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Abstract	This report is summarising dissemination activities after first year of the project.

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## Content

1	Introduction .....	4
1.1.	Summary (abstract) .....	4
1.2.	Purpose of document .....	4
1.3.	Partners involved .....	4
2	Dissemination plans .....	6
2.1	Overview .....	6
2.2	Universities plans for project dissemination .....	6
3	Dissemination activities .....	9
3.1	Dissemination materials and channels .....	9
3.1.1	Project website .....	9
3.1.2	Project logo and presentation template .....	10
3.1.3	Project leaflet and poster .....	10
3.1.4	Events .....	12
3.1.5	Scientific journals and other means of printed publication .....	12
3.2	Project internal communication .....	13
3.2.1	Mailing-list and groupware server .....	13
3.2.2	Project Meetings .....	13
	Appendix I to the deliverable D93.81 - "Events and publications table" .....	14
1.	Information about dissemination activities of R5-COP project/results (events/publications, etc.) - 1 <sup>st</sup> project year .....	14
2.	Information about events/publications where dissemination of R5-COP project/results is planned for the 2 <sup>nd</sup> project year .....	21

## List of figures

Figure 1	R5-COP website .....	9
Figure 2	Project logo .....	10
Figure 3	Presentation template .....	10
Figure 4	R5-COP poster .....	11
Figure 5	R5-COP leaflet .....	12

# 1 Introduction

## 1.1. Summary (abstract)

This deliverable describes in short the envisaged dissemination process of the R5-COP project. The overall dissemination strategy in R5-COP project is based on the provisions of the project Grant Agreement, particularly as described in Technical Annex Part B.

The purpose of the D93.81 is to report all dissemination activities carried out within the R5-COP during the first year of the project as well as to give an overview to the planned dissemination activities during the second year of the project.

All partners were encouraged to actively disseminate the project results. The following list of tasks was or will be implemented to execute such actions:

- production and dissemination of advertising and promotional materials of the project,
- presentation of the project results at conferences, workshops and other events,
- organisation of thematic workshops and other R5-COP events,
- preparation of papers and scientific publications for conference proceedings and journals,
- development of relations with other European research projects.

It is the first issue of the document, which constitutes the basis for coordination of the dissemination process and will be updated on the permanent basis during the project lifetime, especially by the means of the “Events and publications table” (Appendix I to the deliverable). Therefore the deliverable shall be treated as a living document, which will be updated regularly and finalised in month 36.

## 1.2. Purpose of document

The purpose of this document is to summarise the dissemination process of the R5-COP during the first year of the project realisation and execution of the dissemination activities within. It will also give an overview to the planned dissemination activities during the second year of the project. The document will subsequently evolve in the next project periods towards the final report on the dissemination process to be delivered in month 36.

## 1.3. Partners involved

Partners and Contribution	
Short Name	Contribution
ALT	ALT created an inventory of the project partners plans for dissemination. Moreover ALT organized a ROS workshop.
TUBS	TUBS set up the public server infrastructure filled with initial content and acquired the domain r5-cop.eu for the project. Furthermore TUBS presented R5-COP to the public at several occasions.

DTI	DTI has authored and presented two publications (one with VTT). DTI is displaying and show-casing the created WP36 MLF proof-of-concept demonstrator – the balloon popping robot using the MLF v0.1 – in its living-labs in Odense. Also a poster displaying the MLF concepts are on continuous display.
VTT	VTT together with DTI has authored and presented one publication.
BME	BME presented its initial research results and ongoing activities in the project at suitable public conferences and workshops.
TUE	An abstract of the work performed in task 23.4 was created and published.
EMTE	EMTE has worked in performing the tasks 93.1 and 93.2.
PIAP	PIAP has prepared initial documentation (questionnaire) referring to the potentially exploitable results from R5-COP - modular console and map component (related to task 93.2).
BUT	BUT presented the project and their work during suitable public event and is working on public visibility of R5-COP including presentation to local industry parties.
CAMEA	CAMEA updated their dissemination plans for the second year of project realisation.
TRI	TRI updated their dissemination plans for the second year of project realisation.

