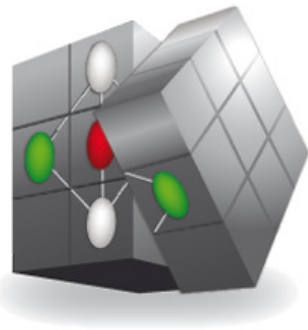| Combining and Uniting Business Intelligence with Semantic Technologies	
Acronym: CUBIST Project No: 257403	
Small or Medium-scale Focused Research Project FP7-ICT-2009-5 Duration: 2010/10/01-2013/09/30	

D5.1.7: CUBIST Dissemination Report v3

Abstract: n/a

Type	Report
Document ID:	CUBIST D5.1.7
Workpackage:	WP5
Leading partner:	SAP
Author(s):	Frithjof Dau (SAP) Simon Andrews (SHU) Ken McLeod (HWU)
Dissemination level:	PU
Status:	Final
Date:	14 October 2013
Version:	1.0

<Confidential>

Versioning and contribution history

Version	Description	Contributors
0.1	draft	Frithjof Dau (SAP)
0.2	Revised version for the special journal edition, added papers, added invited talks	Frithjof Dau (SAP) Simon Andrews (SH)
0.3	Added SAP- and HWU-internal dissemination	Frithjof Dau (SAP) Ken McLeod (HWU)
0.4	Added some papers, minor improvements	Frithjof Dau (SAP)
0.5	Added activities for ECP	Marie-Aude Aufaure (ECP)
0.6.	New promotional video added	Frithjof Dau (SAP)
1.0	Addressed comments from reviewers	Frithjof Dau (SAP)

Reviewers

Name	Affiliation
Ken McLeod	HWU
Ngoc-Diep Ho	SAS

<Confidential>

1 Introduction

In CUBIST, Task 5.1 "Dissemination" will promote and empower the dissemination, transfer, exploitation, assessment and broad take-up of CUBIST project results to the target audience and stakeholders. The goal of the CUBIST dissemination activity is to ensure high visibility of the scientific results of the research project, leading to an increased profile for European researchers in the field of Semantic Technologies, Business Intelligence and Visual Analytics, and to early use of these results by the European industry.

Dissemination activities on one hand will focus on scientific institutions in order to spread the scientific progress and establish external quality assurance. On the other hand, the project results will be continuously provided to a broader public audience interested in the results of CUBIST, in order to gain domain related feedback.

1.1 Dissemination Approach

The project and its results will be communicated to the internal audience, the scientific community and the potential business users of CUBIST. All partners are aware of and committed to this communication. It is the principle of all dissemination activities to use research results to create value within the targeted communities of the European Union, to ensure that government funding will lead to further advancements and to keep industry at the leading edge of BI solutions using ST. Thus wherever possible, research results will be communicated to create awareness and add to knowledge within targeted user and scientific communities of the European Union.

1.2 Instruments

Based on D5.1.5 "CUBIST Dissemination Report v.1", we already discussed a rough distinction between different dissemination instruments w.r.t. to the target audience on the one hand and the information direction (means which only push information to the target audience, and means which allow the audience to provide feedback) on the other hand. We recapitulate this distinction as follows:

- First of all, some "classical" means for dissemination are set in place. These means particularly address interested business users and stakeholders and comprise:

    o The CUBIST website

    o General information material like factsheets and presentations

    o Press releases

<Confidential>

- Next, to address a wider audience, the following web 2.0 channels have been set in place:
    - YouTube Channel
    - Wiki (external)
    - Blog

    Similarly to the classical means, these channels mainly address interested business users and stakeholders, but in contrast to the classical means, they allow the information consumers to provide feedback to the CUBIST consortium.

- Finally, there are dissemination means which particularly address the scientific community. As discussed in D5.1.5, These means comprise:
    - CUBIST Workshop
    - Articles and talks
    - Invited talks
    - CUBIST in teaching

1.3 Short overview over this deliverable

This deliverable builds upon the deliverables

- D5.1.5 "CUBIST Dissemination Report v.1"
- D5.1.6 "CUBIST Dissemination Report v.2"
- D6.1.6 "Updated implementation plan including updated dissemination plan"

In this report, we summarize the dissemination channels of CUBIST for the complete lifespan of the project. For those dissemination activities which have already been described in one of the three deliverables above, a short recap will be provided. New activities and updates of existing dissemination channels are described in more detail.

The next chapter provides for each dissemination channel the consortium wide activities. In the following chapter, partner-wise dissemination activities (i.e. activities conducted by one CUBIST-partner and targeting this partner as audiences) are described.

<Confidential>

2 Consortium-Wide Dissemination

In this chapter, we describe maintenance and updates of dissemination channels which have been already identified in D5.1.5.

2.1 CUBIST Website

The website is regularly maintained. Specific events like the CUBIST workshops have been added to the website in a timely manner. Moreover, on a two-monthly basis, the consortium is requested to push information considered worth to be published, which has then is added to the website.

As requested by the reviewers, a page with all public deliverables has been created. Each public deliverable can be downloaded as pdf-file, as it can be seen in Fig 1.

Fig 1: Page on CUBIST website with Deliverables

A comprehensive demo- and tutorial video for CUBIST has been produced (see Section 2.4 for more details). This video serves as deliverable D5.1.8 "CUBIST showcase" and has been added to the website to the sections "general information" and "deliverables". Moreover, a short CUBIST promotional video has been produced as well, which has been added to the website, too.

<Confidential>

2.2 General Information

Essentially most general information about CUBIST can be found on the CUBIST website. The website contains pages with information about the project (objectives, structure, partners, events, publications, etc). Apart from the pages, different kind of information can be downloaded from or reached from the website. To name the most important ones:

- **CUBIST Public Presentation:** An introductory presentation about CUBIST is provided on the website. A first version has been published at the beginning of the project and been described in D5.1.5. This presentation has been significantly extended: This new version of the presentation has been described in D5.1.6.

