DI1.7c: Promotion of PROMISE Standards

Ajith Parlikad, Cambridge
David Potter, INDYON
Dimitris Kiritsis, EPFL
Jacopo Cassina, POLIMI

DELIVERABLE NO	DI1.7c: Promotion of PROMISE standards
DISSEMINATION LEVEL	**PUBLIC**
DATE	30 April 2008
WORK PACKAGE NO	WP I1: Standardisation
VERSION NO.	0.3
ELECTRONIC FILE CODE	promise di1 7c promotion of promise standards.doc
CONTRACT NO	507100 PROMISE A Project of the 6th Framework Programme Information Society Technologies (IST)
ABSTRACT	This deliverable presents the final status on the activities related to the promotion of PROMISE standards, outlining the different standards bodies approached, and the progress made with each. In addition, the deliverable also discusses ways in which PROMISE standards adoption could proceed after completion of the project.

STATUS OF DELIVERABLE		
ACTION	**BY**	**DATE** (dd.mm.yyyy)
SUBMITTED (author(s))	Ajith Parlikad	30.04.2008
VU (WP Leader)	Ajith Parlikad	30.04.2008
APPROVED (QIM)	Dimitris Kiritsis	02.05.2008

Revision History

Date (dd.mm.yyyy)	Version	Author	Comments
23.04.2008	0.1	A. Parlikad	First Draft
30.04.2008	0.2	A. Parlikad	Second draft
13.05.2008	0.3	A. Parlikad	Submitted for quality review

Author(s)' contact information

Name	Organisation	E-mail	Tel	Fax
Ajith Parlikad	Cambridge University	aknp2@cam.ac.uk	441223765606	441223765606
Jacopo Cassina	Polimi	jacopo.cassina@polimi.it	390223993951	390223992700
David Potter	Indyon	david.potter@indyon.de	442392345152	442392592327
Dimitris Kiritsis	EPFL	Dimitris.kiritsis@epfl.ch	41216935163	

Table of Contents

List of figures

List of Tables

Abbreviations
PMI: PROMISE Messaging Interface
PDKM: Product Data Knowledge Management
PLCS: Product Life Cycle Support
ISO: International Standards Organisation
OMG: Object Management Group
EPCIS: Electronic Product Code Information Services
NIST: National Institute of Standards and Technology
OASIS: Organization for the Advancement of Structured Information Standards
CEN: European Committee for standardisation
BSI: British Standards Institute
IETF: Intenet Engineering Task Force

1   Introduction

This report presents the final status of activities related to the promotion of standards arising from the PROMISE project. As mentioned in previous reports, the overall goal for PROMISE work package I1 is to ensure that there is an open channel for the continuing promotion and acceptance of key elements of the standards (or set of standards) and interfaces defined during the PROMISE project.

In accordance to the recommendations made by the EU Commission reviewers at the review meeting in January 2007, deliverable DI1.7a [1] had presented an action plan for standards promotion, which focussed on three key avenues: (i) standards bodies, (ii) academic and industrial conferences, and (iii) IRG. Furthermore, in deliverable DI1.7b we presented an update on the activities related to the promotion of PROMISE standards, outlining the different standards bodies approached, and the progress made with each. The key standards bodies targeted for promotion were the Open Group, OASIS, EPC Global, NIST, CEN, and BSI.

This report is structured as follows: Section 2 provides an overview of standards promotion activities planned by PROMISE. In section 3, we provide an update on the progress made with various standards bodies and discuss plans for continued collaboration. Section 4 summarises our views on standardisation activities beyond M42, and finally Section 5 concludes the report.

2   Overview of PROMISE Standardisation activities

PROMISE devised a three-prong approach for promoting standards specifications resulting from the project (see Figure 1):

1. Promotion through standards bodies

2. Promotion through academic and industrial conferences

3. Promotion through the Industrial Reference Group (IRG)

The development and refinement of PROMISE standards specifications has been done by the group of partners involved in workpackages I1 and R12. Progress in refinement and documentation of architecture specifications as outlined in DI1.6c [2] will be critical for the success of any standards-related activities.

