organisational environment in which standardisation takes place. The partners engaged in WP1 are TNO-STB, Fraunhofer ISI and the University of Edinburgh.

WP1 is examining the standardisation environment in the context of 'business models' – which in our definition refer to the commercial and organisational topologies of key product and service areas for which standards are relevant. This includes consideration of the business models of standards development organisations and consortia. The aim is to investigate the consistency and/or variance of business models between stakeholders and to indicate the implications in terms of demand for standardisation.

WP1 is exploring the socio-economic conditions and forces that will motivate the process of adopting, adapting, revising and replacing standards. WP1 work contributes to a better understanding of the emerging dynamics of demand, which can come from both ICT producers and users.

The WP1 tasks originally scheduled for the first half of the NO-REST project are now complete or nearing completion.

Draft versions of two significant core papers are now complete:

- ***Business models and the standardisation process*** has been prepared by TNO-STB to set out the theoretical basis for interpreting standardisation dynamics in their commercial and organisational contexts.
- ***The demand for standards of companies active in e-commerce*** has been prepared by Fraunhofer ISI (based upon existing data) in order to underpin the theory of standards demand with empirical data.

In addition, a paper examining taxonomical issues in standardisation is nearing completion at the University of Edinburgh.

Part of the empirical component of WP1, which aims to isolate examples of how various business model configurations affect the supply-demand relationship for standards, has been rescheduled because of the development of an impact assessment framework. Now, the case studies in WP1 can contribute more easily to the implementation of this new impact assessment framework.

### 3. Summary of WP2 Standards Setting Bodies' Adaptability

Today, a broad variety of different organisations are active in standards setting in the ICT<sup>1</sup> domain. In addition to the 'traditional' accredited SDOs<sup>2</sup> (like, e.g., ISO, CEN, or, albeit somewhat less 'traditional', ETSI), these include primarily consortia (e.g., the World Wide Web Consortium, W3C), and industry fora (such as, for example, the Wireless World Research Forum, WWRF).

Yet, even within each of these categories organisations differ widely in terms of, among other aspects, overall goals, sectors of activity, membership, business models, and liaisons. Additional differences may be observed in the respective standards setting processes, with respect to, for instance, the required level of consensus, the observation of due process, and the equality of their members. Moreover, membership is free in some organisations, while others charge fees. Also, individual members of the working groups or committees may (have to) act in different capacities, e.g. as national or corporate representatives, or as individual experts.

Among other issues, this diversity represents a problem for individuals and companies wishing to initiate a standards setting activity. The question they need to address basically is 'Which organisation suits my needs best?'. In an attempt to help these would-be standards setters, WP2 has identified a set of characteristics to describe Standards Setting Bodies (SSBs). These characteristics have been used for a multi-dimensional classification of SSBs, which goes well beyond the typical distinction between SDOs, consortia, and fora.

To complement this description, three different categories of prospective participants in a standardisation activity were identified, and their respective high-level needs and requirements on an SSB were characterised:

- 'Leaders'

They aim to control the strategy and direction of a consortium or an SDO' committee. Large vendors, manufacturers, and service providers are typical representatives of this class.

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<sup>1</sup> Information and Communication Technologies.

<sup>2</sup> Standards Developing Organisations.

- 'Adopters'

Adopters are more interested in influencing individual standards, rather than the strategic direction and goals of a consortium or an SDO's committee. Large users, SME vendors, and manufacturers may typically be found here.

- 'Observers'

Their main motivation for participation is intelligence gathering. Typically, this group comprises, for instance, academics, consultants and system integrators.

Subsequently, the identified demands and requirements the members of each respective category have were mapped onto the SSBs' characteristics. This resulted in a set of questions prospective standards setters should ask themselves in order to identify the SSB most suitable for a given proposed standards setting activity.

In addition, a study is under way to learn more about the perceived 'credibility' of SSBs. For instance, common wisdom had it that the outcome of the formal SDOs' process is of 'higher value' than the outcome of an industry consortium. But is this correct? That is, among other things this 'credibility study' aims at finding out any relations that may exist between the source of a standard and its perceived relevance or value.