- **Videos:** Several videos which explain and demonstrate (sometimes in a concise, sometimes in a comprehensive manner) the prototype have been produced and published in different channels (e.g. the CUBIST website, the CUBIST youtube-channel, or in the SAP-internal video channel).

- **Public deliverables:** All public deliverables can be downloaded from the web-site.

- **External Wiki:** An external Wiki with technical information about CUBIST has been set up and can be reached directly or via the CUBIST-website. See section 2.5 for more details.

- **Fact Sheets:** Two fact sheets have been created at the beginning of the project, which can be downloaded from the website.

2.3 Press-Releases

Press releases have been mainly published in the beginning of the project, mostly by SHU. This resulted in several web-articles about CUBIST, the most important ones being listed under "CUBIST in the press" on the CUBIST website. See D5.1.5 for more details about the press releases.

2.4 YouTube Channel

As already been mentioned, a comprehensive demo- and tutorial video for CUBIST has been produced: In this video, an overview of the project is given, the navigation along semantic relationships is demonstrated, the semantic search facilities are shown, exploring the data with a graph exploration is presented, and the Visual Analytics capabilities of CUBIST are demonstrated. As the publication video of the video has been announced in several channels (e.g. in the CUBIST blog, or on specific mailing-lists like the list for the scientific FCA-community), the video has garnered nearly 300 views in less than three months. A screenshot taken end of September of the youtube-channel is provided in Fig 2.
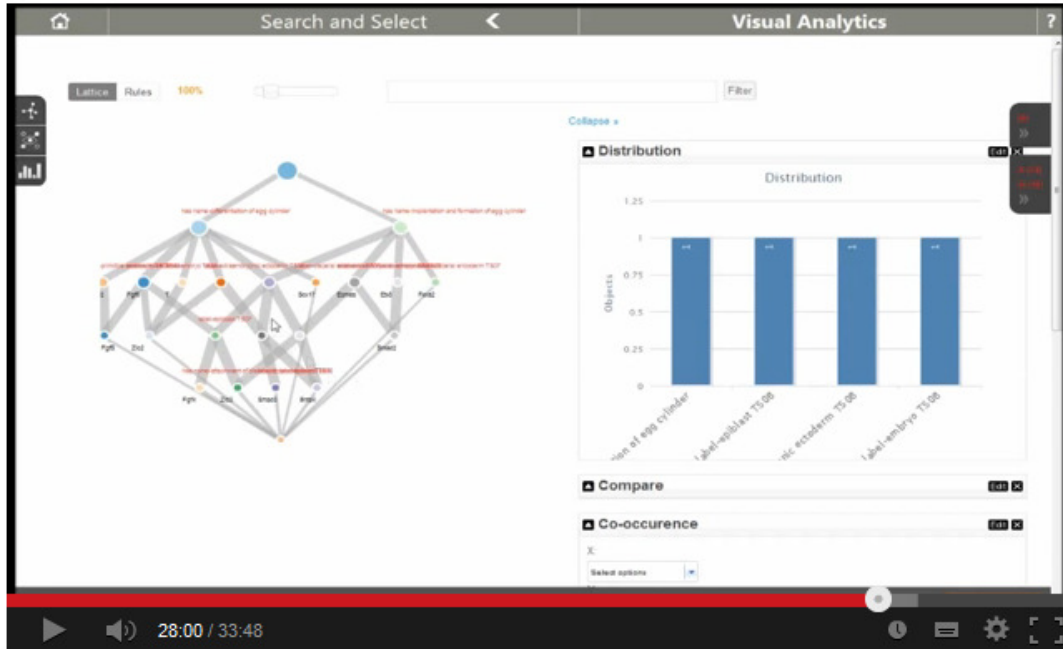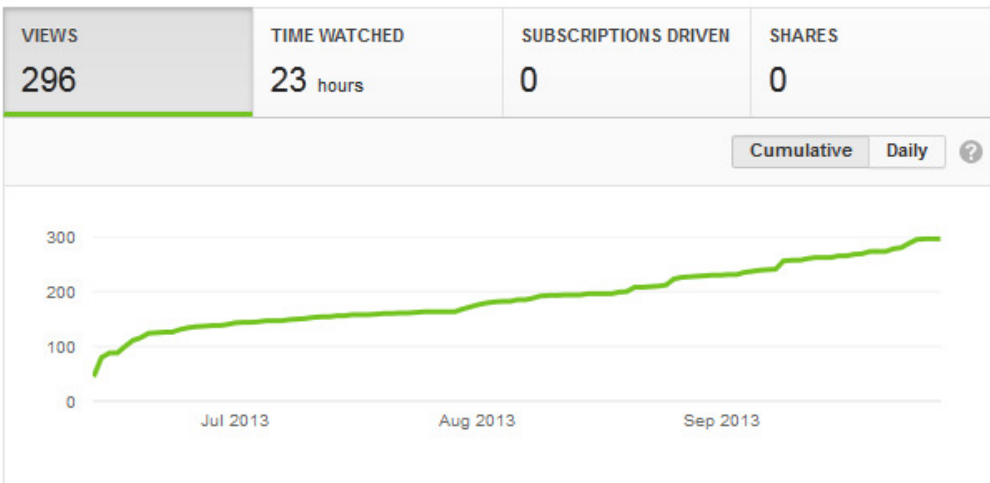
Fig 2: The new demo- and tutorial-video on the CUBIST youtube channel

<Confidential>

In addition to the demo- and tutorial video, a short and purely promotional video has been produced as well. With respect to their forms and goals, the two are complementing:

1) The demo- and tutorial video is a comprehensive and quite long (> 30 min). For this video, a script has been written, examples for the demonstrations have been carefully selected, screencast with temporary audio-explanations have been produced and assembled, and –based on the script- the audio-part of the video has been dubbed by a native English speaker from the project (Ken McLeod).In summary: The video demonstrates the vast majority of the features of the prototype via screencasts, with a narrator explaining them.

