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Designing for adaptability and evolution in system of systems engineering

DANSE Exploitation Forum

D_8.7.2

Deliverable Information			
Nature	R/O... see DOW	Dissemination Level	PU
Project	DANSE	Contract Number	INFISO-ICT-287716
Deliverable ID	D_8.7.2	Date	18/02/2013 11:24:00
Status	Final	Version	1.0
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CHANGE HISTORY

Version	Date	Reason for Change	Pages Affected
1.0	04.11.2013	done	All

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1 Introduction

1.1 Overview, Purpose and Scope

This document is an accompanying document to deliverable 8.7.1 – DANSE Exploitation Forum. The deliverable itself is an IBM Connections website with public access, containing DANSE exploitation and dissemination materials as a whole and per work packages. The individual work package and tasks owners are responsible for their respective content.

The web site has been established later in the year before the first prototype of the tool-net, and did not have a real value before prototypes are ready for exploitation.

Website address:

<https://www-304.ibm.com/connections/communities/service/html/communityview?communityUuid=8c32ad8d-973f-4d7f-8975-66fb631d1d6f>

Important Note: In the IBM Community website the individual discussion is called a “forum”. To eliminate the confusion between the terms the originally defined (in DOW) “exploitation forum” will be referred to as “exploitation community” or simply “community”.

The main purpose of this accompanying document is to outline the structure of the exploitation community with intent to organize it and guide the partners in creating additional topics in an easily navigatable manner.

2 Community structure

2.1 Overall structure

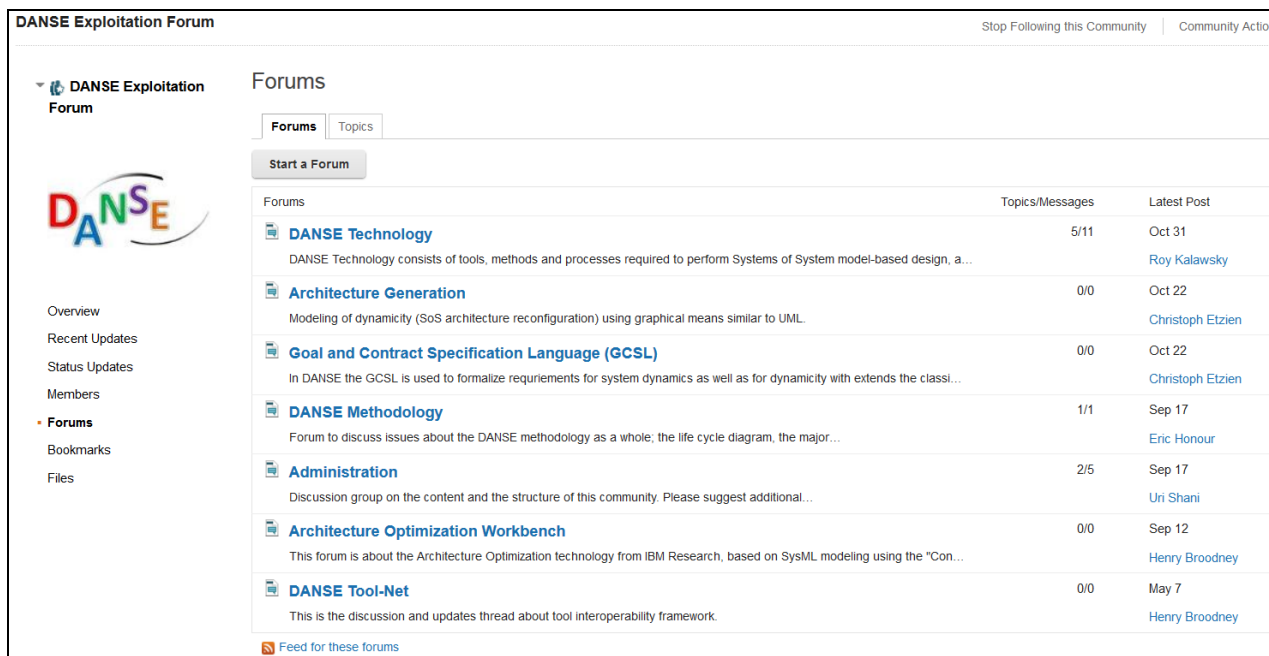
The community has been structured differently a bit from the ideas presented in the first report on this service on M12. The elements maintained in this service consist of **Topics** and **Forums**, where topics are associated with specific forums. Each topic may have a hierarchy of threads of replies to the topic. Each user registered on this service may choose to follow a certain forum, which will be included in a summary report sent to the user on a daily or weekly basis.