The primary focus of PROMISE standards promotion efforts was on the different relevant standards bodies. This is due to the realisation that awareness of PROMISE architecture specifications within these standards bodies is key for the specifications to have a chance to become industry-accepted standards. In this direction, the I1 partners identified a number of important standards bodies to focus efforts in previous deliverables DI1.7a [1] and DI1.7b [3]. In addition to the standards bodies, promotion will also be carried out by presenting papers related to PROMISE at academic conferences (reported in I2 deliverables), and also by creating awareness about the standards specifications within the Industrial Reference Group (IRG). For instance, a paper on *Development of PROMISE Architecture and PDKM Semantic Object Model* was

submitted recently by POLIMI, Cambridge, and INDYON to the International Conference on Concurrent Enterprising (Lisbon, June 2008).
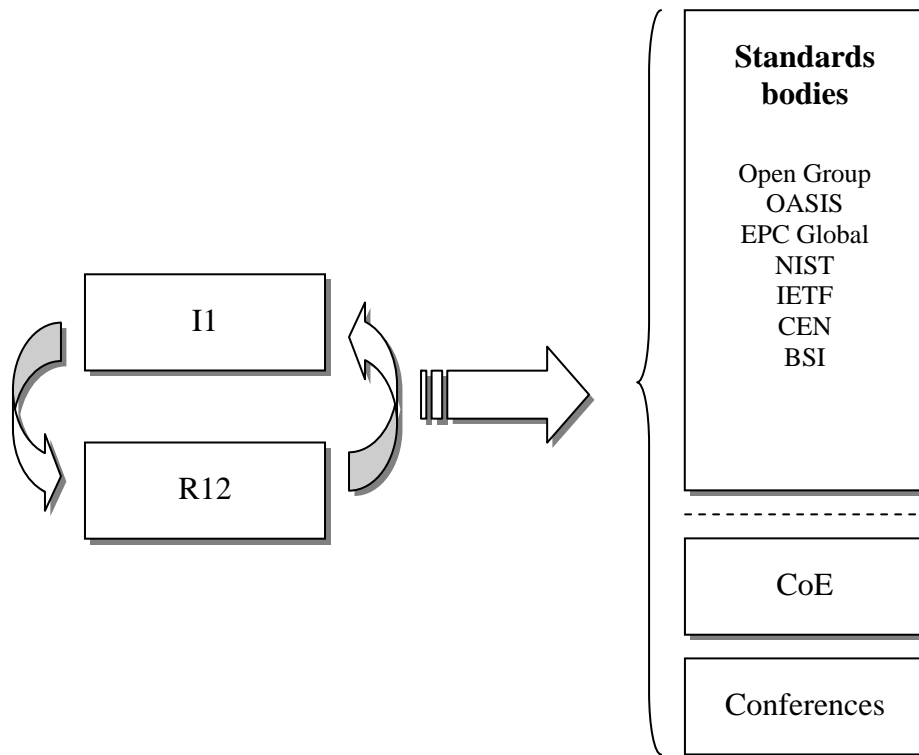

Figure 1: PROMISE standards promotion action plan

We will now specifically discuss the progress made in terms of the promotion through standards bodies.

3 Promotion through standards bodies

In the last six months, I1 partners have been involved in discussions with the Open Group, OASIS, EPCglobal, NIST, CEN, and BSI. We shall now provide an update regarding each standards body in turn.

3.1 The Open Group

The Open Group is largely a federation of semi-autonomous forums that enable their members to guide development and adoption of industry directives and standards.

As mentioned in DI1.7b, the PROMISE architecture and a proposal for standards development based on the architecture specifications was presented at the Open Group Architectures Forum meeting held at Austin, TX in July 2007.

Following a strong recommendation from the Architecture Forum for Open Group to support the proposal, the Open Group CEO met with PROMISE partners at Cambridge in December 2007 to discuss the modus of operandi. As an outcome of this meeting, Cambridge and INDYON attended

the Open Group member meeting at Glasgow on 23rd April 2008, and presented our proposal for standards development to the Open Group Board members.

As a response to this presentation, Open Group has decided to support our activities through the Open Group's Consortia Services group (http://www.opengroup.org/consortia_services/). This group focuses on helping the formation of organizations under the umbrella of The Open Group. In fact, they have indicated that they would provide the project partners with free use of a web-based collaborative toolset for some limited amount of time to allow us to collaborate whilst working on the decisions of how best to make further progress.

At the time of writing this deliverable, PROMISE standards partners are discussing possible steps forward. An update on this activity shall be presented at the final review meeting in Athens.

3.2   Organization for the Advancement of Structured Information Standards (OASIS)

OASIS (Organization for the Advancement of Structured Information Standards) is a not-for-profit, international consortium that drives the development, convergence, and adoption of e-business standards.

