Notes from the RS3G (Rome Student Systems and Standards Group) Workshop, 22 June 2009

In conjunction with the EUNIS (European University Information Systems) Conference at Santiago de Compostela, Spain 22-25 June 2009. RS3G held a one day workshop on 22 June. Sixty people from 17 countries representing 42 organizations attended. Thirty-six from 12 countries attended the previous workshop in Stuttgart, Germany,

Context

RS3G became a EUNIS Task Force in April (RS3G, 2009). The Santiago workshop followed the organizing meeting in Rome—9 November 2007, and workshops in Dublin—25 April 2008, and Stuttgart—11 December 2008.

The current Steering Committee includes original founders Jonathan Dempsey, Digitary (IE) Manuel Dietz, QS unisolution (DE) and Simone Ravaioli, KION (IT) and now Gunnar Backelin, LADOK (SE), Jean Francois Desnos, EUNIS (FR) , and Herrmann de Leeuw, EAIE (NL). Advisors to the Steering Committee include Jan Martin Lowendahl, Gartner Research (SE), David Moldoff, PESC and Academy One (USA), and Mark Stubbs, Manchester Metropolitan University (GB). Stéphane Velay, QS unisolution (DE) was also a founder.

The workshop

The Workshop was both an opportunity for others attending the EUNIS Conference to learn about the RS3G initiative, to exchange information among organizational representatives and to discuss emerging issues.[1]

EUNIS President Jean Francios Desnos and Vice President Jan Madey welcomed the workshop participants.

Jonathan Dempsey and Simone Ravaioli—two of the RS3G founders—summarized the previous workshops, listed the current Steering Committee, and described the Manifesto (RS3G 2009c).[2]

[1] David Moldoff, AcademyOne (US) (2009) authored an informative description of the Workshop itself and his travels.

Gartner's Jan-Michael Lowendahl presented "Identity Management and Student System Standards."[3] He described identity management and strongly suggested that university CIOs should implement identity management policies and systems immediately and integrate with student systems to ensure security. He also strongly recommended following standards to ensure interoperability with other universities and within federations.[4]

Dave Moldoff (2009, p. 14) summarizes Lowendahl's key recommendations:

> Work on government's role, understand the development of standards (specifications to adoption to standards) and defacto [standards], develop interoperability—which means we need to recognize there will be multiple protocols, methods, technology, etc. Recognize identity and identity assets as real asses. We all need to find our place in the claims ecosystem.

Cleo Sguropoulou (2009) summarized the status of ELM (European Learners Mobility), a standardization project ongoing within CEN (Comité Européen de Normalisation translated into European Committee for Standardization).[5] The ELM project is expected to produce the Diploma Supplement (DS) specifications within 14-16 months including public comment and revisions.[6] During its first seven months, ELM-DS "developed the first draft of the abstract and conceptual models leading to name spaces and domains for basic data schemas making up the Diploma Supplement (Moldoff, 2009)."

---

[2] The available slides from these presentations are online (RS3G, 2009a).

[3] Due to intellectual property issues please contact Jan-Martin.Lowendahl (at) gartner.com directly for presentation materials.

[4] Because of the network effects of communication, according to Bob Metcalfe's Law (Metcalfe, 1996), the value of the network is proportional to, but not necessarily equal to, the square of the number of participants. Standards permit communications with others in the network without additional costs. This also suggests a point made by Hermann Strack (2008), University of Applied Sciences, Wernigerode, Germany, that universities would have "synergies with Big eGovernment" by using the same standards. (See his slide "Motivation – eGovernment for Universities" in slides accompanying the EUNISWorkshop materials (RS3G, 2009a). These slides were first presented at the Stuttgart Workshop, but not included in the conference publications).

[5] Slides from her presentation are also available at www.rs3g.org/activities/future-events/20090622_eunis.

[6] "The Diploma Supplement (DS), developed in cooperation with the Council of Europe and UNESCO, is a document attached to a higher education diploma which aims at improving international 'transparency' and facilitating the academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were successfully completed by the individual named on the original qualification to which this supplement is appended." Directorate-General for Education and Culture, (2008, p. 20).