## **4. Summary of WP3 Dynamics of Standards**

A main tenet of the NO-REST project is that standards are not static, as most literature would have it, but dynamic. Our assumption is that the tenet of standard dynamics needs to be reflected in standards impact analyses (WP4). Therefore, the aim of work package 3 is 1) to acquire insight in the state of standards dynamics, that is in the overall stability of standards, and 2) to understand the causes of standards dynamics. One of these causes, namely problems of standard implementation, is addressed separately.

At present, apart from a scan of standardisation and innovation literature on standards dynamics, the project members contributing to Work package 3 are laying the last hand at drafting their case studies. The cases range from committee standards of formal standards bodies and consortia to de facto standards - a variety which promises to highlight different aspects of dynamics. The (de facto) standards cases, which serve to identify and localise causes of standards dynamics, include X.400/ X.500, IEEE 802.11, recordable DVD, Symbian, Parlay, IP, RFID, standards for grid computing, SGML and XML. The results of a first attempt at integrating these case findings will be presented at the November Workshop in Brussels. Ultimately the aim of this WP is to develop a heuristic model for the dynamic evolution of standards (i.e. a deliverable planned for May 2005). Moreover, two quantitative studies are underway that promise to shed light on the overall stability of formal standards (PERINORM database, JTC1 database). More information will be provided at a later stage of research.

## 5. Summary of WP4 Impact Assessment

Based on the insights of the WP 1-3 WP is devoted to develop methods and tools to assess the impacts of ICT standards on both private and public networking organisations at the micro-level and their comprehensive impact on the systems or macro-level. In a first step, the state of the art was screen and relevant impact dimensions were identified. In a second step we are currently designing assessment tools for ex post and ex ante impact assessments, respectively. Finally, we have already selected appropriate examples to perform an impact assessment in practice. The feasibility, methods and results of the performed impact assessments will eventually be evaluated. Based on these experiences, final guidelines for tools for an impact assessment will be proposed and distributed among the relevant stakeholders in standardisation processes.

### **The State of the Art in Standards Impact Assessment**

In contrast to the long tradition of assessing the impact of R&D policies and of governmental regulations – at least in the United States – we observe based on literature reviews and expert interviews so far very little activities with respect to standards, including ICT standards. On the macro- and sector level, we observe within the last ten years several exercises to assess the impact of the whole stock of standards on growth, trade and innovation. In contrast to these very general assessments, there are several case studies analysing especially ICT standards, but with a stronger focus on their emergence than on their impacts. Finally, a few company surveys were performed which intended either to identify the future demand for standards, but which aimed also to assess the general impacts of standards. In general, the impact assessment of standards in general, but also of ICT related standards is underdeveloped.

This shortage is even more challenging, since standards have manifold impact dimensions, which require both more sophisticated assessment methodologies and probably an intelligent combination of methodologies. The following list covers the most relevant impact dimensions of standards (source: Tassely 2003):

- Investment in R&D
- Innovation
- Market access
- Time to market (industry cycle times by anticipatory standards)
- Success and diffusion of new technology (e.g. by building critical masses)

- Productivity (e.g. economies of scale)
- Product quality (incl. risk and safety aspects)
- Product and system reliability
- Interoperability
- Transaction costs (information costs, performance verification)

### **Possible Methodologies to Assess the Impacts of Standards**

Since the lack of well developed and tested methodologies to assess the impacts of standards, we had to look for orientation in the tool boxes for RTD evaluation and regulatory impact assessment. Based on the literature we identified the following nine methodologies and adapted them to the needs of impact assessments for standards:

- Surveys
- Econometric models
- Control group approaches
- Cost benefit analysis
- Expert panels
- Case studies
- Network Analysis
- Foresight studies
- Benchmarking

All these methodologies have general weaknesses and strengths, but they are also to a different degree applicable to ex ante or ex post impact assessments and to the above listed impact dimensions. Therefore one can already recommend a priori that depending on these intentions, but also on the respective technology or market, the selection of a specific methodology or even better a combination of complementary methodologies.