2) In the promotional video in turn, after showing some key messages, essentially consists of short video snippets of the most appealing visualizations in CUBIST. To the video, a short music piece, tailored for being used in commercials, is added whose intensity conforms to the visuals being shown. This video serves as an "appetizer" for CUBIST: it does not aim to explain, but to advertise CUBIST.

As of writing this deliverable, the video has been just finished and uploaded to the youtube-channel and the SAP-internal video channel, thus it is too early to report on the number of views.

2.5 External Wiki

A public accessible Wiki has been created which is used to inform about topics relevant for CUBIST. Moreover, the consortium agreed to use the wiki in order to document the functionality of the CUBIST prototype. As already described in D6.1.1 and D5.1.6, the Wiki hosts for example pages with

1) CUBIST-specific sections about FCA, BI, and related topics.

2) Information on the core themes in CUBIST (Semantic Technologies, Formal Concept Analysis, Information Visualization, Business Intelligence).

3) A comparison between different types of analytics.

4) Information about the prototype (e.g. CUBIST backend information like the architecture or data preparation, as well as information about the capabilities of the CUBIST frontend)

5) Information about the different use cases.

<Confidential>

In the last year of the project, as the visual appearance and the functionality of the prototype converged, further sections have been added document the functionality of the CUBIST prototype. Moreover, the two-monthly update of dissemination channels (see Section 2.11) ensures that the wiki is kept up-to-date.

2.6 Blog

The SCN blog of Frithjof Dau in the SAP Community Network (SCN) is used as blog for CUBIST. In the last year of the project, a new entry which discusses the pros and cons of using Semantic Technologies in Enterprise Setting has been published, and the publication of the new comprehensive CUBIST video has been announced. Due to a request in the last CUBIST review meeting, the blog has been better promoted to the public, e.g. in different CUBIST-related mailing lists. In D5.1.6, a screenshot of the blog in which the number of views per entry is provided. In Fig 3, we provide an updated screenshot with the actual numbers. The numbers have, even taking the time-span between D5.1.6 and this deliverable into account, largely increased, which proves a significant effect of the promotion activities.

As stated above, the blog is located in the SCN. It should be noted that apart from the CUBIST blog as such, CUBIST is mentioned in different places in SCN as well.

Title	Author	👍	🔖	💬	Views	Latest activity	
CUBIST: Comprehensive Demo Video by Frithjof Dau	Frithjof Dau	0	0	0	168	August 26, 2013 3:08 PM	⚙
Semantic Technologies for Enterprises in Data Services and Data Quality	Frithjof Dau	0	0	0	320	October 20, 2012 3:57 AM	⚙
A very concise and personal comparison of different Visual Analytics means (bar charts, graphs, FCA) by Frithjof Dau	Frithjof Dau	0	0	0	587	March 30, 2012 6:59 PM	⚙
CUBIST: Combining and Uniting Business Intelligence with Semantic Technologies by Frithjof Dau	Frithjof Dau	0	0	2	515	December 22, 2011 11:38 PM	⚙
An Expert Networking Session at SAP TechEd 2010 in Berlin about Semantic Technologies in the Research Project Aletheia by Frithjof Dau	Frithjof Dau	0	0	2	43	December 22, 2011 10:27 PM	⚙

Fig 3: CUBIST blog (September 2013)

<Confidential>

2.7 CUBIST Workshop

CUBIST has devised its own workshop in form of an annual event, colocated with appropiate conferences.

The first scientific CUBIST-workshop has been conducted in conjunction with the 19th International Conference on Conceptual Structures (ICCS), 25-29 July 2011, University of Derby, UK. The workshop has been dedicated to topics related to CUBIST, but not restricted to CUBIST members. The proceedings of the workshop have been published on CEUR, Vol 753.

The 2nd CUBIST Workshop had been held in conjunction with the 10th International Conference on Formal Concept Analysis (ICFCA), 6 - 10 May 2012, Leuven, Belgium. We received six submissions, three of them outside from the CUBIST consortium, with five submissions accepted. The proceedings are available on the CUBIST website and have been printed by KULeuven (ISBN-Number: 9789081409933, EAN: 9789081409933).

The third CUBIST-workshop has been conducted in conjunction with the 11th International Conference on Formal Concept Analysis (ICFCA), 21-24 May, 2013, Dresden, Germany. We received seven submissions, two of them outside from the CUBIST consortium, with five submissions accepted. The proceedings of the workshop have been published on CEUR, Vol. 1040.

2.8 Articles and Talks

Below, an updated list of scientific papers which have been written in the context of CUBIST (with consortium members being authors) is provided.

2010

- **K. McLeod, K. , Ferguson, G., and Burger, A.: Argudas: arguing with gene expression information**
  BMC Bioinformatics 2012, 13(Suppl 1):S8 doi:10.1186/1471-2105-13-S1-S8
- **K. McLeod, K. , Ferguson, G., and Burger, A.: Argudas: arguing with gene expression information**
  In Proceedings of the 3rd International Workshop on Semantic Web Applications and Tools for the Life Sciences, 10 December 2010, Berlin, Germany.
- **Andrews, S., Orphanides, C.: Knowledge Discovery through Creating Formal Contexts**
  In Hill, R. (ed.): First International Workshop on Computational Intelligence in Networks and Systems (CINS 2010),
  in Xhafa, F., Demetiadis, S., Caballe, S., Abraham, A. (eds.): Second International

<Confidential>

Conference on Intelligent Networking and Collaborative Systems (INCOS 2010), pp. 455-460. ISBN: 978-0-7695-4278-2/10. DOI 10.1109/INCOS.2010.53. IEEE Computer Society, 2010.