The user profile can be setup to indicate how these reports are mailed to him/her.

DANSE prototype II (see D8.4) consists of a set of about 20 technologies, consisting of off-the-shelf tools as well as tools extensions and new tools developed as part of the DANSE research activity.

Each of these technologies deserve a forum, which is led by one of the partners who is most critical in the development, maintenance and support of that technology to the user community. These forums are still being set up at this point in time, since the DANSE members are slow to adopt this mean of support.

The forums presently are listed in the next figure:



The screenshot shows the 'DANSE Exploitation Forum' interface. On the left is a navigation menu with options like Overview, Recent Updates, Status Updates, Members, **Forums**, Bookmarks, and Files. The main content area is titled 'Forums' and includes a 'Start a Forum' button. Below this is a table listing various forums with their respective topics/messages and latest posts.

Forums	Topics/Messages	Latest Post
DANSE Technology DANSE Technology consists of tools, methods and processes required to perform Systems of System model-based design, a...	5/11	Oct 31 Roy Kalawsky
Architecture Generation Modeling of dynamicity (SoS architecture reconfiguration) using graphical means similar to UML.	0/0	Oct 22 Christoph Etzien
Goal and Contract Specification Language (GCSL) In DANSE the GCSL is used to formalize requirements for system dynamics as well as for dynamicity with extends the classi...	0/0	Oct 22 Christoph Etzien
DANSE Methodology Forum to discuss issues about the DANSE methodology as a whole; the life cycle diagram, the major...	1/1	Sep 17 Eric Honour
Administration Discussion group on the content and the structure of this community. Please suggest additional...	2/5	Sep 17 Uri Shani
Architecture Optimization Workbench This forum is about the Architecture Optimization technology from IBM Research, based on SysML modeling using the "Con...	0/0	Sep 12 Henry Broodney
DANSE Tool-Net This is the discussion and updates thread about tool interoperability framework.	0/0	May 7 Henry Broodney

Figure 2-1: Exploitation forum community for DANSE: Main forums.

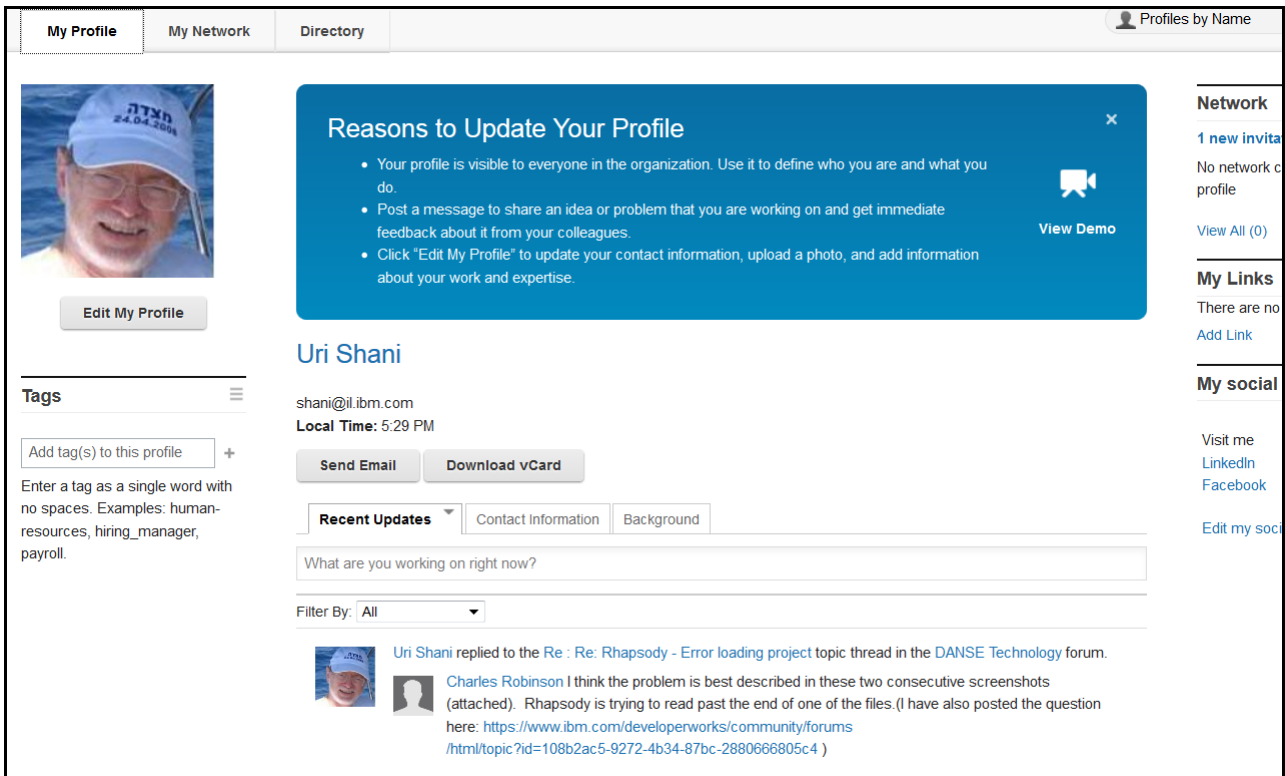
- Administration – deals with community management, structure, rules and general DANSE information.

