



D2.4.3 State of the Art Wiki Update

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This document describes the update of ADVENTURE's state of the art content repository. The repository is being updated continuously in order to ensure that all ADVENTURE partners are well aware of the latest methodologies and technologies in fields relevant for ADVENTURE.



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Executive Summary

The purpose of this deliverable is to describe how the ADVENTURE consortium updated the State of the Art Wiki-Repository since its initiation. This media repository is intended to contain a set of relevant bibliography items (including books, conference and journal articles and videos). It is further intended to utilize classification and tagging of items to allow an easy navigation. It is being updated continuously during the course of ADVENTURE in order to cope with the fast changing and improving nature of involved methodologies and technologies.

1 Introduction

ADVENTURE – ADaptive Virtual ENterprise manufacTURING Environment – is a project funded in the Seventh Framework Programme by the European Commission. ADVENTURE creates a framework that enhances the collaboration between suppliers, manufacturers and customers for industrial products and services. This section sets the scene for the report defining aims and objectives.

1.1 ADVENTURE Project Aims

The framework proposed by ADVENTURE provides mechanisms and tools that facilitate the creation and operation of manufacturing processes in a modular way. ADVENTURE combines the power of individual factories to achieve complex manufacturing processes, providing tools for partner-finding, process creation, process optimization, information exchange as well as real-time monitoring combined with the tracking of goods and linking them to Cloud services.

There have already been several research projects that address the combination of different independent manufacturers to so-called virtual factories. Most of these research projects focus primarily on the business-side in general and on aspects like partner-finding and factory-building processes in special. However no proven tools or technologies exist in the market that provide the creation of virtual factories applying end-to-end integrated Information and Communication Technology (ICT). ADVENTURE is aiming to provide such tools and processes that will help to facilitate information exchange between factories and move beyond the boundaries of the individual enterprises involved. The collaborative manufacturing process will be optimised by enabling the integration of factory selection, forecasting, monitoring, and collaboration during runtime.

ADVENTURE builds on concepts and methods of Service-oriented Computing and benefits from the advancements in this field. The monitoring and governance of the collaborative processes will be supported by technologies from the Internet of Things such as wireless sensors. Existing tools and services that can be integrated will be considered during the development of the platform for ADVENTURE.

The increased degree of flexibility provided through ADVENTURE will benefit SMEs especially as it helps them to react quickly to changes and to participate in larger, cross-organizational manufacturing processes. Furthermore, ADVENTURE will help manufacturers in assessing the environmental friendliness of actual manufacturing processes and resulting products and services. Other objectives of ADVENTURE include research in areas such as service-based manufacturing processes, adaptive process management, process compliance and end-to-end-integration of ICT solutions.

1.2 Deliverable Purpose, Scope and Context

This document describes the reasoning behind the setup and initiation

of a particular way of dealing with the State of The Art (SOTA) in ADVENTURE and how it has been updated since its initiation.

1.3 Document Status

This document is listed in the DOW as 'public' as the State of the Art Wiki allows keeping track with current developments and technologies that tackle similar challenges as ADVENTURE.

1.4 Target Audience

This deliverable is to be used by all participating project members. It will help them to keep track of current methodologies and technologies that might be applied during the ADVENTURE project. Furthermore, the State of the Art repository will provide external insight into the foundations and technologies that ADVENTURE is based on and allow them to contribute to the media library.

1.5 Abbreviations and General Terms

A definition of general, common terms and roles related to the realization of ADVENTURE as well as a list of abbreviations is available in the supplementary document "Supplement: Abbreviations and General Terms" which is provided in addition to this deliverable.

Further information can be found at: <http://www.fp7-adventure.eu>

1.6 Document Structure

This deliverable is broken down into the following sections: Section 1 deals with the background of the ADVENTURE project and this deliverable, while Section 2 describes the SOTA repository and how it has been updated since its initiation. Section 3 concludes this deliverable.

2 State of the Art - Repository

The SOTA repository allows ADVENTURE members to share, access, classify and tag literature and thoughts about media in their respective fields of expertise. The idea is to create and maintain a living repository, which provides not only means to statically store literature, but also means to allow the consortium members as well as external interested researchers to actively share and discuss media. This media collection is being managed in Zotero¹, a browser-based open source solution for media management, built and maintained by the "Centre of History and New Media" of the George Mason University. An automatic nightly export of the media that is contained in the shared Zotero library has been developed by the consortium. The exported media references are published on a web page, which is directly linked under Dissemination on the ADVENTURE homepage (Figure 1 contains a screenshot of the page):

- <http://www.fp7-adventure.eu/wiki/sota.php>

The ADVENTURE Zotero group is also publicly available on a page on the Zotero home page: <https://www.zotero.org/groups/62639>.