- **Andrews, S. and Orphanides, C. (2010). Analysis of Large Data Sets using Formal Concept Lattices.**
  In: Kryszkiewicz, M. and Obiedkov, S. (eds.). Proceedings of the 7th International Conference on Concept Lattices and Their Applications (CLA) 2010, ISBN 978-84614-4027-6. Seville: University of Seville. pp. 104-115

- **Andrews, S., Orphanides, C., Polovina, S. (2010). Visualising Computational Intelligence through Converting Data into Formal Concepts.**
  In: Bessis, N., Xhafa, F. (eds.), Proceedings of the 1st International Workshop on Emerging Data Technologies for Collective Intelligence (EDTCI) 2010, in: Xhafa, F., Barolli, L., Nishino, H., Aleksy, M. (eds.), Proceedings of the 2010 International Conference on P2P, Parallel, Grid, Cloud and Internet Computing (3GPCIC), Fukuoka Institute of Technology, Fukuoka, Japan. ISBN 978-0-7695-4237-9/10. IEEE Computer Society. pp. 302-307.

2011

- **Andrews, S. and McLeod, K.: Gene Co-Expression in Mouse Embryo Tissues.**
  In: Dau, F. (ed.) 1st CUBIST Workshop, at ICCS 2011, Derby, UK. CEUR Workshop Proceedings, Vol. 753, pp. 1-10. ISSN: 1613-0073

- **Andrews, S., Orphanides, C. and Polovina, S. (2011) Visualising Computational Intelligence through converting Data into Formal Concepts.**
  Book Chapter. In: Bessis, N. and Xhafa, F. (eds.) Next Generation Data Technologies for Collective Computational Intelligence. Studies in Computational Intelligence (352). Berlin: Springer. pp. 139-166.

- **Andrews, S. (2011) In-Close2, a High Performance Formal Concept Miner.**
  In: Andrews, S., Polovina, S., Hill, R. and Akhgar, B. (eds.): Conceptual Structures for Discovering Knowledge - Proceedings of the 19th International Conference on Conceptual Structures (ICCS) 2011. LNAI 6828. Berlin: Springer. pp. 50-62.

- **Burger, A:, Paschke, A., Romano, P. ,Marshall, M S and Splendiani, A.: Biomedical semantics in the Semantic Web**
  In: *BMC Bioinformatics* 2012, **13**(Suppl 1):S1

- **Etienne Cuvelier and Marie-Aude Aufaure. Graph Mining and Community Detection.**
  Springer LNBIP 96 (Lecture Notes in Business Intelligence Processing), pp. 117-138, ISSN: 1865-1348, 2012.

<Confidential>

- **Dau, F (ed): Proceedings of the first CUBIST workshop**
  CEUR Workshop Proceedings, Vol. 753. ISSN: 1613-0073
- **Dau, F: Semantic Technologies for Enterprises (invited paper)**
  In: Andrews, S., Polovina, S., Hill, R. and Akhgar, B. (eds.): Conceptual Structures for Discovering Knowledge - Proceedings of the 19th International Conference on Conceptual Structures (ICCS) 2011. LNAI 6828. Berlin: Springer. pp. 50-62.
- **Dau, F., Sertkaya, B.: An Extension of ToscanaJ for FCA-based Data Analysis over Triple Stores**
  In: Dau, F. (ed.): Proceedings of the first CUBIST workshop, at ICCS 2011, Derby, UK, July 2011. CEUR Workshop Proceedings, Vol. 753, pp. 11-22. ISSN: 1613-0073
- **Dau, F., Sertkaya, B.: Formal Concept Analysis for Qualitative Data Analysis over Triple Stores**
  Proceedings of the 1st International Workshop on Modeling and Reasoning for Business Intelligence, in conjunction with the 30th International Conference on Conceptual Modeling (ER 2011).
- **Dimitrov, M.: Semantic Technologies and Triplestores for Business Intelligence"**
  To be published by Springer in the LNBIP series.
- **Hawrylycz M, Baldock RA, Burger A, Hashikawa T, Johnson GA, et al.: Digital Atlasing and Standardization in the Mouse Brain.**
  PLoS Comput Biol 7(2): e1001065. doi:10.1371/journal.pcbi.1001065
- **Melo, C.A., Aufaure, M.-A., Le Grand, B. and Bezerianos, A.: Extracting and Visualizing Tree-like Structures from Concept Lattices**
  In: 15th International Conference on Information Visualization (IV 2011). London, UK, 2011.
- **Melo, C.A., Le Grand, B, , Bezerianos, A. and Aufaure, M.-A.: Parent Selection Criterion for Extracting Trees from Concept Lattices**
  In: Dau, F. (ed.): Proceedings of the first CUBIST workshop, at ICCS 2011, Derby, UK, July 2011. CEUR Workshop Proceedings, Vol. 753, pp. 23-32. ISSN: 1613-0073
- **Melo, C.A., Aufaure, M.-A., Bezerianos, A. and Le Grand, B.: Cubix: A Visual Analytics Tool for Formal Concept Analysis.**
  In: 23ième Conférence Francophone Sur l'IHM (IHM 2011) – Demo. Sophia-Antipolis, France, 2011.
- **Mikhailian, A., Klaï, S., Muller, C., Fontaine, B., Moreau, D. and Ursík, m.: Applying Conceptual Analysis to Space Data**
  In: Dau, F. (ed.): Proceedings of the first CUBIST workshop, at ICCS 2011, Derby, UK, July 2011. CEUR Workshop Proceedings, Vol. 753, pp. 33-42. ISSN: 1613-0073
- **Orphanides, C.: Exploring the Applicability of Formal Concept Analysis on Market Intelligence Data**

<Confidential>

In: Dau, F. (ed.): Proceedings of the first CUBIST workshop, at ICCS 2011, Derby, UK, July 2011. CEUR Workshop Proceedings, Vol. 753, pp. 43-52. ISSN: 1613-0073

- **Splendiani, A: Burger, A., Paschke, A., Romano, P. and Marshall, M S: Biomedical semantics in the Semantic Web**
  In: Journal of Biomedical Semantics, Vol 2, Suppl 1,
- **N Zaizi and A Burger, Towards spatial description of biomedical atlases**
  4th eHealth, November 2011, Malaga.