- Technology forums – several forums, each for each of the technologies. Will serve for discussions and information about technologies in DANSE, their purpose, non-confidential description and links to material in the art. This section may also contain workflows build on joint (sequential or simultaneous) usage of several DANSE technologies – yet that depends on the activities by the participants.
- Use cases – TBD by users. Intend to discuss about potential applications domains, including the four DANSE use cases.

2.2 Users

A relentless effort to get all of the DANSE users to register with this service resulted at the time of this writing on 28 users, which is about 50% of the DANSE mailing list size. Our intention is to get ALL of the DANSE users on this service.

Some of the users will start technology and users forums in which the technologies can be exploited. All users can set up their profile to indicate how they want to get reports on activities in this community service. Summaries of activity are sent on a daily or weekly basis to the users on forums they choose to follow. A summary of the user activity is also presented in the user profile:



The screenshot shows a user profile for 'Uri Shani'. At the top, there are tabs for 'My Profile', 'My Network', and 'Directory'. A profile picture of a man wearing a white cap is visible. Below the picture is an 'Edit My Profile' button. A large blue banner titled 'Reasons to Update Your Profile' contains three bullet points: 'Your profile is visible to everyone in the organization...', 'Post a message to share an idea or problem...', and 'Click "Edit My Profile" to update your contact information...'. Below the banner, the user's name 'Uri Shani' is displayed, along with email 'shani@il.ibm.com' and 'Local Time: 5:29 PM'. There are buttons for 'Send Email' and 'Download vCard'. A 'Recent Updates' section shows a forum post where Uri Shani replied to a thread about 'Rhapsody - Error loading project'.

Figure 2-2: User profile

In addition, the user can set up how often such summaries are mailed to him/her:

Email Preferences
Application Access

Notifications Preferences

Send emails to this address: shani@il.ibm.com

Receive notifications from other people by email Email language: Language used in last visit

How often do I want to be notified about:

Responses & Notifications	Individual Emails	Daily Newsletter	Weekly Newsletter	No Email
Responses to my content and Notifications for me	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Content that I am following	Individual Emails	Daily Newsletter	Weekly Newsletter	No Email
People	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Communities	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blogs	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Tags	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Activities	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Forums	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Files	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wikis	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 2-3: Users settings for feedback from the forums.