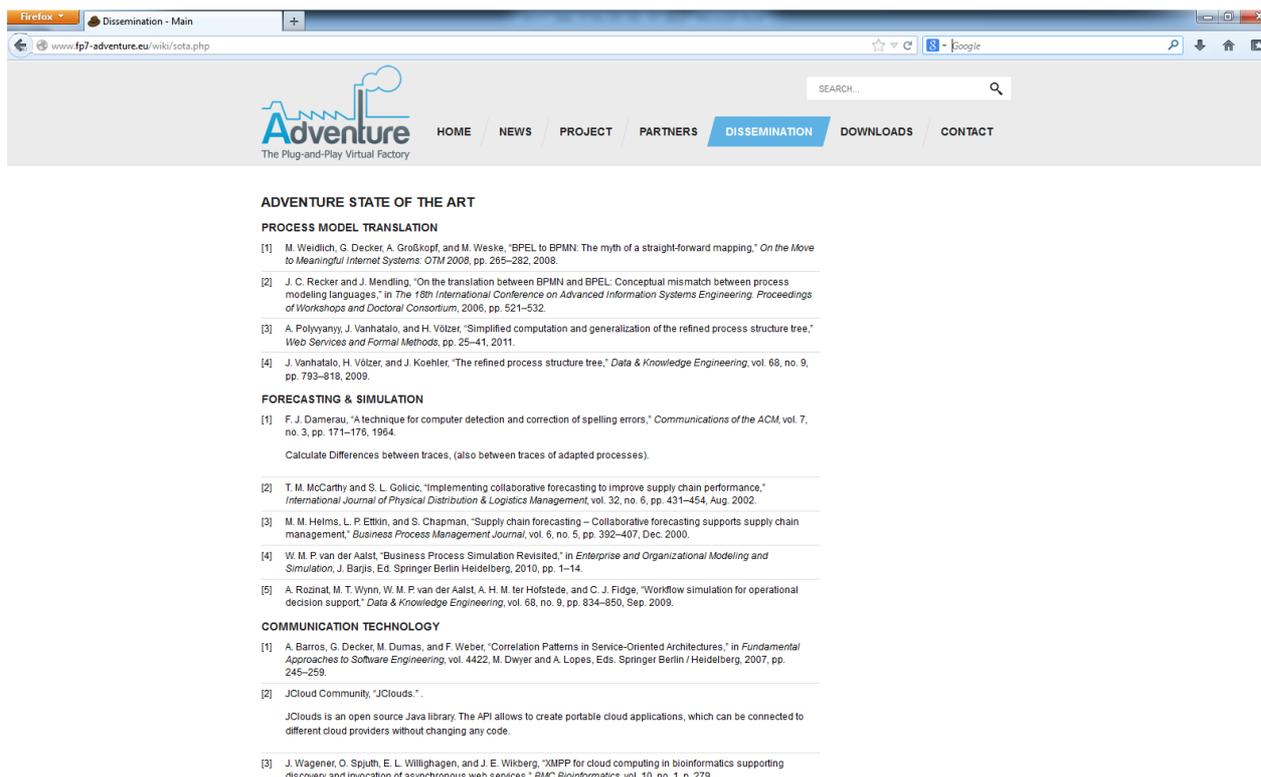


Figure 1: ADVENTURE SOTA Repository

¹ <http://www.zotero.org>

The entries in the SOTA repository are classified into the following categories:

- Process Model Translation: translation between different Business Process Notations and execution languages;
- Forecasting & Simulation: forecasting & simulation in Business Process Management and workflow systems, especially across supply chains;
- Communication Technology: current tools and technologies that may be used for the implementation of ADVENTURE prototypes;
- Processes and Compliance: process execution, adaptation of running processes, evolution of processes, as well as compliance of processes to internal guidelines or external jurisdiction;
- SME and Business Aspects: ICT and virtual organization adoption in SMEs;
- Sensors: smart sensors and their operation and integration into business environments;
- Semantic: description and automatic selection of similar services;
- Negotiation: SLAs and inter-organizational processes;
- Design: process design and redesign.

After its initial setup in month 6, the SOTA Repository has been continuously updated. New entries are continuously added, as the Repository is developing in parallel with ADVENTURE. Currently, the repository includes 130 references with: Process Model Translation (4), Forecasting & Simulation (5), Communication Technology (3), Processes and Compliance (66), SME and Business Aspects (12), Sensors (16), Semantic (16), Negotiation (4) and Design (4).

Furthermore, the established Zotero group is used to organize the publications that have been created by Adventure Partners, which are subsequently being published at <http://www.fp7-adventure.eu/wiki/pubs.php>.

3 Conclusion

This document summarizes the working principle of the ADVENTURE SOTA Repository and describes its updates since its initiation. As stated in Deliverable D2.4.1 and D2.4.2, the first approach towards a SOTA Repository was based on a wiki. The wiki was initially populated with literature, but after its initiation a few challenges arose. These were mainly concerned with people's hesitation to fill the wiki due to the fact that literature is usually kept with other tools like endnote (<http://endnote.com/>) or BibTex (<http://www.bibtex.org/>) and the wiki's inconsistency. These problems have successfully been tackled by the switch to the current system. Since its creation, the SOTA Repository is being continuously updated by the ADVENTURE consortium members and those updates are automatically being inserted into the web page on the ADVENTURE home page.