### **Implementation and Validation of Impact Assessment Methodologies**

The second part of WP 4 on impact will be devoted to implementation of the different methodologies. Within the framework of a survey among the members of ETSI most of the impact dimensions will be covered. In addition, data will be collected which allows

the performance of a control group approach and of small cost benefit analysis. Within the case studies of WP 3 the impact of the analysed standards will also be covered. Furthermore, the one or other case studies allows some benchmarking-like exercise and even a small scale network analysis. A foresight study in form of a Delphi study was already performed in the context of a forecasting workshop on telecommunication hosted by the ITU (International Telecommunications Union). Based on OECD data and stocks of ICT standards, we will investigate within an econometric model the impact of standards on growth. Consequently, we will have with the completion of NO-REST a much better idea what impact assessment methodology works in which respect.

In addition to the development of single impact assessment methodologies, TNO-STB and Fraunhofer ISI have co-operated intensively during October to construct a prototype of an impact assessment framework. This provides a platform for the integration of the various impact assessment methodologies into the standards environment model.

## 6. Dissemination Activities

From the very beginning of the project start a web-page [www.no-rest.org](http://www.no-rest.org) was set up, which is administered by ETSI. The project page contains all necessary information about the partners, the work packages, events and presentations.

In July 2004, the first edition of the project newsletter was published and distributed within mailing lists. The second edition is going to be finished in November 2004.

### Workshops:

- Session on 'Incompatibility of Standards Implementations - Exploring the Problem' at the EASST / 4S Conference 2004, Paris, August 25-28, 2004 organised by Tineke Egyedi and Kai Jakobs.
- Session on 'ICT Standards Setting and the Social Sciences', at the EASST / 4S Conference 2004, Paris, August 25-28, 2004 organised by Kai Jakobs.
- Workshop 'IT Standards – the Basis of the Information Society', organised for INFORMATIK 2004 – the annual conference of the German 'Gesellschaft für Informatik', in Ulm by Kai Jakobs.
- Workshop on 'Standards and Standardisation for e-business' at echallenges 2004, Vienna, October 27-29, 2004 organised by Kai Jakobs

### Upcoming workshops

- NO-REST Workshop 'Towards an Impact Assessment of Standards' at CEN, Brussels, November 25, 2004
- Workshop on 'Interoperability Standards – Implementation, Dynamics, and Impact' in conjunction with the Interop-ESA conference on Interoperability of Enterprise Software and Applications, Geneva February 21-25, 2005 organised by Kai Jakobs.

### Presentations:

- Blind, K.: Standards and Trade: Theory and Evidence, presentation at EU-Asia Link meeting, Helmut-Schmidt-Universität, Hamburg, 16<sup>th</sup> of August 2004
- Blind, K.: Participation in Standardisation and Open Source Development: Empirical Evidence from Germany, presentation at INFORMATIK 2004 – the annual conference of the German 'Gesellschaft für Informatik', in Ulm, 21<sup>st</sup> of September 2004.
- Blind, K.: The Economic Impact of Standardisation: Theory, Methods and Evidence, presentation at Standardisation Workshop organised by the Danish Standardisation Institute, in Copenhagen, 24<sup>th</sup> of September 2004
- Blind, K.: The Delphi methodology and other impact assessment methodologies: Opportunities and challenges for standardisation and regulation bodies in the telecommunication sector, at an Expert Workshop on "Adjusting Forecasting Methods to the Needs of the Telecommunication Sector" at International Telecommunication Union, in Geneva, 25<sup>th</sup> October 2004
- Blind, K.: A Taxonomy of Service Standards and a Modification for E-Business, at echallenges 2004, Vienna, 29<sup>th</sup> of October 2004
- Egyedi, T.: Standards Dynamics, presentation at EU-Asia Link meeting Helmut-Schmidt-Universität, Hamburg, Germany, 17<sup>th</sup> August 2004
- Egyedi, T.: Difficulties Implementing Standards: Steps in a research programme, presentation at EASST conference, Paris, 27<sup>th</sup> August 2004