## **2 Dissemination plans**

### **2.1 Overview**

For the whole project following actions are planned:

a) First year dissemination activities

Dissemination activities carried out during first year of the project will include:

- designing the project logo,
- setting up the project website,
- publishing brochures/posters,
- spreading information about R5-COP project in every suitable context (by all partners),
- submitting first papers about the project.

b) Second year dissemination activities

Dissemination activities carried out during second year of the project will include:

- extending the project website,
- promoting the project on conferences and events,
- submitting papers to academic journals and engaging with the wider press.

c) Third year dissemination activities

Dissemination activities carried out during third year of the project will include:

- promoting the project on conferences and events, focusing on exploitable results,
- submitting papers to academic journals and engaging with the wider press,
- creating a detailed exploitation plan for the final project results.

d) Dissemination activities after the end of the project

After the end of the project the consortium will aim to promote the advances in technology developed by the R5-COP project.

The project's work and results will continue to be a part of the dissemination activities by all partners whenever the context allows it. Publications – both scientific and popular – will continue to be written after the end of the project. It is planned that the project website will remain online afterwards so the project partners could individually update it with further developments resulting from the project's work.

Dissemination activities planned for the next year of the project are described in Appendix I to the deliverable.

### **2.2 Universities plans for project dissemination**

Dissemination of the project and research results is one of the key activities of universities, so all academic partners will play a key role in disseminating project results through conferences and journals.

The academic partners will introduce the results of R5-COP in lectures and labs in their curriculums of bachelor and master programs as well as in PhD programs. This includes bachelor, master and PhD theses written in the context of R5-COP.

A detailed description of the particular activities of each academic partner can be found below:

- **Budapest University of Technology and Economics (BME)** plans to publish project results at relevant conferences and journals. Technologies and examples will be integrated into the university education at BME, most notably into their MSc EE specialization in Embedded Systems, MSc SE specialization in Intelligent Systems, and MSc SE specialization in Critical Systems. These include several courses and laboratory exercises. Further use of project results occurs through education, consultancy, and knowledge/technology transfer for industrial partners. With respect to industrial use, the results will be applied to cooperation with spin-off companies working in the field of embedded and safety-critical systems.
- **Brno University of Technology, Faculty of Information Technology (BUT)** will introduce the results of the project in educational process at BSc., MSc. and Ph.D. level. It will become directly part of the educational process as well as laboratory tasks and topics of M.Sc. and Ph.D. works. BUT will also, through its technology transfer department, offer the project results achieved at BUT for licensing.
- **Friedrich-Alexander University of Erlangen-Nuremberg, Chair of Software Engineering (FAU)** will make use of the project results for the purpose of education and of standardization. The insight gained during the project will enrich the current software engineering curriculum and extend the research topics to be investigated by Master and PhD students. In addition, the results achieved within the project will be also disseminated within national and international (pre-)standardization committees with which the FAU Chair of Software Engineering is actively cooperating, like EWICS TC7 (European Workshop in Industrial Computer Systems, Technical Committee on Reliability, Safety and Security), DKE (Deutsche Kommission für Elektrotechnik, Elektronik, Informationstechnik) and VDI (Verein Deutscher Ingenieure), in order to stimulate the development of new guidelines aimed at the development of reliable and safe controlled-based systems. Dissemination of project results will be ensured by presentations and publications at national and international events.
- **HU University of Applied Sciences Utrecht (HUT)** will incorporate the R5-COP project results into their Equiplet platform (demonstration environment industrial reconfigurable manufacturing systems) to advertise the R5-COP project to their industrial partners. The Equiplet platform is annually presented at leading Dutch robotics fairs (Dutch precision fair and Vision & Robotics fair). Further, the project results will be applied to improve lectures and courses
- **Institute of Mathematics and Computer Science of Latvian University (IMCS)** will incorporate the R5-COP project results into their lectures and lab courses. IMCS have a long standing cooperation with Latvian businesses and universities in several application domains, such as, communication, agriculture, sensor networks. IMCS plan to introduce R5-COP results in cooperation and testing of their RUAV and sensor networks into those future common projects.
- **Luleå University of Technology (LTU)** as an Academic partner will focus mainly in dissemination activities in the form of conference and journal publications as well as participating in workshops, summer schools, etc. However, it should be mentioned that LTU is one of top Universities in Sweden in the area of cooperation between the Academia and the Industry. The University hosts multiple organizations that boost creativity and such cooperation with characteristics examples to be ProcessIT, CENTEK and CDT. In a National level and in cooperation among the Swedish partners as well as in an international level specific pathways will be investigated for

exploiting the full technological platforms of R5-COP and the corresponding modular components in related industries such as the mining, forestry and automotive sectors, sectors that Sweden is posing a worldwide leading position.