To foster the discussion with this community, which is one of the most promising for the promotion of the PDKM as a basis of a standard, we have developed a draft translation of the PDKM SOM to EXPRESS, which is the data-modelling language used in STEP. PDKM has already strong links to STEP since it was considered during its development, so most of the SOM classes are similar to STEP Integrated Resources. Using the common features between STEP's Integrate Resources (IRs) and PDKM SOM classes, it is feasible to start working together with the STEP community to use the PDKM SOM as the foundation for an Application Protocol (AP). An AP is, basically, a data model for a specific industrial domain (PLCS is one of the AP of STEP). These activities are described in more detail in DI1.6c.

3.3   EPCglobal

EPCglobal is a subsidiary of GS1 (previously EAN (European Article Numbering) in Europe and UCC (Universal Code Council) in America).

As mentioned in DI1.7a, EPCglobal has ratified the EPC Information Services (EPCIS) standard, which plays a similar role as that of the PMI. An evaluation of the EPC Network against the requirements of PLM was presented in DI1.6b [4]. There will be ongoing discussions between PROMISE and EPC Network facilitated by a regular RFID Architectures Workshop series organised by Cambridge University.

3.4   National Institute of Standards and Technology (NIST)

NIST (http://www.nist.gov) is a non-regulatory federal agency within the U.S. Commerce Department's Technology Administration. NIST's mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology.

With the Polimi/SINTEF joint initiative, PROMISE, NIST was informed of the PROMISE project and initiative, and also provided with the needed links to documents concerning PROMISE.

However, after repeated efforts to engage with NIST, there was a lack of formal response, which has hampered progress in this direction.

3.5   European Committee for Standardisation (CEN)

CEN, the European Committee for standardisation focuses on the development of "…voluntary technical standards which promote free trade, the safety of workers and consumers, interoperability of networks, environmental protection, exploitation of research and development programmes, and public procurement".

The CEN officials were informed of the PROMISE project and standards by POLIMI at the Third International Conference on Maintenance and Facility Management (MM2007) in Rome, and were subsequently sent additional material describing the proposed standards. CEN researchers have expressed interest in supporting the standardisation activity by a workshop with CEN on PROMISE, which could be a starting point for development. However, this has to proceed with care to ensure parallel activities with other standards bodies (e.g., PLCS) do not hamper future standardisation efforts.

3.6   British Standards Institute (BSI)

British Standards Institute is the UK's National Standards Body and was the world's first such organisation.

Discussions with BSI were initiated at the launch meeting of the Automatic Identification and Data Capture (AIDC) Centre of Excellence, where BSI expressed interest in supporting PROMISE standards activities, probably by promoting our standards submissions as a PAS (Publicly Available Specification).

BSI and Cambridge had further discussions in December 2007, where the BSI project director expressed interest and offered support to develop PLM standards on the basis of PROMISE results. In order to develop a PAS, an working group consisting of at least five interested parties had to be set up with an initial investment of £50,000. It was decided by the PROMISE Management Group that this investment was unaffordable to the project, and hence was dropped. However, this would not prevent re-initiating this activity with BSI in future if project partners (or others) feel that the investment can be justified. The important thing here is that these discussions have helped promote PROMISE results to relevant standards bodies.

3.7   Internet Engineering Task Force (IETF)

The Internet Engineering Task Force (IETF) is a large open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet.

Large-scale and eventually global deployment of the PROMISE architecture and technologies requires the availability of Internet-based discovery services which can deal comfortably with the discovery of individual or groups of information items. For this reason the PROMISE Standardisation partners have become involved with the early proposals for the formation of a new Working Group within the Internet Engineering Task Force (IETF) that is focussed on the definition of and then eventual implementation of appropriate discovery services.

The current, so-called "Extended Supply-chain Discovery Services" forum of the IETF is being supported by the PROMISE partners Cambridge, HUT, INDYON and Trackway, together with Promise Innovation, in the creation of a charter and problem statement which should lead to the approval for the creation of a formal IETF Working Group following the 73rd IETF meeting (Dublin, 27/7-1/8/2008). We see continued participation in this group to be a fundamental enabler for the long-term future and acceptance of PROMISE.

4 Standardisation activities beyond PROMISE

PROMISE architecture specifications and proposals for standards arising from them have been evaluated and refined continuously in order to increase popularity and therefore the possibility of widespread adoption (refer to DI1.6 series of deliverables for more details).

