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ITEA 3 is a EUREKA strategic ICT cluster programme

D5.2.2 Project Progress Report (second half year)

ModelWriter

Text & Model-Synchronized Document Engineering Platform

Project number: ITEA 2 13028
Work Package: WP5
Task: T5.2 - Project Coordination and Reporting

Edited by:

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Document History

Version	Author(s)	Date	Remarks
0.1.0	Moharram Challenger	08-Dec-2015	

https://github.com/ModelWriter/Deliverables/issues/126

Table of Contents

1. Introduction

Role of the deliverable

This document is the first version of the project progress report covering 2015 semester 1.

The List of Technical Work Packages

UC Code	Requirements derived from
WP2	Semantic Parsing and Generation of Documents and Documents Components
WP3	Model to/from Knowledge Base (synchronization mechanism)
WP4	Knowledge Base Design and Implementation
WP6	Architecture, Integration and Evaluation

Structure of the document

This document is organized as follows:

- Chapter 1 introduces the document.
- Chapter 2 provides the PPR

Terms, abbreviations and definitions

Abbreviation	Definition
RDF	Resource Description Framework
WP	Work Package
UC	Use Case

2. Project Progress Report (2015 Semester 2)

Project key data

Project name	13028 ModelWriter
Full length title	Text & Model-Synchronized Document Engineering Platform

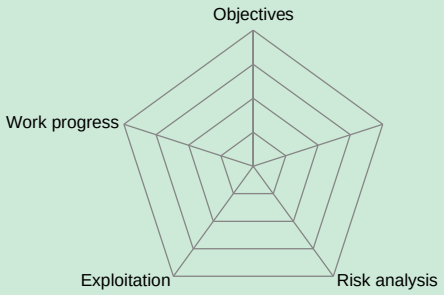
The project envisions an integrated authoring environment called "ModelWriter" for Technical Authors (such as Software or Systems Engineers etc.) which will combine a Semantic Word Processor (= the "Writer" part), looking like a usual word processor but capable to "understand" pieces of text and transparently create models of contents out of them; and a Knowledge Capture Tool (= the "Model" part), looking like familiar information modelling tools such as UML, BPMN, ReqIF, etc. ModelWriter will allow Technical Authors to freely move bi-directionally and interactively between text and model to enhance the quality (consistency and completeness) of the technical documents.

Call & project ID	ITEA 2 Call 8 - 13028			
Time frame	start:	01-10-2014	end:	30-09-2017
Size	PY:	60.07	M€:	4.2
Project leader	Ferhat Erata (UNIT Information Technologies R&D Ltd.)			
Involved countries	Belgium, France, Turkey			

Belgium	Philippe Bureille (Sogeti Belg...	13 PY
France	Etienne Juliot (OBEO)	14 PY
Turkey	Aydin Can Polatkan (Mantis)	34 PY

PCA status	PCA has has not been signed yet
Project page	13028 ModelWriter
Latest FPP	Change Request (31-03-2015)
Latest PPR	Progress report in 2015 (semester 1)
Latest review	
Next review	ModelWriter #1 (a.m.) (24-09-2015)

STG evaluation



Submitted:

STG Reviewers

Project acronyms

KB (Knowledge-base), UC (Use Case), MW (ModelWriter), ALM (Application Lifecycle Management), EMF (Eclipse Modelling Framework), RDF (Resource Description Framework), QDMS (Quality Document Management System), MBSE (Model Base Software Engineering), BAFLING (Back and Forth Linguistic Processing), DL (Description Logic), Req. (Requirement), FORL (First Order Relational Logic)

Top 4 overall targeted innovations

1	Capability to maintain a readable textual document (using an editor) and relate its content to existing models' elements
Main contributors	Obeo, UNIT, LORIA
State-of-the-Art	> There are some Document annotation systems > A new capability is to annotate a text using an ontology > A new Recommendation system is addressed (synchronization links automatically proposed)

Top 4 overall targeted business impacts

1	MBSE development
Main contributors	All
Market / competitors	Challenge in MBSE development is how to maintain the coherence between multiple distributed models or between models and documentation.