- **Norges teknisk-naturvitenskapelige universitet (NTNU)** plans to disseminate results at national and international conferences, as well as directly to industrial partners in work- shops. The Technical report delivered for in-motion-planning on embedded systems will be an important tool for dissemination. The results in the project will be utilized in later projects on robotics, both within the premises of NTNU as well as with industry.
- **Saxion University of Applied Sciences (SAX)** will incorporate the R5-COP project results into their lectures and lab courses. They will also advertise the R5-COP project to their industrial partners and will look for possible applications of the R5-COP results in the technological challenges proposed by their SME industrial partners.
- **Technische Universität Braunschweig (TUBS)** will introduce the results of R5-COP in lectures and labs of its established curriculum of Informations-Systemtechnik, computer science and electrical engineering. The very up-to date contents are highly appreciated both by undergraduate and graduate students. Bachelor and master theses will be written in the context of R5-COP.

In research, TUBS's international position will highly benefit from the results of R5-COP. It is a unique opportunity to combine research in embedded system architectures and design automation with combined research in parallel computing systems. There will be cross fertilization with other ongoing projects, such as the FP7 QI2S featuring robust, configurable architectures for flexible hyperspectral imaging and MACSPACE focusing on dedicated high-performance architectures for use in critical environments, to name just 2 examples. Furthermore, TUBS will get an opportunity to build up competence in multi-core certification standards and processes that will help in further industrial research contracts.

- **TU Eindhoven (TUE)** will apply the R5-COP project results to their lectures and lab courses and make use of them in their several industry collaborations on robotic applications. The results will also be applied to the RoboCup@Home competition. Results will be presented as conference and journal contributions of PhD students and made accessible via online repositories such as the Robotic Open Platform and ROS repositories.
- **UTC** intends to disseminate and exploit the achieved results in the following way:
  - publications in relevant international conference proceedings, journals, book chapter, etc.,
  - integration of achieved results in university courses, such as Artificial Vision and Artificial Vision for Mobile Robots,
  - elaboration of Bachelor, Master and/or PhD diploma activities in the context of the R5- COP project,
  - increasing the competence and the visibility of the UTC's research group towards accessing future projects,
  - harness the research results by aiding industrial partners towards mass production.



### 3 Dissemination activities

#### 3.1 Dissemination materials and channels

The dissemination materials are understood as all the items (either text, graphic or other form) specially designed for the purpose of the project dissemination process and carrying the content or elements directly identifying them as project-related. This may cover the wide variety of forms, including:

- website,
- leaflets and posters,
- media releases and public materials,
- advertising gifts,
- presentations,
- movies.

In the R5-COP project several kinds of the dissemination materials have been developed. Some of the dissemination materials will evolve during the project course, as the volume of information on the project progress and results will increase, some were developed for the whole life-cycle of the project, such as e.g. project's logotype.

The dissemination materials developed within the first year of the project duration are presented in the next subsection. Presentation template, poster and leaflet presented below show the ARTEMIS logo – it is supposed to be replaced with ECSEL logo soon.

##### 3.1.1 Project website

Project website is reachable via the URLs [www.r5-cop.eu](http://www.r5-cop.eu) and [r5-cop.eu](http://r5-cop.eu). It was created by TUBS. The website is filled with initial content:

- draft project outline,
- individual partner names and logos (with back-links to their own web sites),
- corresponding logos of funding entities.

The website will be regularly updated with current information and latest deliverables by project dissemination team.