Janina Mincer Daszkiewicz, MUCI (Multi-University Centre for Infomatization) presented "Web-Services for Exchange of Data on Cooperation and Mobility Between Higher Education Institutions." [7] This collaboration included MUCI (PL), CINECA (IT), and Ladok (SE). This describes how a standards-compliant SOAP and WS-* based data transport network could be implemented and tested. The project history suggests a prototype was completed and tested using data from Parma University and University of Warsaw. Her presentation included screen shots from the prototype and references to the WSDL (Web Services Description Language). Her presentation suggested the use of UDDI (Universal Discovery and Description Language) directory of the proposed network services.

The presentations concluded with a brief discussion and suggestion to attend EAIE (European Association for International Education) Workshop 11 "Empowering student mobility: digital student data portability" chaired by Simone Ravaioli with Elizabeth Jones, QualSearch, Australia, Ynovve Shapiro, South African Qualifications Authority (SAQA), South Africa and Thomas Black, Stanford University USA. (September 16, 2009).[8] Ravaioli also announced the next RS3G Workshop would be held 17 November 2009 in Uppsala, Sweden, hosted by Ladok.

The OSCI (Online Service Computer Interface) specification

Professor Hermann Strack (unisolution, 2007b), University of Applied Sciences, Wernigerode, Germany, briefed the RS3G on the development of the OSCI Transport specification at the original meeting in Rome. He gave an update at the Stuttgart Workshop in December 2008 saying that OSCI specifications would be released "soon." In February, Frank Steimke (2009) of the City of Bremen Finance Senate and initial sponsor of the OSCI work described the original specification and pilot to the eGovernment Technical Committee of OASIS (Organization for the Advancement of Structured Information Standards), at their meeting in Brussels. In June 2009 OSCI (2009) released Version 2 of the Transport specification.[9]

Randy Timmons, CEO of Sigma Systems Inc., and I requested a meeting with Professor Strack on the evening before the workshop.[10] He graciously agreed.

---

[7] A copy of her slides and a EUNIS 2008 paper describing the pilot is available in the Workshop materials (RS3G 2009a) and at www.rs3g.org/activities/future-events/20090622_eunis.

[8] EAIE policy requires full conference registration to attend a workshop.

[9] The best explanation of the specification's features is Jörg Apitzsch's (2009) subtitled "Context to European Activities on Web Services Infrastructures for eGovernment and Technical Features Overview."

[10] Because of a concurrent Steering Committee meeting, none of the Steering Committee could attend.

The original pilot of OSCI version 1 began in 2001 before the WS-* series of specifications were developed and published by OASIS. For example the WS-Addressing specification was a W3C Member Submission 10 August 2004 and approved by OASIS on 5 February 2009. The OASIS WS-Security specification version was completed March 2004; and version 1.1 in February 2006.

Professor Strack said one of the primary motivations for version 2.0 was to incorporate the standards that had emerged between 2001 and 2009. Jörg Apitzsch (2009 p. 3) wrote:

> Meanwhile much of the principles and objectives of OSCI Transport [version 2.0 specification] are addressed by the building blocks of the Web Services protocol family – the so called "WS-Stack". This generic protocol stack is designed to serve arbitrary business scenario requirements for message exchange over open networks. Profiling has to be done for manifesting the general requirements of eGovernment communication scenarios. For the objective of maximised interoperability, restrictions to the degrees of freedom offered by the WS-Stack must be defined.

The OSCI2 specification has three important features:

1. Accepted standards – the new specification was based on currently implemented standards; this implied a conversion for the 2001 version 1 and 2002 version 1.2 users over attempting to include the original specification as part of the new. This makes the specification especially useful for new software development.

2. Structure of the specification – The specification accommodates several levels of different functionality. This permits a user to begin with a narrow “profile” and as additional functionality is required (e.g. message relaying or security for an application that previously transported only publicly-available information) broaden the profile. Interoperability is expanded rather than threatened by a separate specification.

3. “Transport only” – The specification is limited to the task of exchanging messages. The definition of the content of the messages is left to application developers who would produce and use the message content, not included as part of the transport specification. Examples include the original application: XMeld Civil registration in Germany, XJustiz, SAGA, and RegisSTAR,

The topology of the original application—communications within the five pilot states and the exchanges among the states—is frequently found in universities and government. (This is especially true in the U.S. and Canada with strong state and province independence at the same many services are rendered by the federal government).