- Gerst, M.: The Social Shaping of Networks in the Automotive Industry: Tensions between Automation and Flexibility, presentation at EASST conference, Paris, 27<sup>th</sup> August 2004
- Gerst, M.: The Implementation of a Supplier Portal in the Automotive Industry – Standardisation from a SME perspective, presentation at INFORMATIK 2004 – the annual conference of the German ‘Gesellschaft für Informatik’, in Ulm, 21<sup>st</sup> of September 2004
- Gerst, M.: The Adoption of Standardised Technology in the Automotive Industry, presentation at e-challenges 2004, Vienna, 28<sup>th</sup> October 2004
- Hawkins, R.: The evolving relationship between formal and informal standardisation. Presented at the Workshop of the EU’s ASIA-Link Project ‘Development of a Curriculum for Standardisation in Companies and Markets’, Hamburg, Germany, August 2004
- Jakobs, K.: ‘Shaping ICT Standardisation’. Presented at the Workshop of the EU’s ASIA-Link Project ‘Development of a Curriculum for Standardisation in Companies and Markets’, Hamburg, Germany, August 2004
- Jakobs, K.: ‘The Third Estate - The Role of SMEs in ICT Standards Setting’, at e-challenges 2004, Vienna, 29<sup>th</sup> of October 2004

**Publications:**

- Blind, K.: A Taxonomy of Service Standards and a Modification for E-Business, in: eAdoption and the Knowledge Economy: Issues, Applications, Case Studies edited by Paul Cunningham and Miriam Cunningham, IOS Press, Amsterdam, pp. 264-270.
- Jakobs, K.: ‘The Third Estate - The Role of SMEs in ICT Standards Setting’, in: eAdoption and the Knowledge Economy: Issues, Applications, Case Studies edited by Paul Cunningham and Miriam Cunningham, IOS Press, Amsterdam, pp. 241-248.
- Jakobs, K.: ‘Shaping Future ICT Systems Through Today’s Standards Setting’. Proc. UKAIS 2004, Glasgow.
- Jakobs, K.: ‘Some Socio-Technical Issues in ICT Standards Setting’. Proc. Workshop on Understanding Sociotechnical Action, Edinburgh, 2004.

## 7. Project Management

Regarding the project management we have to report that the project coordination group (PCG) met three times. At the first meeting hosted by TU Delft between the 18<sup>th</sup> and 19<sup>th</sup> of March, the WP leaders were nominated. WP 1 is managed by Richard Hawkins (TNO-STB), WP 2 by Kai Jakobs (RWTH Aachen), WP 3 by Tineke Egyedi (TU Delft) and WP 4 by Knut Blind (FhG-ISI). This meeting served mainly for clarifying the WPs, the different tasks and further steps. Almost all members of the PCG met during the annual workshop of the European Research Academy for Standardisation EURAS in Paris for an interim meeting to discuss recent issues. At the second official PCG meeting taking place in Oslo from the 5<sup>th</sup> and 6<sup>th</sup> of July, first results of the different WPs were presented and first dissemination activities including the first interim workshop planned. The third meeting of the PCG was hosted by Fraunhofer ISI in Karlsruhe from the 7<sup>th</sup> to the 8<sup>th</sup> of October. Besides reporting further progress within the different WPs, the upcoming interim workshop was prepared regarding the content which will be presented. Furthermore, the survey among the ETSI members, which is relevant for all WPs was discussed based on a set of hypotheses and a first draft of the questionnaire.

In addition to the PCG meetings several bilateral meetings took place within the different WPs. Richard Hawkins from TNO-STB spent even two weeks in October at Fraunhofer ISI in order to develop a common comprehensive framework for standards impact assessment and the questionnaire for the ETSI survey. Kai Jakobs spent several days at the University of Edinburgh to clarify the linkages between WP1 and WP2 as well as WP3.

NO-REST was also present at the third coordination workshop "ICT for Business" cluster meeting of e-business projects on the 26<sup>th</sup> of April 2004 to discuss the update of the relevant parts of work programme of the IST priority. Finally, NO-REST participants are involved in the European e-Business Interoperability Forum organised by CEN/ISSS, which are developing first steps towards standards in the e-business area.