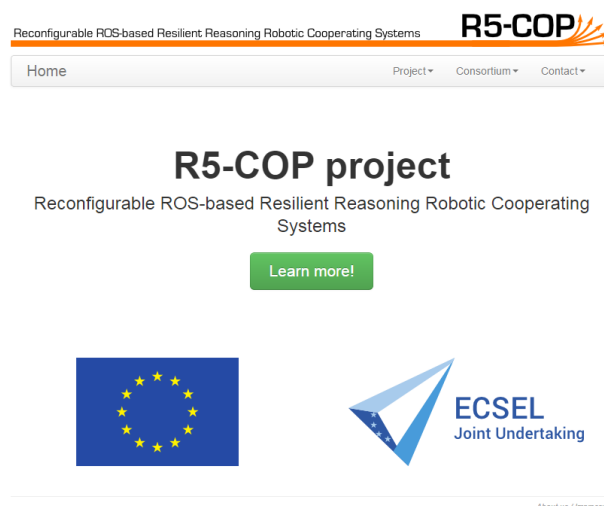


Figure 1 R5-COP website

### 3.1.2 Project logo and presentation template

Project logo has been developed by TUBS according to the best standards in visual identification domain. It is presented in two versions (short and long) in Figure 2. In order to establish a clear identification of the project also the project presentation template has been developed, as presented in Figure 3.



Figure 2 Project logo



Figure 3 Presentation template

### 3.1.3 Project leaflet and poster

The leaflet and poster have been designed from scratch following best practices in DTP (Desktop Publishing). The leaflet/poster are targeted at persons who have not yet been exposed to any information regarding the R5-COP project. Therefore, they contain basic information regarding the consortium and the goals of the project. The leaflet and poster have been developed for the purpose of all subject-related events, which may create an opportunity to disseminate the project results, such as fairs, conferences, seminars etc. The images of the leaflet and poster are presented in Figure 4 and Figure 5.

ARTEMIS Call 2013 Project  
621447

# R5-COP

*Reconfigurable ROS-based Resilient Reasoning Co-operating Robotic Systems*



## PROJECT description

R5-COP focuses on agile manufacturing paradigms and specifically on modular robotic systems. Based on existing and newly developed methods for the formal modelling of hardware and software components, R5-COP will support model-based design, engineering, validation and fast commissioning.

## RELEVANCE CALL 2013 objectives

R5-COP addresses the ARTEMIS sub programmes:

- > ASP4 "Embedded Systems for manufacturing and process automation"
- > ASP1 "Methods and processes for safety-relevant Embedded Systems"
- > ASP5 "Computing platforms for Embedded Systems"
- > plus aspects of ASP8 "Human-centred design of Embedded Systems"

## MARKET innovation

European manufacturing industry faces increasing demand for high product variance, small product series, shorter production cycles and cost reduction. However, few robotic components are designed for easy adaptation and reuse. R5-COP focuses on agile manufacturing paradigms and specifically on modular robotic systems to overcome these shortcomings, by identifying and extending suitable existing methods and, where required, developing new ones to formally model hardware and software components. This approach will support model-based design, engineering, validation, and fast commissioning. Furthermore, by using existing interface and middleware standards such as ROS, R5-COP will strongly facilitate integration of components from various suppliers.

## TECHNICAL innovation

R5-COP aims to enable industrial-scale fast, flexible adaption by robots to quickly changing environments and safe, direct human/robot cooperation and interaction by:

- > Enabling fast and flexible re-composition of software and hardware components of robotic systems, while ensuring robust and safe operation.
- > Enabling standardised yet simple design and implementation of software components, by using ROS Industrial for software deployment and SDKs for software development.
- > Enabling standardised yet flexible (re)configuration, using ontologies of configurable components for hardware and application modelling.
- > Ensuring robust perception, using advanced reconfigurable sensor systems modules.
- > Supporting component and system certification for safe human/robot cooperation.
- > Identifying, modelling, developing and evaluating key hardware and software components, using dedicated use-cases from industrial and service domains.



**R5-COP**

PROJECT COORDINATOR	START
Rainer Buchty	1 February 2014
INSTITUTION	DURATION
TU Braunschweig	36 months
EMAIL	TOTAL INVESTMENT
buchty@cs3.cs.tu-bs.de	€13.15 m
WEBSITE	PARTICIPATING ORGANISATIONS
www.r5-cop.eu	31
	NUMBER OF COUNTRIES
	13



**Figure 4 R5-COP poster**

**ARTEMIS Call 2013 Project 621447**

# R5-COP

Reconfigurable ROS-based Resilient Reasoning Robotic Cooperating Systems

**EXECUTIVE summary**  
R5-COP focuses on agile manufacturing paradigms and specifically on modular robotic systems. Based on existing and newly developed methods for the formal modelling of hardware and software components, R5-COP will support model-based design, engineering, validation and fast commissioning. Using existing interface and middleware standards, R5-COP will be a strong facilitator of the integration of components from various suppliers.

