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COMPASS

Dissemination Report 2

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Abstract

This report summarises the dissemination activities carried out during the second year of COMPASS. The activities have included continued development of the COMPASS website, a webinar in the INCOSE SoS Working Group series, newsletters, white papers and technical publications, recruitment of members of the COMPASS Interest Group and a CIG workshop.

Successful dissemination has taken place during the year, with increased activity in the CIG. These activities will be built on in the final year, with further workshops and a Summer School planned alongside continued scientific and technical publications, tools releases and tutorial material.

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1 Introduction

This report provides a summary of the dissemination activities which have taken place during Year 2 of COMPASS. Section 2 summarises progress and usage of the website, social media, webinar and publications, including scientific and technical, white papers and newsletters. This is followed by a summary of COMPASS Interest Group (CIG) activity and the workshop held in May in the UK.

Section 3 reviews successes and areas to build on in the final year of the project, including further workshops and a Summer School at the end of the project.

2 Dissemination activities in Year 2

The following sections discuss progress in the various dissemination activities over Year 2 of the project.

2.1 Website status

The COMPASS website (`www.compass-research.eu`) continues to be advertised widely in the project fiche, social media (Twitter and LinkedIn) and the newsletter.

As in the first year, the website is kept up to date with news, publications and public deliverables. The news feed was replaced in May with a twitter feed; Section 2.2 describes this in more detail.

Updates to the structure of the website have included the following:

- More images on front page
- Accessible list of key project outputs
- List of related SoS projects
- More emphasis given to CIG.

Month	Visits	Unique Visitors	Pages/ Visit	% New Visits
Dec 2011	79	57	2.62	72
Jan 2012	207	119	1.99	51
Feb 2012	247	145	2.09	49
Mar 2012	256	148	2.04	48
Apr 2012	141	84	2.42	47
May 2012	195	120	2.05	50
Jun 2012	224	110	2.38	35
Jul 2012	181	118	2.40	54
Aug 2012	185	119	2.01	53
Sep 2012	188	130	2.53	58
Oct 2012	340	219	2.18	58
Nov 2012	239	151	2.27	49
Dec 2012	191	113	2.01	49
Jan 2013	223	149	2.19	52
Feb 2013	243	142	1.60	46
Mar 2013	265	176	2.11	55
Apr 2013	282	205	2.56	60
May 2013	335	180	2.11	42
Jun 2013	327	180	1.92	42
Jul 2013	268	156	1.97	47
Aug 2013	295	155	1.93	41
Sep 2013	374	211	2.17	47

Table 1: COMPASS monthly website usage statistics for COMPASS Years 1-2

2.1.1 Analytics

Access to the website continues to be tracked using Google Analytics. Table 1 provides a monthly summary of website access for Years 1 and 2.

It was observed in the Year 1 dissemination report that the percentage of new visits held at around 50% for most of the year with increases to 54% in July, and 53% in August, coinciding with conference attendance at INCOSE, SoSE and FM. From September 2012 onwards, new visits fluctuated around 46-60% until May, with another jump to 47% in July. The number of unique visitors has been consistently higher than in Year 1, peaking in October and April.

In year 2 of the project just under 80% of visits to the website are from the cities of the project partners. Table 2 summarises data on visits over Year 2 of

the project, excluding the cities of Newcastle, Aarhus, York, Bremen, Trieste, Recife. Several of the other cities correspond to CIG member locations.

Country/Territory	Visits	Pages / Visit	Avg. Duration	% New Visits	Bounce Rate
London	88	2.72	233.11	47.73%	47.73%
El Segundo	80	1.24	35.45	96.25%	83.75%
Derby	52	1.92	152.21	21.15%	63.46%
(not set)	44	1.80	34.25	86.36%	72.73%
Mundelstrup	34	1.15	45.21	0.00%	85.29%
Bristol	32	2.97	248.19	34.38%	37.50%
Singapore	30	2.47	133.27	66.67%	43.33%
Torrance	28	1.61	15.75	92.86%	67.86%
Copenhagen	25	1.60	855.96	68.00%	64.00%
Chiyoda	25	1.84	634.28	24.00%	56.00%
	1877	2.09	128.52	67.23%	62.17%

Table 2: Top 10 website visitors by city, excluding project partners

2.1.2 Document Downloads

Since the end of May 2013, data has also been tracked on downloads of public deliverables, white papers and the COMPASS tool. The demographics here are also dominated by project partners. Table 3 shows numbers of downloads of public deliverables, with the project partner cities excluded. Most deliverables are listed only on the Deliverables page, however primary outputs (SoS Requirements Guidelines, D211; COMPASS Tool Documentation: User Manual, D312a; CML Definition, D232, and the COMPASS Tool) and White Papers are also listed on the home page. The table distinguishes downloads of the deliverables from these different sources, demonstrating that the "Front Page" source is by far the most popular. On the down side, this will contribute to the Bounce Rate on the site which remains quite high.