2012

- **Andrews, S and Orphanides, C.: Knowledge Discovery through creating Formal Contexts.**
  In: Xhafa, F. (ed.): Int. J. of Space-Based and Situated Computing (IJSSC), Inderscience, (in press).
- **Andrews, S and Orphanides, C.: Knowledge Discovery through creating Formal Contexts.**
  In: Xhafa, F. (ed.): Int. J. of Space-Based and Situated Computing (IJSSC), Inderscience, (in press).
- **Awang Iskandar, D. N. F., McLeod, K. AND Burger, A.: Semantic Web Spatial Representation of Biomedical Images.** In: Dau, F and Andrews, S: Proceedings of the second CUBIST workshop 2012. KULeuven press, 2012
- **Baldock, R. and Burger, A.: Biomedical Atlases: Systematics, Informatics and Analysis.**
  In: Goryanin, I. and Goryachev A. (eds.): Advances in Systems Biology. Advances in Experimental Medicine and Biology(736). Springer. pp. 655-677
- **Dau, F and Andrews, S: Proceedings of the second CUBIST workshop 2012**. KULeuven press, ISBN-Number: 9789081409933, EAN : 9789081409933, 2012
- **Dau, F.: Towards Scalingless Gneration of Formal Contexts from an Ontology in a Triple Store.** In: Dau, F and Andrews, S: Proceedings of the second CUBIST workshop 2012. KULeuven press, 2012
- **Cassio A. Melo, Bénédicte Le-Grand, Marie-Aude Aufaure. A Conceptual Approach to Characterize Dynamic Communities in Social Networks: Application to Business Process Management**, in *The 5th Workshop on Business Process Management and Social Software (BPMS2'12)*. Tallinn, Estonia, 2012.
- **Klaï, S., Sevinç, E., Fontaine, B., Jacobs, C., Muller, C.: CUBIST: Semantic Business Intelligence Supporting Payload Operations.**
  In: 12th International Conference on Space Operations, 11-15 June 2012, Stockholm, Sweden.

<Confidential>

- **Nizar Messai, Cassio Melo, Mohamed Hamdaoui, Dung Bui and Marie-Aude Aufaure. A Conceptual and Visual Approach for Complex System Simulation Data: Application to Aircraft Cabin Design**, in *Concept Lattices and Applications 2012 – (CLA 2012)*. Fuengirola, Spain, 2012 (to be published).

- **POLOVINA, S.: THE TRANSACTION CONCEPT IN ENTERPRISE SYSTEMS**
  In: Dau, F and Andrews, S: Proceedings of the second CUBIST workshop 2012. KU-Leuven press, 2012

- **Pfeifer, K., Schill, A.: Semantic Description of Text Mining Services.**
  In: Second International Conference on Advances in Information Mining and Management, 21-26 October 2012, Venice, Italy.

2013

- **Simon Andrews and Kenneth McLeod: Gene Co-Expressions in Mouse Embryo Tissues.** To appear in the CUBIST special edition of the International Journal of Intelligent Information Technologies

- **Andrews, S., Dau, F. (Editors): Proceedings of the third CUBIST workshop**
  CEUR Workshop Proceedings, Vol. 1040. ISSN: 1613-0073

- **Aufaure, M.-A., Le Grand, B.: Advances in FCA-based Applications for Social Networks Analysis** In: International Journal of Conceptual Structures and Smart Applications, Vol 1, Issue 1, 2013, pages 73-89

- **Dau, F: Towards Scalingless Generation of Formal Contexts from an Ontology in a Triple Store.** In: International Journal of Conceptual Structures and Smart Applications, Vol 1, Issue 1, 2013, pages 18-38

- **Frithjof Dau: Towards Scalingless Generation of Formal Contexts from an Ontology in a Triple Store.** To appear in the CUBIST special edition of the International Journal of Intelligent Information Technologies

- **Dau, F: An Implementation for Fault Tolerance and Experimental Results.** In: Proceedings of the Third CUBIST Workshop, CEUR Workshop Proceedings, Vol. 1040.

- **Terry F. Hayamizu, Michael N. Wicks, Duncan R. Davidson, Albert Burger, Martin Ringwald and Richard A. Baldock_ EMAP/EMAPA ontology of mouse developmental anatomy: 2013 update**. in Journal of Biomedical Semantics, 2013, 4:15 doi:10.1186/2041-1480-4-15

- **K. McLeod and A. Burger. Towards the semantic representation of biological images: from pixels to regions.** To appear in: International Journal of Intelligent Information Technologies, 2013.

<Confidential>

- **Kenneth McLeod, Albert Burger and Dayang Iskandar: Towards the semantic representation of biological images: from pixels to regions** To appear in the CUBIST special edition of the International Journal of Intelligent Information Technologies

- **C. Melo, C. Orphanides, K. McLeod, M-A.** Aufaure, S. Andrews and A. Burger. A conceptual approach to gene expression analysis enhanced by visual analytics. To appear in the 28th ACM Symposium on Applied Computing, March 2013, Coimbra, Portugal.

- **Cassio Melo, Benedicte Le Grand and Marie-Aude Aufaure: Browsing Large Concept Lattices through Tree Extraction and Reduction Methods.** To appear in the CUBIST special edition of the International Journal of Intelligent Information Technologies

- **Nwagwu, H: Evaluating and Analying Inconsistent RDF Data in a Semantic Dataset: Emage Dataset** In: Proceedings of the Third CUBIST Workshop, CEUR Workshop Proceedings, Vol. 1040.

- **Orphanides, C., Georgiou, G: FCAWare-Hose, a Prototype Inline Data Repository for FCA** In: Proceedings of the Third CUBIST Workshop, CEUR Workshop Proceedings, Vol. 1040.

- **Pfeifer, Katja and Peukert, Eric: Mapping Text Mining Taxonomies**. In: Proceedings of the International Conference on Knowledge Discovery and Information Retrieval, Vilamoura, Portugal, 19-22 September, 2013

- **Simon Polovina: A Transaction-Oriented Architecture for Enterprise Systems.** To appear in the CUBIST special edition of the International Journal of Intelligent Information Technologies

- **Polovina, S and Fallon, R: Rea Analysis of SAP HCM.** In: Proceedings of the Third CUBIST Workshop, CEUR Workshop Proceedings, Vol. 1040.