2	Model / Text Synchronization Engine with iterative and interactive matching synchronization
3	Formal Specification and Verification of Semantic Relationships between software and system artefacts
4	Semantic Annotation of Text with Model Elements

2	Reducing time to spend for Quality Control activities, by this way it provides manufacturers faster production
3	Expertise on document extraction
4	More sell of Obeo Designer and Obeo SmartEA

	Top 4 overall KPIs	Current	Target
1	Workload need to setup ModelWriter a new context	N/A	+ROI in 3 Months
	Metric description	Metric Description: Time to install ModelWriter, add new connector for existing tools and models, create the NLP resources, training of end users. This setup should made by non ModelWriter core developers. Note: this target is really dependent of the number of connectors, of ontologies, diversity of documents and tools. By using this target criteria, it will scale for small and large projects.	
2	Quality and precision of automatic synchronization detection	N/A	90% correct links
3	Automatic synchronization links number compared to manual synchronization links	N/A	30%
4	The performance of document related task from the end user point of view	X time	X/5 time

	Top 4 overall risks	S	P
1	Technical difficulty to deploy and integrate within existing frameworks/platforms	H	L
	Avoidance action	To consider most used technologies for both DSM and document edition	
	Back-up / mitigation plan	We have several frameworks as our target and if one of them has problem with integration, we will focus on the alternative one(s).	
2	Low performance and scalability	H	M
3	Annotations and markers should be resistant to modification of input documents	M	M
4	Lack of data inside the consortium prevents the training of high quality Natural Language Processing Tools	M	M

STG feedback on KPIs

STG feedback on risks

Changes in the technological and business relevance during the reporting period

> The main technical change during this period is that the technical writers who are using MS word are also addressed as ModelWriter's end users by developing a MS word processor plug-in in the scope of the project.
> Considering the Business relevance change during the period is the participation of Ford-Otosan, a large automotive industry in Turkey, in ModelWriter as a partner without fund. This will also improve the exploitation of the project results.

Project statement on progress during the reporting period

The first versions of the main components of the project are developed including: a semantic annotator, a semantic parser and a text generator, model and text synchronization, formal specification and configuration of the framework, visualization and consistency check of semantic relationships, and the graphical user interfaces. At the moment the integration plan is completed and the technical integration procedure is started for the 1st release.

STG recommendations

Exploitation

Updates to partners' exploitation prospects

UNIT Information Technologies R&D	sme	TUR	11 PY		Havelsan	ind	TUR	0 PY

As a requirement engineering tool, UNIT intends to use completed product of ModelWrter in its future development projects. Specially, we are going to use the product in the development of enterprise content management platforms, which is the area we have several national and international projects. This kind of software is complex one for which requirement engineering takes noticeable amount of cost. With using ModelWriter product this cost can be dropped dramatically. (Timeframe: immediately after EoP, Expected revenue = 300K€ per year). UNIT aims to apply ModelWriter on ReqIF feature models to generate documentation for domain models, architectural templates and product variants. In this way, the architects/developers ought not to reproduce the documentation due to changes or inconsistencies (dependencies and constraints between features in specification) in feature models. Please see use case UC-TR-03. (Timeframe: EoP + 2 years. Expected revenue = 150K€	We are planning to use the product integrated with ALM tool in our company

Mantis	sme	TUR	8 PY
Hisbim Bilgi ve İletişim Teknolojileri	sme	TUR	7 PY
Sogeti Belgium	ind	BEL	7 PY
Centre National de la Recherche	res	FRA	8 PY
KoçSistem	ifc	TUR	7 PY
Katholieke Universiteit Leuven	uni	BEL	6 PY
OBEO	sme	FRA	4 PY
Airbus Group SAS	ifc	FRA	2 PY
Ford Otosan	ind	TUR	0 PY

Other updates

Top 8 overall partners' Exploitation Related Achievements

1	Exploitation	New product	Implementation of the MW plug-in for MS Word		Planned
Full length title	Implementation of the MW plug-in for MS Word				
Summary	UNIT and HISBIM has begun to develop a ModelWriter plug-in for MS Word which will enable a seamless integration with ModelWriter on Eclipse platform. User interface of plug-in is almost ready, and now working on the integration of Eclipse platform and MS Word plug-in with respect to ModelWriter workspace.				
Impact	This product brings ModelWriter platform to Microsoft Office users. This means ModelWriter platform would be accessible by 1 in 7 people on the earth, as 1 billion active office user has been reported (quantification: -1)				
Partner(s)	UNIT Information Technologies R&D Ltd., Hisbim Bilgi ve İletişim Teknolojileri				
2	Exploitation	Enhancement	System Installation ontology v1		Planned
3	Dissemination	Workshop	The 6th International ModelWriter Workshop in		Planned
4	Exploitation	New system	Exploitation of ModelWriter in ITEA3-ASSUME	T4B	Realised
5	Dissemination	Workshop	The 5th International ModelWriter Workshop		Realised
6	Exploitation	New product	CSV to OWL transformation program		Realised
7	Exploitation	Enhancement	Requirement Documents <-> ReqIF Standard	T4B T4I	Realised
8	Exploitation	Collaboration	Participation of FORD Otosan	T4B	Realised