The following observations can be made about the website statistics:

- It remains the case that project partners account for the majority of the website visitors, but traffic from elsewhere has increased.
- Short visits are still common, with bounce rate and average duration similar to Year 1. As noted above, links to key outputs from the home page do have the side-effect of discouraging long visits.

Deliverable	Unique Events
D112 - Convergence Report 2	3
D211 - Report on Guidelines for SoS Requirements	8
D211 Front Page	16
D211 appendix	2
D212 - Initial Report on Guidelines for Architectural Level SoS Modelling	4
D221 - Initial Report on SoS Architectural Models	5
D222 - Initial Report on Combining SysML and CML	1
D223 - Report on Modelling Patterns for SoS Architectures	2
D224 - Final Report on Combining SysML & CML	7
D232 - CML definition 1	1
D232 Front Page	12
D233 - CML definition 2	3
D311a - First Release of the Compass Tool - User Manual	2
D312a - Second Release of the Compass Tool - User Manual	2
D312a Front Page	10
D312b	1
D312c - Second Release of the Compass Tool - Tool Grammar Reference	1
D321 - Initial Simulator for CML	4
D511 - Website, Project Fiche & Set up of Online Community	2
D512 - Initial Dissemination Plan	1

Table 3: Downloads of Public Deliverables since May 2013 (excluding project partner cities). Unlisted deliverables had no downloads in this period. "Front Page" indicates that the download was selected from the "Project Outputs" section of the home page.

2.1.3 Sources

To establish where people are coming from to reach the website, we can look at the main sources of traffic. 54% of traffic in Year 2 comes from search engines, 32% is direct traffic, and 14% is referral from another site.

The majority (72%) of direct traffic is to the home page, but 14% comes direct to the deliverables page. Note that these figures do not exclude traffic from project partners.

Much of the referral traffic comes from links on project partner sites, with other sites `hipeac.net` (European Network of Excellence on High Performance and Embedded Architecture and Compilation), `sourceforge.net` and `linkedin.com` also featuring in the top referrers.

2.2 Social networking

A twitter account was started in May 2013, and launched at the CIG workshop meeting. The account name is `@Compass_SOS`. The aim is to increase exposure of COMPASS activities by regularly tweeting project news and retweeting relevant news from members of the project. The account currently has 23 followers and follows 51 other accounts, including related SOS research projects.

A members-only LinkedIn group has also been created to provide a forum for COMPASS Interest Group members and members of the COMPASS consortium.

2.3 INCOSE SoS Working Group Webinar

The INCOSE SoS Working Group runs regular monthly webinars on Systems of Systems, coordinated by Eric Honour. Speakers in the webinar series have included Dan DeLaurentis, Mike Henshaw, Mark Maier, Ron Williamson and Judith Dahmann. A recurring theme in the webinar series is the potential for model-based techniques to address the difficulties of SoS engineering by early exploration of alternative designs.

A COMPASS webinar on "Model-based Engineering for Systems of Systems" was presented in this series on 26 April 2013. John Fitzgerald gave a presentation introducing the project and its approach using examples from the

emergency response and distributed audio/video case studies to illustrate the modelling languages and toolset.

Following the webinar, John Fitzgerald and Claire Ingram attended a meeting of the INCOSE SoS Working group at the annual INCOSE conference in Philadelphia.

2.4 White papers

Four white papers have been published to date. White papers present short entry-level technical reports on topics within the project engineering.

The paper titles are:

- WP01: Guidelines for SoS Requirements, Simon Perry and Jon Holt (Atego)
- WP02: SysML Blocks in CML, Alvaro Miyazawa, Lucas Lima and Ana Cavalcanti (York)
- WP03: SysML State Machines: a formal model for refinement, Alvaro Miyazawa and Ana Cavalcanti (York)
- WP04: A Dwarf Signal in CML, Simon Foster, Jim Woodcock (York)

The white papers can be found on the project website.[1] Further white papers are in progress to introduce the CML tool and RT Tester integration. White papers undergo a brief editorial review before publication. We are also introducing a process of informal review by CIG members to help ensure papers are pitched at the right level.

2.5 Conferences and Publications

COMPASS material has been presented at several conferences and workshops. Publications from the past year are listed below with citations to the relevant paper in the References section of this report. Publications are listed on the COMPASS website[2], with links to pdf copies where available.

- 4th International Symposium on Unifying Theories of Programming (UTP), Paris, France, August 2012, (Revised Selected Papers) [WB13]

[1] `www.compass-research.eu/whitepapers.html`
[2] `www.compass-research.eu/publications.html`

- 13th IFIP WG 5.5 Working Conference on Virtual Enterprises, (PRO-VE), Bournemouth, UK, October 2012 [FBP12]
- IFIP International Conference on Testing Software and Systems (ICTSS), Aalborg, November 2012 [BPS12]
- 7th Conference on Systems Software Verification (SSV), Sydney, Australia, November 2012 [MP12]
- 11th International Symposium on Autonomous Decentralized System (ISADS), Mexico City, March 2013 [AFPR13]
- 8th Workshop on Model-Based Testing (MBT), Rome, March 2013 [Pel13]
- 7th Annual IEEE Systems Conference (SysCon), Florida, April 2013 [APR+13, BPHP13]
- 8th International Conference on System of Systems Engineering (SoSE), Philadelphia, USA, June 2013 [KSNK13]
- 10th International Colloquium on Theoretical Aspects of Computing (ICTAC), Shanghai, China, August 2013 [FW13]
- 16th Brazilian Symposium on Formal Methods (SBMF), Brasilia, Brazil, September, 2013 [BW13, MF13].