Using examples from the current real-time exchange of data via messaging—for example student loan data in an application called Meteor (NCHELP, 2008)—we asked Strack about the specification in detail. We concluded that the proposed update of Meteor—it also was put into production in 2001 using SOAP and encryption—could be expressed as a profile of OSCI2. Based on our early understanding of Kuali Rice (Godert, 2008) it appeared it also could be expressed as a profile. The prototype of real-time exchange of PESC transcripts developed as a prototype for the California Community Colleges also can be expressed a profile of OSCI2.[11]

The OSCI specification is an example of German engineering—functionally rich, precise, detailed, clearly documented, and complete.

The role of servicers; an opinion

After the close of the workshop, Janina Mincer Daszkiewicz raised the issue of the role of servicers since the architecture of the pilot project could support direct communication between universities.

However, there are three conditions where using a servicer is preferable to the university serving as a network node:[12]

- Expertise – When the university has not yet developed the expertise and depend upon the servicer for process knowledge. When the knowledge has been transferred from servicer to the university this ceases to be a motivation.
- Volume – When the volume does not warrant the ongoing costs of an installed software application. Between 50 and 70% of the institutions by count, not enrollment, will be unable to economically justify the installation and support of a complex application.[13]

[11] The California Community Colleges elected to use a servicer and send transcripts several times a year to the servicer. Since it was a prototype ownership of the code reverted to instructional media + magic inc. and is now controlled by Sigma Systems Inc. The issue of making it open source has never arisen. The prototype was developed by the team who developed uPortal.

[12] These views come primarily from the implementation of SEVIS, an online system for processing visas for students coming to study in the U.S. When the U.S. federal system began operation most colleges and universities use specialized servicers that had developed software accessible by browser. Subsequently the key firm was acquired by SCT Sungard as part of their suite of administrative applications. With increased volume, developing expertise in international student offices, and the availability of integrated software, only a few continue to user servicers.

[13] This comes from U.S. data where more than half of the colleges and universities have less than 1,000 students. Popular services include financial aid, admissions, and transcript exchanges. These generally use electronic exchanges and have process knowledge and expertise that may not be available.

- Priorities – Because of priorities for new administrative applications, the computer center may be unable to implement a new system of lesser priority.[14]

QS-unisolution's MoveOn is now the largest and perhaps dominate servicer and software provider for automation of the Bologna process. Eramus (Directorate-General for Education and Culture, 2008, p. 126) reports

> Software produced by the Moveonnet network was reported as an extremely useful tool in terms of EU project management and monitoring by a number of higher education institutions. The software was reported to have proved highly beneficial for effective identification of partners, tracking of students, reviewing statistical outcomes from ERASMUS, assistance in application and report writing and communication with partner institutions. Co-ordinators at UWM, for instance, felt that dissemination of this software would be beneficial.

As an "early adopter" servicer MoveOn is important to the early RS3G effort.

MoveOn provides a definition of the administrative processes themselves. Many university administrative staff will adopt a servicer's processes because they work, are well documented, formal training is available, and the processes reflect the experience of many universities. This is illustrated in presentations from MoveOn's last conference (unisolution, 2009).

The ERAMUS report (Directorate-General for Education and Culture, 2008, p. 11) recommends "Support a *uniform implementation* of ECTS and the Diploma Supplement in higher education institutions [emphasis added]."

In part the value of the data exchange network depends upon the number of participating universities; by number MoveOn will have a substantial number at least for the next several years. Three hundred (300) higher education institutions in 17 countries currently use MoveOn software (unisolution, 2009 p. 7). Chris Anderson (2004) points out the number of small suppliers or products in the "long tail" are much larger than the number that constitutes most of the market. These are most economically served by servicers.

The network effect is important to encourage additional adopters.[15]

---

[14] Data from various sources suggest the available resources available for new applications is less than 10% of funding primarily because of software and hardware maintenance.

[15] This refers to "crossing the chasm." Geoffrey Moore's 2002 book of that name described the marketing strategy. Jonathan S. Linowes (2003) has an excellent summary of Moore's book with additional context. . Alex Iskold. (2007) updates the perspective of the "Crossing."

The work of MUCI, CINECA, and Ladok are important to establish feasibility of the real-time exchange of documents used for student mobility. MoveOn has already demonstrated the capability and value of a servicer. In order to gain broad utilization and major benefits to colleges and universities and students, a collaboration based on process experience from MoveOn and the development and implementation experience of MUCI, CINECA and Ladok on service data transport would yield the most significant benefits for the higher education community.

The next RS3G Workshop may suggest how effective the cooperative effort will be.