Realized Exploitation Related Achievements statistics

Dissemination	Exploitation	Standardisation	New company	Patent	Human capital
Total: 10	Total: 10	Total: 5	Total: 0	Total: 0	Total: 0

Work progress during the reporting period

Top 4 technical achievements

1	Integration of the Semantic Annotator developed by LORIA/CNRS into the ModelWriter Prototype
Details	The annotator automatically produces links between text fragments and model elements.
2	Reversible Semantic Processing
3	Formal specification of the key semantic relationships between software & system engineering artefacts
4	Formal verification of the semantic relationships

Top 4 next technical targets

1	Extension of BAFLING to Airbus Data
Details	The prototype developed by LORIA will be extended to handle all normalized rules.
2	Using BAFLING for Synchronization
3	Development of the knowledge base meta model
4	Automated consistency checking

Top 4 issues		Impact
1	Robustness of Semantic Parser	Lack of robustness may result in incorrect or missing synchronization links
Details	The same semantic content may be expressed in different ways. Additionally, text may be ill formed because of typos or grammatical mistakes.	Mitigation action: The semantic parser will integrate robustness mechanisms which allows (i) different formulation of the same content to be mapped to the same DL formulae and (ii) ill formed input to be handled.
2	Well formedness	ill formed text may be rejected by the end user
3	Separated use case related works	A meta model which is not generic enough for the project

4	Scalability of state of the art reasoner engines		Reasoning on big models can be in-efficient

Deliverables (overall status)		Due	Total
Number of deliverables (due / total)		50	112
Already finalized	42	84%	37%
Delayed (> 2 months) on due	8	8	100%
Details	The project has a large number of deliverables which are inherited from the former leader of the project and their management is difficult due to their exhaustive number. As the STG also suggested in the previous PPR, we have provided a new change request to merge some of the deliverables. This new change request will be submitted to the ITEA to be considered after the voting of partners for removing Belgium partners (as their fund has not been confirmed yet). Anyway, 8 deliverables are delayed including: D6.5.1-1 , D6.5.2-1, D6.6.1-1, D4.6.2-1, D6.7.1-1. All of the above-mentioned five deliverables are delayed, since, they are planned for the 1st release of the project and the 1st release is on-going now and will be finalized in early April 2016. Also, deliverables D4.5.1, D4.7.1, D4.3.1-1 are delayed due to the fact that the use case related works are realized separately without having an overall picture that utilizes a knowledge base model that can be used globally. As the use case activities are becoming more mature, we plan to come up with a knowledge base that can be generalized into a common meta-model. Then, we will finalize these deliverables.		
Delayed (> 2 months) on total	70	8	11%
Details	We are not expecting any cascading delay for the other deliverables.		

Actual-vs-planned (overall status)		Current	Total	%
Time elapsed (months)		15	36	42%
Planned effort consumption (PY)		23.5	60.1	39%
Reported actual effort (PY)	0%	20.7	61.1	34%
Discrepancies explanation (partners)	> Ford Otosan (-%): Since the participation of Ford Otosan was officially approved to begin with the year of 2016 by the upper management, no effort had been shown within this semester reporting. > Centre National de la Recherche Scientifique (-53%): A PhD student employed on the project left for personal reasons. It took a while to recruit new staff but we eventually recruited 2 new persons on the project so that the budget should balance out in the end. > Mantis (-33%): Due to slow start of activities related to development of knowledge base metamodel, we were not able to commit all the efforts planned. We plan to catch up in the following periods. Currently, all the partners are trying to carry out some implementations for their own use cases. We decided that we will merge the knowledge base usages at later stages of the project.			
Project technical progress (%)		88%	102%	30-40%
Comments	The first version of the main components are developed such as: > a semantic annotator, > a semantics parser and a text generator, > writer enhancement including markers and mapping/link; > formal specification and configuration of the framework, > visualization and consistency check of semantic relationships, > the graphical user interfaces. The 1st integration is on-going now and the first release is planned for the next month.			

STG feedback on work progress

Feedback to previous STG remarks	STG responses
Considering the reviewers' remarks in the previous STG, the KPIs are now updated and all of them have current and target values along with more explanations. Regarding the risk analysis, proper mitigation actions are provided for the risks. For targeted business impacts, they are updated to state how the target innovations are employed by the partners to compete in the market. Finally, in this PPR, the technical achievements during the reporting period and the goals of the next technical targets are explained clearly and in detail. In addition to the STG remarks of previous PPR, the comments of the reviewers as the conclusion of the 1st project review are considered and related actions are taken by the partners. These actions and their results will be reported in the next project review meeting which is planned to take place in Istanbul on 29th Sep. 2016	