**CONTRIBUTION to SER**  
The R5-COP project will provide a platform and toolset containing methods, algorithms, prototypes and living lab solutions for cross-domain reusability, scalability and open interface standards for robotic and autonomous systems. It will contribute to the ARTEMIS Repository by connecting to other ASP and AIPP initiatives, to ensure long-term sustainability and impact on society. Key results will be demonstrated in a set of showcases, displaying high relevance to industrial and manufacturing issues and cross-domain applicability. Regarding interoperability, R5-COP will also contribute to establishing a standard for robust, reliable reconfigurable robot systems, using common interfaces in a certification and safety context, which entails conformity to both domain-specific and international domain-independent standards, thereby fostering a significant increase in market potential.

**MARKET INNOVATION & impact**  
R5-COP focuses on agile manufacturing paradigms and specifically on modular robotic systems to overcome the shortcomings of existing solutions, by firstly identifying and extending suitable existing methods and, where required, developing new ones to formally model hardware and software components. Furthermore, the use of existing interface and middleware standards such as ROS will strongly facilitate the integration of components from various suppliers. Such a modular approach is not only flexible, but will also reduce design, setup and maintenance costs. Given the level of human/robot cooperation, robustness and safety will be assured by dedicated verification and validation methodologies. The formal specification framework will support component suppliers in efficiently verifying and certifying their modules. This project will identify and develop reconfigurable key hardware and software components, employing living labs to show the feasibility and capability in manufacturing and service demonstrator environments.

**RELEVANCE & CONTRIBUTIONS to Call 2013**  
The R5-COP project addresses the ARTEMIS Sub Programmes ASP4 ("Embedded Systems for manufacturing and process automation"), ASP1 ("Methods and processes for safety-relevant Embedded Systems") and ASP5 ("Computing platforms for Embedded Systems"). In terms of ASP4, it specifically addresses:  
 > improved methods and technologies for automation model life cycle management,  
 > online real-time quality assurance of measurement data,  
 > robustness of sensor and actuator technology, e.g., calibration, energy harvesting and disposability,  
 > automation system human/user interface context awareness and information timing,  
 > automated device configuration.

Due to the delicate nature of robot and automation systems, there is a strong focus on safety and security. Hence, the project also specifically addresses core ASP1 topics:  
 > requirement management,  
 > architecture modelling and exploration,  
 > analysis methods,  
 > component-based design, particularly building reliable systems out of unreliable components.

Technology-wise, R5-COP is closely tied to work in the field of ASP5, especially with respect to complex distributed heterogeneous systems supporting real-time awareness, safety protection and Cyber-Physical properties, such as complex real-time sensor-data fusion. The project aims to target ASP5's main goal of enabling an increase of cross-domain re-use and interoperability, thus leading to lower costs of ownership and wider applicability.

R5-COP also covers aspects of ASP8 ("Human-centred design of Embedded Systems") with respect to the human-centred design of human-machine interfaces, object recognition, scene analysis, real-time image processing and cognitive assistance. It is motivated by usage scenarios from ASP2, ASP3 and ASP6.

**R&D INNOVATION and technical excellence**  
The main objective of the R5-COP project is to provide the means for fast and flexible adaption of robots to quickly changing environments and conditions, to enable safe and direct human/robot cooperation and interaction on an industrial scale. To overcome the shortcomings of existing robotic solutions, it focuses on the following objectives:  
 > Enabling fast and flexible re-composition of software and hardware components of robotic systems, while ensuring robust and safe operation, through the modular design of the components with formalised specifications and standardised interfaces.  
 > Enabling standardised yet simple design and implementation of software components, through using ROS Industrial for software deployment and SDKs for software development.  
 > Enabling standardised yet flexible (re)configuration, using ontologies of configurable components for modelling hardware and modelling applications on an app or skill level.  
 > Ensuring robust perception, using advanced reconfigurable sensor systems modules.  
 > Supporting component and system certification for safe human/robot cooperation, using dedicated skill techniques.  
 > Identifying, modelling, developing and evaluating key hardware and software components, using dedicated use cases from industrial and service domains.