- **Taylor, A, McLeod, K, Burger, A.: Semantic Visualisation of Gene Expression Information.** In: Proceedings of the Third CUBIST Workshop, CEUR Workshop Proceedings, Vol. 1040.

2.9 Invited Talks

As described in D5.1.5, already in the beginning of CUBIST, three invited talks/lectures have been given by project members, namely:

- Frithjof Dau has been invited as keynote speaker to the 19th International Conference on Conceptual Structures, Derby, UK, in July 2011. He has given a talk about "Semantic Technologies for Enterprises".

<Confidential>

- Marin Dimitrov from Ontotext gave the lecture "Triple Store & Semantic Technologies" at the First European Business Intelligence Summer School (eBiss2011), Paris, France, July 2011
- Marie-Aude Aufaure from Ecole Centrale Paris gave the lecture "Graphs for Business Intelligence" at the First European Business Intelligence Summer School (eBiss2011), Paris, France, July 2011

We can add to this list the following new invited talks:

- Frithjof Dau from SAP AG was invited to the 11th International Conference on Formal Concept Analysis (ICFCA) in Dresden, Germany (May 2013) to present CUBIST. He has given the talk "CUBIST: Combining and Uniting Business Intelligence with Semantic Technologies". A core part of the talk was the presentation of the CUBIST prototype functionalities, focusing on the FCA-based Visual Analytics in CUBIST. The feedback was very positive, the audience was impressed by the capabilities of the prototype and expressed interest to develop CUBIST further in case it will be published as open source.
  Abstract of the talk:
  CUBIST (Combining and Uniting Business Intelligence with Semantic Technologies) is an EU-funded research project going from September 2010 to September 2013 that investigates the combination of semantic technologies for harvesting and persisting data from a variety of data sources (both unstructured and structured) and FCA-based visual analytics for exploring and analysing the data in a meaningful way. In CUBIST seven partners from different European countries participate. A main activity of CUBIST is the joint development of a CUBIST prototype, carried out by four partners, which is utilized in three different scientific and business scenarios, provided by three use case partners.
  In the talk, a) an overview over the CUBIST project will be given, with a focus on the FCA-related activities and scientific results, b) a thorough demonstration of the prototype will be provided. Based on the use cases, the up- and downsides of applying FCA in visual analytics will be scrutinized, and we will discuss the usage of FCA in large-scale enterprise settings.
- Marie-Aude Aufaure from Ecole Centrale Paris, MAS Laboratory, Chatenay-Malabry, France, will give an invited talk at the 32nd International Conference on Conceptual Modeling (ER 2013), Hong Kong, November 2013 with the title "What's up in Business Intelligence? A contextual and knowledge-based perspective"
  Abstract of the talk:
  The explosive growth in the amount of data poses challenges in analyzing large data sets and retrieving relevant information in real-time. This issue has dramatically in-

<Confidential>

creased the need for tools that effectively provide users with means of identifying and understanding relevant information. Business Intelligence (BI) promises the capability of collecting and analyzing internal and external data to generate knowledge and value, providing decision support at the strategic, tactical, and operational levels. Business Intelligence is now impacted by the Big Data phenomena and the evolution of society and users, and needs to take into account high-level semantics, reasoning about unstructured and structured data, and to provide a simplified access and better understanding of data. This talk will depict five years research of an academic chair in Business Intelligence from the data level to the user level, mainly focusing on the conceptual and knowledge level. We will show how semantic technologies, user modeling and real-time computation are useful in the context of modern Business Intelligence.

2.10 CUBIST Special Journal Issue

In D5.1.6 it has been stated that there will be a special edition of the International Journal of Intelligent Information Technologies particularly dedicated to CUBIST. Promising papers were selected from a number of CUBIST-related events and their authors invited to submit extended versions to the International Journal of Intelligent Information Technologies. The events were:

- The First CUBIST Workshop, CUBIST-WS-11, held at ICCS 2011, Derby, UK.

- The Second CUBIST Workshop, CUBIST-WS-12, to be held at ICFCA 2012, Leuven, Belgium, 6 – 10 May 2012.

- The 10th International Conference on Formal Concept Analysis, ICFCA 2012, to be held in Leuven, Belgium, 6 – 10 May 2012.

As of writing this, the edition is in print. Here is the table of contents for the issue:

- Cassio Melo, Benedicte Le Grand and Marie-Aude Aufaure: *Browsing Large Concept Lattices through Tree Extraction and Reduction Methods*

- Kenneth McLeod, Albert Burger and Dayang Iskandar: *Towards the semantic representation of biological images: from pixels to regions*

- Frithjof Dau: *Towards Scalingless Generation of Formal Contexts from an Ontology in a Triple Store*

- Simon Andrews and Kenneth McLeod: *Gene Co-Expressions in Mouse Embryo Tissues*

- Simon Polovina: *A Transaction-Oriented Architecture for Enterprise Systems*

<Confidential>

2.11 Two-monthly Update of Dissemination Channels

As described in D6.1.1., in order to ensure the dissemination channels are up-to-date, it has been agreed in the consortium that on a two-monthly basis, in the (weekly) CUBIST call we will collect dissemination activities and – if applicable – update the dissemination channels accordingly. This task has now been taken over by a dedicated person within SAP research.

<Confidential>

3 Partnerwise Specific Dissemination

3.1 SAP-Specific Dissemination

As described in D6.1.1, with the release of a first version of a fully integrated CUBIST proto-type in 2012, we can now target new dissemination events where working demos of research projects are presented. In this section, some SAP-specific dissemination means are described.

3.1.1 Internal Presentations

CUBIST has been presented at different occasions in internal meetings. Most notably, we re-cap a presentation at an internal Demo Jam On August 8, 2012, with a few external customers attending.. We have received valuable and constructive feedback from the audience, particu-larly with respect to the visualizations. More details have been provided in D5.1.6.