Following the conclusion of the PROMISE project the following activities are expected to be carried out:

o **The standardisation work for the PDKM SOM and the PMI**

   The PROMISE standardisation work will be coordinated in the future by PROMISE Innovation. The foundation for the standardisation activities going forward have already being laid out in Architecture Series: Volume 1: Architecture Overview; Volume 3: PROMISE Messaging Interface (PMI) and Data Services Concepts; and Volume 4: PROMISE PDKM System Object Model and Interfaces. Please refer to DI1.6c [2] for a detailed description of these activities.

o We continue to seek the correct channel for promotion of the PMI, and are continuing discussions with the Open Group in this connection. Further work is required to link more strongly the semantics of the PDKM SOM and the PMI data structures and, in the longer term, large scale implementation will depend upon more sophisticated information discovery services becoming available on the Internet. For this reason Cambridge and Promise Innovation are already involved in early discussions with the Internet Engineering Task Force (IETF) regarding the establishment of a Working Group to define and develop the necessary discovery service standards and infrastructure.

o **Development of an open source PROMISE information architecture**

   The current open source implementation of PDKM SOM will be extended to support data analysis functionalities such as that given by the DSS as well as middleware services and support for PMI 3.0. The open source implementation will serve as a great opportunity for exploiting the semantic data model in a more easily reusable implementation solution, covering the needs of both academic/research and industrial partners. The open source implementation will also be leveraged by PROMISE innovation for their commercialisation activities. It will also serve to allow wider industrial adoption of the standard without getting locked into proprietary software and technologies.

5   Summary

This report outlines the key activities in terms of promoting PROMISE standards. In particular, we discussed the progress made so far in promoting PROMISE architecture specifications with various standards bodies.

Throughout its lifetime, the PROMISE project has taken great care to take advantage of existing standards and avoid duplication of standards or creation of competitive standards. As a result of the research and development undertaken during the PROMISE project, two candidates for standards submission have been identified:

1. The PROMISE Messaging Interface, or PMI, and
2. The PROMISE Product Data and Knowledge Management (PDKM) System Object Model (SOM).

The PROMISE Project Consortium has been actively pursuing the promotion of these candidate standards specifications during the lifetime of the EU-funded project. After that time, this work will be continued by PROMISE-Innovation's European Centre of Excellence for Closed-loop Lifecycle Management, which is being established to further the results of PROMISE working together with other motivated partners from the project consortium.

There are 3 parallel standards initiatives that could be followed after the end of the project:

- Advancing the development of the PROMISE PDKM SOM in collaboration with ISO (through Norman Swindells and other ISO contacts). Work is also in progress through contact with the PLCS and STEP working groups to find the optimum relationship between the PDKM System Object Model and those standards.

- Advancing the development and adoption of the PMI and maybe more open "PDKM data model" approach in collaboration with the Open Group.

- Supporting and contributing to the Discovery Services community in collaboration with IETF.

The key challenge here is to ensure the continuation of these efforts beyond the life of the PROMISE project. Promise Innovation has proposed to "manage"/"co-ordinate" these parallel initiatives after M42. This would also be ensured through continued involvement of the academic partners and interested industrial partners in the standards bodies, and also through possible research projects through the FP7 framework.

In conclusion, it is our assessment that the standardisation workpackage has been successful in meeting its stated objective "*…to ensure that there is an open channel for the continuing promotion and acceptance of key elements of the standards (or set of standards) and interfaces defined during the PROMISE project*" by ensuring that the outcomes of the project and standards specifications have been made visible and actively promoted to various related standards bodies. The key to successful development and adoption of PROMISE standards relies on leveraging the momentum created at the end of the project. This largely depends on the industrial community.

Bibliography
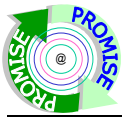
[1] A. Parlikad, J. Cassina, D. Potter, D. Kiritsis, L. Rabe, P. Folan, M. Tomasella, and K. Framling, "DI1.7a: Promotion of PROMISE standards,"DI1.7a, 2007.

[2] D. Ranasinghe, R. Solanas, J. Cassina, D. Potter, B. Forss, A. Parlikad, and K. Framling, "DI1.6c: Evaluation of PROMISE standards,"DI1.6c, May8 A.D.

[3] A. Parlikad, J. Cassina, D. Potter, D. Kiritsis, L. Rabe, P. Folan, M. Tomasella, and K. Framling, "DI1.7b: Promotion of PROMISE standards,"DI1.7b, 2007.

[4] D. Ranasinghe, M. Harrison, D. Potter, K. Framling, D. Kiritsis, and A. Parlikad, "DI1.6b: Evaluation of PROMISE Standards,"DI1.6b, 2007.