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ABSTRACT:

This WP4 Planning and Activities Report describes the actions that are intended within WP4 in the coming 12 months to engage with the practitioners and to organize uptake. It is the first report of this type and an update will be written before the end of this first 12 month period.

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GLOSSARY

ABBREVIATION	DEFINITION
BoD	Board of Directors
CB	Consortium Board
DoA	Description of the Action
EC	European Commission
EU	European Union
IG	Interest Group in the global RDA initiative
PM	Person Months
PMO	Project Management Office
RDA EU 3	Research Data Alliance - Europe 3
SyA	Synchronisation Assembly
TWM	Technical Working Meetings
WG	Working Group in the global RDA initiative
WP	Work Package in the RDA EU project
WPL	Work Package Leader

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1 Executive Summary

This Deliverable focuses, essentially, on the activities carried out by the Task 4.3. It describes its main objective and the activities to be carried out in order to achieve this objective. The main objective is to strengthen the “computer science” perspective in the RDA WGs’ results by injecting advanced computer science concepts and research results into the RDA WGs’ activities. This will ensure that the RDA WGs’ technological solutions take into account the latest developments in the computer science field.

The planned activity for the first year is described in detail. The selected topic is Discoverable Data Service / Tool Registry. Yet there is no directly related activity in RDA, thus the objective of this first workshop is to inspire a new WG/IG activity in RDA. The main planned activity is the organization of a Technical Working Meeting. The concept of the Technical Working Meeting, the topic to be addressed, the rationale, and the expected output are illustrated. The timing of this activity is also provided.

By TWM we mean a meeting attended by max 20 attendees, where participation is only by invitation and there is a balanced audience of technical experts/computer science researchers and RDA group leaders. The first TWM will deal with the topic of “Data Service/Tool Registry”. It will address the problems that hamper efficient data service/tool discoverability and the development of appropriate registries. In particular, the focus of the meeting will be on the different levels of description of a data service/tool, modelling approaches and discovery mechanisms based on semantic descriptions. The first TWM will take place in April 2016 and reports/evaluations are expected in the following months.

It is considered to be too early for concrete plans regarding the second and third year of the Project.

2 Practitioner Engagement

This series of deliverables focusses on the task 4.3 in WP4. The objective that is going to be achieved and that is subject of this report is to

1. Create a platform for intense and deep interactions about RDA activities including advanced technologists such as computer scientists, experts from relevant RDA working groups and interested industry to improve RDA and RDA Europe work

To achieve maximal transparency the plans will be presented to the RDA Europe Stakeholder Meetings and the Synchronisation Assembly (SyA) for commenting and the Board of Directors (BoD) for final decision taking.

2.1 Task 4.3 Advanced Technology Interaction

The main objective of Task 4.3 is to strengthen the “*computer science*” perspective in the RDA WGs’ results by injecting advanced computer science concepts and research results into the RDA WGs’ activities. This will ensure that the RDA WGs’ technological solutions follow appropriate quality and methodological principles (e.g. defined (meta)data models have well defined semantics; algorithms are computationally efficient, data systems are scalable, etc.) and take into account the latest developments in the computer science field.

In particular, Task 4.3 will conduct the following activities:

- critical analysis of the RDA WGs’ outcomes;
- injection of advanced computer science concepts and research results in order to enhance and optimize the RDA WGs’ results;
- identification of advanced topics that are considered to be relevant for the RDA objectives and, therefore, worthy to be addressed by new RDA WGs and IGs;
- establishment of tight collaborative links between the RDA community and the wider computer science community;
- creation of a constituency of experts who follow the RDA activities and actively support and contribute to the improvement of the RDA outcomes; and
- production of a series of publications reporting the results of the analysis process as well as recommendations for optimizing the RDA results.

Instrument for successfully conducting these activities is the organization of a series of Technical Working Meetings (TWMs). Task 4.3 will organize three TWMs.

Technical Working Meeting. By TWM we mean a meeting attended by max. 20 attendees. Participation is only by invitation. A balanced audience between

- leaders of RDA WGs and IGs potentially interested in the topics addressed by the meeting;
- representatives of large research data infrastructures;
- representatives of large data organizations; and
- computer science researchers.

will be sought.

Activities associated with the organization of the TWMs include:

- identification of RDA outcomes that are mature enough for entering in the analysis process carried out during the Working Meetings;
- identification of representatives of large research data infrastructures to be invited to the TWMs;
- identification of representatives of large data organizations to be invited to the TWMs;
- identification of computer science researchers who work in fields relevant for the topic to be addressed by the TWM;
- preparing the agendas of the TWMs;
- appointing a rapporteur at each TWM having the responsibility of collecting the contributions of the participants and also prepare the detailed minutes of the meeting; and
- appointing an Editorial Board for editing the Report to be produced by the TWM.

2.1.1 Activities Planned for the first year

The first out of three TWM will be organized:

Theme: **Discoverable Data Service/Tool Registry**

We started to organize a TWM to address the problems that hamper efficient data service/tool discoverability and the building of appropriate registries. In particular, the focus of the meeting will be on the different levels of description of a data service/tool, modelling approaches and discovery mechanisms based on semantic descriptions. In the case of the chosen topic there is yet no directly related RDA activity, thus the intention is to initiate a new RDA activity.

Rationale:

Acceptance of the open science principle entails open access not only to research data but also to data services, tools, analyses, and methods that enable researchers to conduct efficiently and effectively their research activities.