3.1.2 SAP Research Navigator and SAPTube

In D6.1.1 and D5.1.6, the SAP Research Navigator and SAPTube have been described.

Due to an internal restructuring of SAP Global Research, the SAP Research Navigator has been dismantled and does not serve as a dissemination channel anymore. SAPTube in turn has been replaced by an updated platform called «SAPMediaShare». As reported in D5.1.6, a first professional CUBIST video created by HWU was placed on SAPTube in September 2012. This video has been migrated to SAPMediaShare.
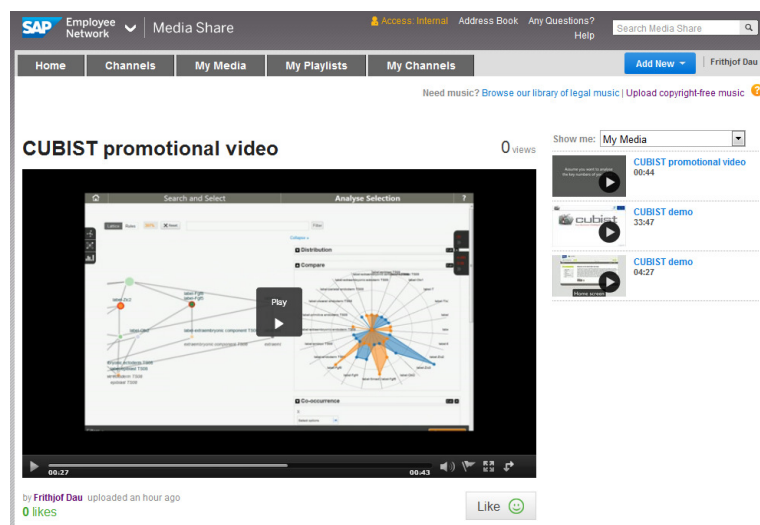

Fig 4: The new CUBIST videos on SAPTube

The two new CUBIST videos have been uploaded to SAPMediaShare as well. A screenshot is provided in Fig 4.

<Confidential>

3.1.3 SAP-internal Prototype

Based on a diploma thesis, which has been described D5.2.2, we have finalized a SAP-internal prototype for CUBIST. This prototype has two main distinguishing features:

1) The core contribution of the thesis was the provision of a fully functional and documented Java-library for the FCA-visualization, covering both the overall functionalities needed by any FCA-tool as well as novel features like a very good layout of Hass-diagrams, smooth transitions when the lattice is altered or objects are filtered, or a heatmap which shows the user "good" and "bad" positions when nodes are moved. The library and hence the overall internal prototype is fully owned by SAP, which is a strong selling point.

2) The prototype features a own dataset. This dataset is based on a (public available) feature matrix for SAP Crystal Report products. Compared to «exotic» datasets as used in the CUBIST use cases («exotic» for SAP employees), the meaning (its semantics) of this dataset is immediately understood within SAP. Moreover, this dataset is in its form (a feature matrix essentially conforms to a «formal context») and size perfectly suited for the prototype: The two types in the matrix, namely «products» and «features» (the «formal objects and attributes») have properties and attributes. Moreover, there is a straight-forward meaningful (i.e. semantic) relationship between them, namely «product_has_feature». So this dataset is both technically a perfect dataset, and its meaning and usefulness is clear for the target-audience..

Moreover, we have included in the prototype a comprehensive presentation which explains CUBIST and the prototype. The contents of the presentation are:

- General Introduction into CUBIST
    - Analytics in CUBIST
        - Short Introduction into FCA
        - Different Analysis Means
    - Functionalities in CUBIST
    - Crystal Reports Product Feature Matrix visualized with CUBIST
        - Source document and generated data
        - Examples of different analysis results

This prototype has been used to directly address different stakeholders within SAP. To name the most important ones:

1) The product owner of the SAP-internal graph database «Active Information Store», being part of SAP HANA

<Confidential>

2) The product owner of SAP Business Explorer, a leading BI-product of SAP
3) Experts for Semantic Technologies within SAP
4) The project manager of the project «proteomicsdb»[1], which is dedicated to expedite the identification of the human proteome and its use across the scientific community.

Please see also D5.2.3 «Exploitation Report v3» for these activities.
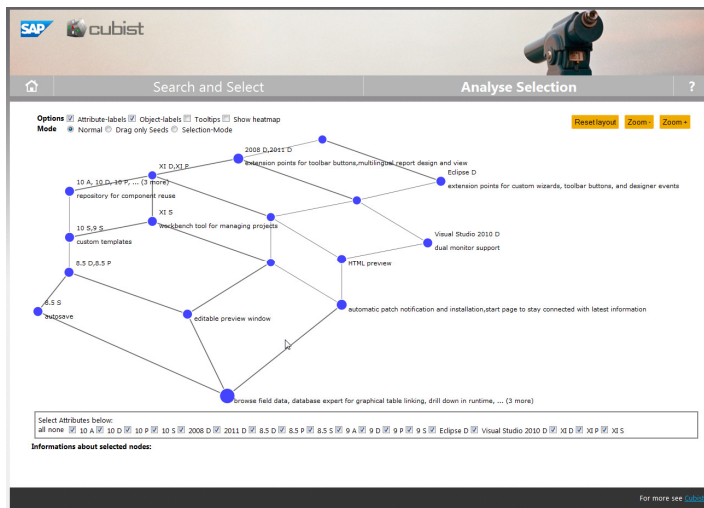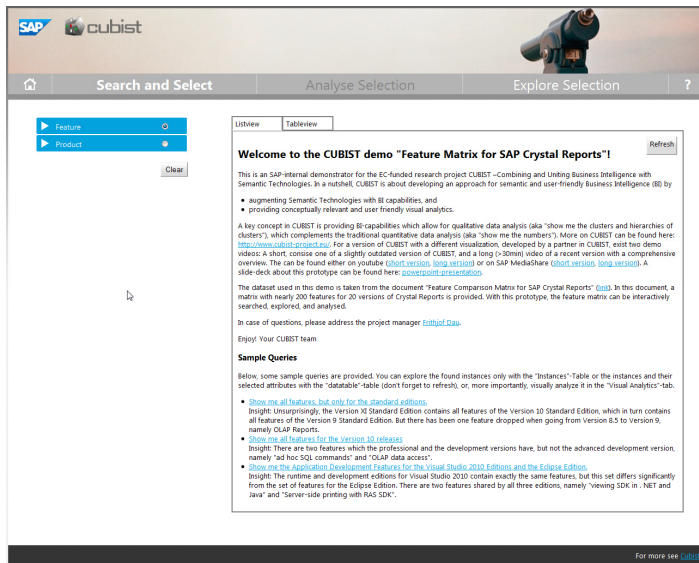