2.3 Administration Forum

This section will include presently two topics which discussed the management and organization of this community:

- Exploitation Forum Organization – this topic discussed the general organization of this community as presented in this document.
- Forum usage guidelines– this topic have an initial post outlining the rules of conduct for the community and the guidelines for posting information, non-confidentiality, etc.
- List of publications – TBD – not applied yet. This topic will include a list of DANSE related publications from all partners with links (where applicable) to the publication. Publications will not be posted on the website in order not to violate the rules of publication (publisher) for the original publication venue. Yet, this is a replication of other means of DANSE such as the DANSE web site.
- List of related events – TBS – not applied yet. This topic will include past and future events either in SoS area or with relevance to one or several technologies in DANSE. This is too a replication of the DANSE web site. Yet, when event relate to exploitation, than repeating them in this forum will be valuable.

2.4 Technology Forums

This group of forums will include topics for the technologies that are used and evolved in DANSE. The responsibility for leading and moderating the topic lies with the specific technology provider.

The topics shall also include stories of successful and unsuccessful application of the specific technologies and the best known methods for such.

Special forum is the “Danse Technology” forum in which discussion on the DANSE technology is presented to include:

1. How to work with this forum
2. Various issues by users of the DANSE technologies

Table 1 outlines the topics of the section.

#	Technology	Partner	Task in DOW
1	SoS Architecture Patterns	LU	WP5
2	DANSE Technology	IBM	WP4-8
3	GCSL	ALES	T6.3
4	Architecture Generation	OFFIS	-
5	SoS Meta-Modeling	OFFIS	T6.4
6	Simulation	ALES	T7.1
7	Abstraction	OFFIS	T7.3
8	Statistical Model Checking	INRIA	T7.4
9	Formal Verification	ALES	T7.5
10	Optimization	IBM	T7.8
11	DANSE Tool-net	IBM	WP8
12	DANSE Methodology	Honorcode	WP2

Table 1 – List of topics in the technology section of the exploitation community

Status: 2 is active, 3 and 12 established. Rest are still pending.

2.5 Applications and Usage Forums

These forums are for exemplifying the usage of the specific technologies in various engineering workflows.

Thus in addition to the technologies the topics will discuss other important aspects, such as:

- Prerequisites for starting a workflow and the setup required
- The information flow between tool and tool
- The expected results
- Effort and skill required to implement and execute
- Other aspects as may deem appropriate by the members of the community

Similarly to the technologies section the topics shall also include stories of successful and unsuccessful application of the specific workflows and the best known methods for such.

Table 2 summarized the initial list of workflows to be included in the forum.

Version	Status	Date	Page
1.0	Final	2013-11-27	9 of 12

Workflow	Partners	Notes
Pattern based Architecture Synthesis	IBM, LU	Usage of patterns as input into architecture optimization via the tool-net
Design Verification	ALES, INRIA, EADS FR	Usage of simulation and statistical model checking for verifying the design requirements defined in GCSL

Table 2 – List of workflows

Status: TBD

2.6 Methodology and Use Cases Forums

These forums will include the overall discussions on DANSE proposed methodology, based on the technologies and workflows. The objective of the discussion is to elicit the overall perceived value from applying all the DANSE developments.

This section will also include discussions on the specific use cases and the respective applicability of the technologies and workflows (i.e. what methodological subset may be used). It is intended that with time there will be additional use cases, from the DANSE partners and from external parties.

Table 3 outlines the initial list of use cases (essentially the four original DANSE use cases per the DOW).

Use case	Partner
Emergency response	EADS DE
Air Traffic Control	Thales
Integrated Water Treatment and Supply	IAI
Autonomous Ground Transport	Carmaq

Table 3 – List of use cases

Status: TBD

3 Abbreviations and Definitions

DANSE	Design for Adaptability and evolution in System of systems Engineering
GCSL	Goals and Contracts Specification Language
DOW	Description Of Work
IAI	Israeli Aerospace Industries
EADS	European Aeronautic Defense and Space Company
LU	Loughborough University
ALES	Advanced Laboratory for Embedded Systems
IBM	International Business Machines corporation
SoS	System of Systems

4 References

[1] DANSE Exploitation Community Address:

<https://www-304.ibm.com/connections/communities/service/html/communityview?communityUuid=8c32ad8d-973f-4d7f-8975-66fb631d1d6f>