References

Anderson, Chris. (2004: October). The long tail. Wired magazine Issue 12.10. New York: Condé Nast Digital. Available from www.wired.com/wired/archive/12.10/tail.html and

Apitzsch, Jörg. (2008: 9 October). *OSCI Transport 2.0 - Design details*. At the IDABC Middleware Expert Meeting, Brussels, October 9th 2008. Available from www.immagic.com/eLibrary/TECH/OSCI_DE/O081009A.pdf

Apitzsch, Jörg**.** (2009: 24 March). OSCI-Transport, Version 2, German contribution to interoperability solutions for european public administrations. Bremen, Germany: OSCI Leitstelle., Senatorin für Finanzen. Available from www.immagic.com/eLibrary/TECH/OSCI_DE/O090324A.pdf.

Apitzsch, Jörg (Ed.). (2009: 1 June). OSCI-Transport, Version 2, Technical features overview. Bremen: OSCI Steering Office [Leitstelle], Senatorin für Finanzen. Available from www.immagic.com/eLibrary/TECH/OSCI_DE/O090601T.pdf.

Directorate-General for Education and Culture. (2008: 15 December). The Impact of Erasmus on European higher education: quality, openness and internationalisation. Brussels, Belgium: European Commission. Available from http://ec.europa.eu/education/erasmus/doc922_en.htm and www.immagic.com/eLibrary/ARCHIVES/GENERAL/EC_EU/E081215I.pdf.

Farmer, Jim (2008: May 30). RS3G Briefs PESC on Bologna process administration. Denver, Colorado USA: instructional media + magic inc. Available from www.pesc.org/library/docs/European Initiative/USBriefingAtPESC.pdf and www.immagic.com/eLibrary/ARCHIVES/GENERAL/IMM/I080530F.pdf.

Godert, Aaron. (2008: April). Kuali Rice Overview. Indianapolis: Kuali Foundation.

Iskold, Alex. (2007: 6 August). Rethinking 'Crossing The Chasm'. Menlo Park, California USA [uncofirmed]: ReadWriteWeb. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/BLOGS/I070806I.pdf.

Kilkki, Kalevi and Kalervo, Matti. (2004: March). *KK-law for group forming services*. At the XVth International Symposium on Services and Local Access, Edinburgh, U.K. Available from kotisivukone.fi/files/50ajatelmaa.ajatukset.fi/tiedostot/Others/kilkki_kk-law.pdf and www.immagic.com/eLibrary/ARCHIVES/GENERAL/GENREF/S040300K.pdf.

Linowes, Jonathan S. (2003: 8 September). A summary of "Crossing the Chasm.", Lyman, New Hampshire USA: Parker Hill Technology Group, www.immagic.com/eLibrary/ARCHIVES/GENERAL/GENREF/P030908L.pdf

Metcalfe, Robert. (1996: 30 May). Metcalfe's Law recurses down the long tail of social networking, VCMike's Blog. Waltham, Massachusetts USA: Polaris Venture Partners. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/BLOGS/V060818M.pdf

Mincer-Daszkiewicz, Janina. (2008: 1 September). Some thoughts on joint project of MUCI and CINECA. Warsaw, Poland: Uniwersytet Warszawski). Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/RS3G_EU/R080931M.pdf.

Moldoff, David. (2009:29 June 2009. RS3G Workshop, Santiago de Compostela, Tuesday June 23, 2009. Chester, Pennsylvania USA: AcademyOne Inc. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/ACADO_US/A090629M.pdf.

National Council of Higher Education Loan Programs Inc [NCHELP]. (2008: April 4). Getting started with Meteor: A user's guide to the Meteor Network, Meteor v3.3. Washington DC USA, Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/NCHELP/M080404U.pdf.

OSCI Leitstelle. (2009: 4 June). OSCI-Transport, Version 2.0: Web Services profiling and extensions specification. Bremen: Senatorin für Finanzen. Available from www.immagic.com/eLibrary/TECH/OSCI_DE/O090604S.pdf.

Ravaioli, Simone (2009: 23 July). Rome Student Systems and Standards Group Workshop: EUNIS Santiago de Compostela, Spain. Bologna, Italy. Available from ww.rs3g.org/activities/future-events/20090622_euni/ and, as a single file, www.immagic.com/eLibrary/ARCHIVES/GENERAL/RS3G_EU/R090623R.pdf.