Fig 5: The SAP-internal demonstrator with the SAP-owned visualization

---

[1] https://www.proteomicsdb.org/

3.2 SHU-Specific Dissemination

Sheffield Hallam University continues to disseminate CUBIST by presenting its outcomes at learned conferences, journal articles, book chapters, future research (e.g. detecting organised crime, enterprise systems) and in teaching. One avenue of interest is in how to discover the hidden semantics within existing data systems i.e. how useful information or knowledge can be identified from the data locked inside mainstream databases or enterprise systems by applying FCA.

At Sheffield Hallam University we have incorporated CUBIST into two Computing degree course modules. The final year undergraduate `Smart Applications' module applies FCA as a potential smart technology and aims to draw comparisons and integrate FCA within this context. The second module `Enterprise Systems' is postgraduate and aims to forward the research subject area specifically within ERP systems and BI.

The improvements identified by Watmough et al. (2013a) in order to successfully teach FCA will be useful for disseminating FCA in the context of CUBIST and the wider community. The evidence gathered by this research supports FCA for exposing and discovering hidden knowledge from transactional data, it can contribute towards systems and humans working together more effectively Watmough (2013b). Knowledge discovered includes factors effecting process performance and insights into the user's actual interaction with the system and behaviour, areas that will be further targeted and researched during 2013/14.

3.3 ECP-Specific Dissemination

Dissemination activities cover various presentations of the results obtained during the project, publications in scientific venues and teaching activities.

Business Intelligence teaching at Ecole Centrale Paris mainly concerns the engineer curriculum, master students and professionals.

During the 3rd year of the ***engineer curriculum***, in the computer science option, ECP teaches the main concepts of data warehouses and data mining, as well as different types of analytics including graph and FCA-based ones.

ECP is also involved in a new ***Erasmus Mundus master in Information Technologies for Business Intelligence*** (IT4BI). Erasmus Mundus is a certification of excellence which is delivered by the European community to the best international master programmes in Europe, and it is supported by very attractive scholarships. The IT4BI program opened in September 2012 and Ecole Centrale Paris is involved in the second year. Marie-Aude Aufaure is the scientific responsible of this program. The ECP specialization, "Decision-support for Business Intelligence", will be implemented as a speciality of our master programme and will open in

<Confidential>

September 2014.. This specialization focuses on models and technologies related to Business Intelligence and decision-support systems, with a strong focus on unstructured data and semantics.

For professionals, we will open in March 2014 a two days course on Big Data, covering aspects that have been developed through the project like advanced visualization of massive data.

3.4 HWU-Specific Dissemination

During the final year of CUBIST HWU presented the results of the project to a variety of audiences in a number of venues:

- Presentation, and demo, of CUBIST at the Biomedical Systems Analysis group seminar of the UK Medical Research Council's Human Genetics Unit (HGU);
- Presentation of CUBIST at an internal HWU Department of Computer Science seminar;
- Presentation of CUBIST generated visualisations at the International Society of Developmental Biologists' (ISDB) quadrennial Congress in Cancun, Mexico;
- Discussion of CUBIST results at meetings associated with the International Neuroinfomatics Co-ordinating Facility's (INCF) Neuro Informatics 2013 conference in Stockholm, Sweeden;
- Presentation of CUBIST-related poster at the Intelligent Systems for Molecular Biology (ISMB) 2013 conference in Berlin, Germany.

Following the end of the project, HWU intend to disseminate CUBIST results in the following ways:

- Papers submitted to the Semantic Web Technologies and Applications for the Life Sciences (SWAT4LS) workshop, and the BMC Journal of Biomedical Semantics;
- Collaboration with MRC HGU and European Bioinformatics Institute (EBI) in the UK funded PhenoImageShare project.

<Confidential>

4 Summary

In this deliverable, we summarized all dissemination activities of CUBIST during the overall lifespan of the project, with a focus on the activities which happened in the third year of the project. Amongst them, most important are the web 2.0 channels like the CUBIST website, the external Wiki, the blog, and the CUBIST YouTube channel.

In addition to the consortium-wide dissemination activities, partner-specific dissemination activities have been carried out as well. Those activities have been separately described.

5 References

- [D5.1.5] CUBIST Dissemination Report v.1. CUBIST deliverable, 2011
- [D5.1.6] CUBIST Dissemination Report v.2. CUBIST deliverable, 2012

- [D6.1.1] Updated implementation plan including updated dissemination plan. CUBIST deliverable, 2012.

- [A2011] Andrews, S.: Aligning the Teaching of FCA with Existing Module Learning Outcomes. ICCS 2011, LNAI 6828, pp. 394-401, Springer-Verlag Berlin Heidelberg, 2011

- [W2013a] Watmough, M., Polovina, S. Andrews, S.: Designing Learning to Research the Formal Concept Analysis of Transactional Data. *Proceedings of the 21th International Conference on Conceptual Structures ICCS 2013,* volume 7735 of Lecture Notes in Computer Science, page 231-238. Springer, 2013.

- [W2013b] Watmough, M.: Discovering the Hidden Knowledge in Transaction Data through Formal Concept Analysis, Ph.D. Thesis. Sheffield Hallam University. 2013.