Papers are also to appear at ICFEM (15th International Conference on Formal Engineering Methods, New Zealand, Nov 2013) [MLC13] and ICTSS (25th IFIP International Conference on Testing Software and Systems, Turkey, Nov 2013) [PH13].

In addition to the above publications, the 11th Overture Workshop was held in Aarhus in August 2013 organised by COMPASS partners in Newcastle and Aarhus. Presentations related to COMPASS included the COMPASS Proof Obligation Generator and updates on the Overture/COMPASS tool. Proceedings of the workshop will appear as a technical report of Aarhus University.

Journal and conference papers currently in review at the time of this report include:

- *A model-based approach for requirements engineering for system of systems*, submitted to IEEE Systems Journal.
- *Model-based Engineering of Systems of Systems*, submitted to ACM Computing Surveys.

- *SysML State Machines: a formal model for refinement*, submitted to Software and Systems Modelling.
- *Traceable engineering of fault tolerant SoSs*, submitted to HASE 2014.

A COMPASS workshop on Engineering Dependable Systems of Systems has been accepted for the European Dependable Computing Conference (EDCC) 2014, to be held in Newcastle in May 2014, and a tutorial on UTP in Isabelle will be given at the FM Symposium in Singapore, also in May 2014.

2.6 Software downloads

The COMPASS Annual Exploitation plan (D52.3,[PLKL13]) summarises current tool activities. Software is coordinated using a Sourceforge tool repository[3], which is actively used by project members.

The number of tool downloads is tracked on Sourceforge. 36 downloads have been tracked since 1st May 2013, with the majority coming from Newcastle and Denmark, but some coming from Argentina and the Philippines.

As the tool becomes more stable, further activities are taking place to document and aid dissemination of the tool. A number of tutorial videos have been recorded, which will initially be available to CIG members for comment. Public versions will become available thereafter. A compendium of case study examples is also being developed under workpackage WP31, which will cover models in CML to begin with, to be followed by examples in SysML.

2.7 Newsletters

Two newsletters have been released during the year. Newsletter 2, released in November 2012, headlined with the first release of the CML tool. Newsletter 3, released in May 2013 gave an overview of Smart Grid case study (one of the CIG challenge problems) and a summary of the COMPASS Model-Based System Engineering approach. Standing items in all newsletters include upcoming conferences, news updates and recent public deliverables, and information about the COMPASS Interest Group.

Newsletters are distributed to CIG members, sent to project partners for distribution and made available on the web site[4].

[3] `sourceforge.net/projects/compassresearch/`
[4] `www.compass-research.eu/newsletters.html`

2.8 COMPASS Interest Group (CIG)

Members of the COMPASS Interest Group are listed in the second Annual Exploitation Report [PLKL13]. Activity with the CIG this year has focussed on the CIG Workshop, which took place in Bristol, UK on 22 May 2013. The workshop consisted of five talks which introduced the motivation for COMPASS, illustrated the applicability of the COMPASS technologies in a System of Systems domain, presented the guidelines for requirements and architecture description, summarised the CML language and gave a demonstration of model-based testing. Bristol was chosen as the location for the workshop as a convenient location for UK-based CIG members, who make up the majority of the CIG. Representatives of five companies accepted the invitation to attend the workshop (Roke Manor, Rolls Royce, Jaguar Land Rover, Altran and BAE SYSTEMS).

The workshop report D51.4 [Rid13] summarises the content and discussion which took place at the workshop. Further workshops are planned for year 3 to give an opportunity for non-UK partners to attend and to show the COMPASS approach applied to case studies.

3 Summary and Plans for Year 3

Successes from Year 2 include the following:

- Presence at a range of relevant conferences, including a return to SoSE and a presence at INCOSE, SysCon, ICTAC, SSV.
- Increased number of CIG members, successful CIG workshop and increased interaction with CIG members.
- Improved design of website, increased traffic to website, significant amount of traffic and document downloads from outside the project.

Areas to build on in the final year are:

- Further increase the number, range and interaction with CIG members. Increased communication via social media (LinkedIn, twitter), as well as direct contact, workshops and conference networking, is key.
- Capitalise on the increased quantity of material to disseminate. In particular, white papers, newsletters, tools tutorials, manuals and example

models are all becoming available and can be disseminated through the established channels.

- Make use of search engine optimisation tools to identify areas where improved content and/or easier to locate material will help to drive more traffic and encourage longer durations.
- Plan and publicise the CIG Challenge Workshop and Summer School events, both towards the end of the final year.

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