Reed, David P. (2003: February).That sneaky exponential—Beyond Metcalfe's law to the power of community building. Context Magazine. Chicago, Illinois USA: Diamond Management and Technology Consultants Inc. Retrieved 27 July 2009 from

www.contextmag.com/setFrameRedirect.asp?src=/archives/199903/digitalstrategy.asp. Also available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/GENREF/C090200R.pdf

Rome Student Systems and Standards Group [RS3G. (2009a: 23 July). Harmonizing higher education: "Standard" perspectives in support of the Bologna Process toward the creation of a European Higher Education Area, RS3G workshop in Santiago. Bologna, Italy. Available from www.rs3g.org/activities/future-events/20090622_eunis and www.immagic.com/eLibrary/ARCHIVES/GENERAL/RS3G_EU/R090723R.pdf,

Rome Student Systems and Standards Group [RS3G]. (2009b: 23 July). Liaisons EUNIS. Bologna, Italy. Available from www.rs3g.org/liaisons/eunis and www.immagic.com/eLibrary/ARCHIVES/GENERAL/RS3G_EU/R090723R.pdf

Rome Student Systems and Standards Group [RS3G]. (2009c: 23 July). RS3G Manifesto. Bologna, Italy. Available from www.rs3g.org/whoweare/manifesto and www.immagic.com/eLibrary/ARCHIVES/GENERAL/RS3G_EU/R090723M.pdf.

Sgouropoulou, Cleo.(2009: 22 June). European learner mobility standardization. At the Rome Student Systems and Standards Group Workshop: EUNIS Santiago de Compostela, Spain. Bologna, Italy: Rome Student Systems and Standards Group. Available from http://wiki.teria.no/confluence/display/RS3G/SANTIAGO and www.immagic.com/eLibrary/ARCHIVES/GENERAL/RS3G_EU/R090623R.pdf.

Steimke, Frank and Hagen, Martin. (2004: 24 January). Communications standard for e-government. *In lecture notes in computer science*. Berlin and Heidelberg, Germany: Springer-Verlag. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/OSCI_DE/O040124S.pdf

Steimke, Frank. (2009: 19 February). Web- Services for eGovernment in Germany. Presented at eGov workshop Brussels – Public finance: ICT solutions using SOA and Web Services. Billerica, Massachusetts USA: Organization for the Advancement of Structure Information Systems. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/OASIS/O090219E.pdf.

Strack, Hermann. (2007: 9 November). Architecture and procedures for the exchange of student data using egovernment standards. Wernigerode, Germany: Hochschule Harz. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/UNISOLDE/U071109W.pdf.

Strack, Hermann. (2008: December 11).Enabling student data exchange standards—the OSCI 2.0 standard going to EU-Harmonization. Wernigerode, Germany: Hochschule Harz. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/RS3G_EU/R081211W.pdf.

unisolution GmbH. (2007a: 29 June). moveon Conference, 28th-29th June, University of Bonn. Stuttgart, Germany: unisolution GmbH. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/UNISOLDE/U070629C.pdf.

unisolution GmbH. (2007b: 9 November). [RS3G] European workshop, Rome, 9 November 2007. Stuttgart, Germany: unisolution GmbH. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/UNISOLDE/U071109W.pdf.

unisolution GmbH. (2008: 4 July). MoveOn conference, 2-4 July 2008. Universidad Politechnica de Madrid. Stuttgart, Germany: unisolution GmbH. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/UNISOLDE/U080704C.pdf.

unisolution GmbH. (2009: 3 July). Moveon Conference 2009 Stockholm, Sweden. Stuttgart:unisolution GmbH. Available from moveonconference.qs-unisolution.com/ and www.immagic.com/eLibrary/ARCHIVES/GENERAL/UNISOLDE/U090703C.pdf.

vander Eijk, Pim. (2009: 19 February). Convergence in messaging frameworks. Presented at *eGov Workshop Brussels – Public finance: ICT Solutions using SOA and Web Services*. Billerica, Massachusetts USA: Organization for the Advancement of Structure Information Systems. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/OASIS/O090219E.pdf

Velay, Stéphane, Dietz, Manuel, and Ravaioli, Simone. (2007: 9 November) European Workshop, Rome, 9 November 2007. Bologna, Italy: Rome Students Systems and Standards Group. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/UNISOLDE/U071109W.pdf.