Researchers, scientists, data scientists, and practitioners have developed several data services and tools including data mining, data visualization, data analysis tools, etc. One of the challenges faced by researchers in a globally networked scientific world is to be able to locate data services/tools that fulfil their research needs. Efficiency of discovering appropriate data services/tools and possibly composing them to build complex scientific workflows is a requirement of modern science. A crucial aspect in making this happen is the ability to semantically describe the functionality of a service/tool. It becomes increasingly necessary to create registries that maintain semantically enriched descriptions (metadata/profiles) of data services/tools. It is also necessary to develop discovery mechanisms that match the service/tool description against the description of a user need.

While there are many detailed activities in the realm of metadata taking place in RDA at the moment covering a broad range of topics, at present, semantic descriptions (metadata) of data service/tools are missing.

Outcome:

We expect that such a TWM will contribute to promote a research activity in a very relevant topic that so far, unfortunately, has not been adequately addressed. It will promote the creation of new RDA WGs and/or IGs to address some of the issues that will emerge from the live discussions during the meeting.

It will also contribute to build Data Service/Tool Registries based on semantically enriched profiles of data services/tools.

Duration: The Meeting will last two full days.

Place: Island of Santorini (Greece) (tbc)

Date: 21-22 April 2016 (tbc)

A report will be produced at the end of the TWM by **30 June 2016**. It will describe the research problems identified during the live discussions that need to be addressed and directions to be followed in order to solve them.

An analysis and assessment of the TWM results will be performed by **30 September 2016**.

The main findings of the TWM will be introduced in the Knowledge Base by **31 October 2016**.

The proposal for this TWM was presented and discussed during the RDA EU 3 project kick-off Meeting (Paris 8-9 September 2015). It was approved by the BoD on 19 October 2015.

The list of invitees is expected to be completed by 31 January 2016.

2.1.2 Activities Planned for the second year

A second TWM will be organized during the second year of the project.

The foreseen timing is the following:

- Identification of the theme: 30 September 2016
- Submission of the proposal to the BoD 31 October 2016
- List of Experts 31 January 2017
- Date April/May 2017

2.1.3 Activities Planned for the third year

A third TWM will be organized during the third year of the Project.

It is too early for producing a timing related to this event.

A final consideration concerns the topics to be addressed by the second and third TWMs. The choice of these topics will very much depend on the progress of the work carried out by the RDA WGs and IGs as the goal of the TWMs is to critically analyse the results obtained and help to optimize them.

In addition, the lessons learned from the organization of the first TWM will guide us in organizing the successive TWMs more efficiently and effectively.

References:

Automatic Location of Services

Uwe Keller, Ruben Lara, Holger Lausen, Axel Polleres, and Dieter Fensel: Digital Enterprise Research Institute (DERI) Innsbruck, Austria.

Tecnologia, Informacion y Finanzas, Madrid, Spain.

Web Services Description Language (WSDL) 1.1

E. Christensen, F. Curbera, G. Meredith, and S. Weerawarana. <http://www.w3.org/TR/wsdl>, March 2001

The Web Service Modeling Framework WSMF.

D. Fensel and C. Bussler. Electronic Commerce Research and Applications, 1(2), 2002.

Description logics for matchmaking of services.

J. Gonzalez-Castillo, D. Trastour, and C. Bartolini. In KI-2001 Workshop on Applications of Description Logics, September 2001.

A Logical Framework for Web Service Discovery.

M. Kifer, R. Lara, A. Polleres, C. Zhao, U. Keller, H. Lausen, and D. Fensel. In Semantic Web Services Workshop at ISWC, 2004.

Semantics for Web Service Discovery and Composition

R. Lara, W. Binder, I. Constantinescu, D. Fensel, U. Keller, J. Pan, M. Pistore, A. Polleres, I. Toma, P. Traverso, and M. Zaremba. Technical report, Knowledge Web, December 2004

Web Service Modeling Ontology (WSMO)

H. Lausen, D. Roman, and U. Keller (editors). Working draft, DERI, March 2004.

<http://www.wsmo.org/2004/d2/v0.2/>

A Software Framework for Matchmaking Based on Semantic Web Technology

Lei Li and I. Horrocks. In WWW'03, Budapest, Hungary, May 2003.

The Description Logic Handbook

D. Nardi, F. Baader, D. Calvanese, D. L. McGuinness, and P. F. Patel-Schneider (eds.). Cambridge, January 2003.

Trust Negotiation for Semantic Web Services

D. Olmedilla, R. Lara, A. Polleres, and H. Lausen. In SWSWPC Workshop at ICWS 2004, July 2004.

Semantic Matching of Web Service Capabilities

M. Paolucci, T. Kawamura, T. Payne, and K. Sycara. In ISWC, pages 333–347. Springer Verlag, 2002.

A Conceptual Architecture for Semantic Web Services

Chris Preist. In Proceedings of the International Semantic Web Conference 2004 (ISWC 2004), November 2004.

METEOR-S WSDI: A Scalable P2P Infrastructure of Registries for Semantic Publication and Discovery of Web Services.

K. Verma, K. Sivashanmugam, A. Sheth, and A. Patil. Journal of Information Technology and Management, 2004.

INSPIRE REGISTRY

Modeling Data Services (ORACLE Documentation), Book Chapter, Datenbanken und Informationssysteme, Festschrift zum 60. Geburtstag von Gunter Schlageter, Publication Hagen, October 2003-09-26

Metadata and Semantics for Web Services and Processes

Karthik Sivashanmugam, Amit Sheth, John Miller, Kunal Verma, Rohit Aggarwal, Preeda Rajasekaran. Large Scale Distributed Information Systems (LSDIS) Lab, University of Georgia, USA.

Web Services Metadata Exchange (WS-Metadata Exchange)

Discovery of Web Services in a Federated Registry Environment

UDDIe: An Extended Registry for Web Services

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