**PROJECT partners**

**PROJECT COORDINATOR**  
Rainer Bucky

**INSTITUTION**  
TU Braunschweig

**E-MAIL**  
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**WEBSITE**  
www.r5-cop.eu

**START**  
1 February 2014

**DURATION**  
36 months

**TOTAL INVESTMENT**  
€12.15 M

**PARTICIPATING ORGANISATIONS**  
31

**NUMBER OF COUNTRIES**  
13

Advanced Research & Technology for Embedded Intelligence and Systems

Figure 5 R5-COP leaflet

### 3.1.4 Events

The participation in international events and conferences makes it possible to bring R5-COP closer to wide expert public, but above all in the research and development area.

To improve visibility and support the dissemination effort, R5-COP has participated (and plan to participate) in a number of events (conferences, seminars, meetings, workshops, etc.) related to the main topics of the project. Communication events and planned activities are described and will be updated regularly through the "Events and publications table" (Appendix I to the deliverable).

### 3.1.5 Scientific journals and other means of printed publication

Another way to disseminate the scientific outputs of the project are publications in professional journals. Especially the academia and R&D partners will be encouraged to produce such materials. So far eight papers were published in suitable journals or conferences proceedings (for more details see Appendix I).

In addition, the project was presented in the ARTEMIS Book of Projects, describing the general project goals and showcasing some early project results.

## 3.2 Project internal communication

### 3.2.1 Mailing-list and groupware server

Collaboration infrastructure consists of a dedicated mailing-list server, a groupware server and a web-conference system. Following mailing lists were created:

- the general-assembly mailing list (R5-COP\_ALL) for general communication,
- individual work mailing lists per SP (R5-COP\_SPx) and WP (R5-COP\_WPx),

All lists are accessible to registered users only via <listname>@r5-cop\_eu.

The dedicated groupware server is based on the well-known, extensible Redmine server system. Web-conference system is based on the infrastructure provided by the German Research Network foundation DFN. Their functionalities were described in D91.10 *Administrative project management*.

### 3.2.2 Project Meetings

- 1<sup>st</sup> General Assembly (kick-off) – Odense, Denmark, 19-20 May 2014
- 2<sup>nd</sup> General Assembly – Riga, Latvia, 21-22 January 2015
- 3<sup>rd</sup> General Assembly – Warsaw, Poland, June 2015 (date to be confirmed)

Project meetings are very important from the project management point of view. Meetings schedule includes overview of works status in each WP. During the meetings all partners are being updated about the actual status of the whole project realization (even for the tasks they are not involved in) as well as are planning work for the next months of project realization.

## Appendix I to the deliverable D93.81 - “Events and publications table”

### 1. Information about dissemination activities of R5-COP project/results (events/publications, etc.) - 1<sup>st</sup> project year

Partner submitting	Presentation/publication title/scope	Event's or medium name	Type of event/medium	Event's/medium territorial scope	Date of the event/publication	Event/medium web site	Short description of the event/medium character or additional info/comments
ALT	ROS workshop		workshop				Participants were introduced to the basic ROS principles. Furthermore, discussion on the industrial applications and use cases was a topic during this workshop.
ALT	ROS Training		Training		November 2014	<a href="http://www.alten.nl/en/altern-mechanics/whatwedo/training/">http://www.alten.nl/en/altern-mechanics/whatwedo/training/</a>	Introduction to ROS. During three days, participants learn the basics of ROS and motion planning. A practical programming case is part of the training.
ALT	Presentation of the work of WP23, “Programming by demonstration”	DSPE conference 2014	Conference	The Netherlands	2-3 September 2014	<a href="http://www.dspe-conference.nl/">http://www.dspe-conference.nl/</a>	
TUE	Abstract of the work performed in Task 23.4	33rd Benelux Meeting on Systems and	conference		25-27 March 2014	<a href="http://www.benelux2014.tue.nl/">http://www.benelux2014.tue.nl/</a>	

Partner submitting	Presentation/publication on title/scope	Event's or medium name	Type of event/medium	Event's/medium territorial scope	Date of the event/publication	Event/medium web site	Short description of the event/medium character or additional info/comments
		Control 2014, Heijden, The Netherlands					
DTI, VTT	L. Dalgaard, T. Heikkilä, J. Koskinen: "The R3-COP Decision Support Framework for Autonomous Robotic System Design"	45th International Symposium on Robotics and 8th German Conference on Robotics (ISR-Robotik-2014)	proceedings of the conference	International	June 2014		The paper was an assembly and summary of some of the work conducted by DTI, VTT, and other partners as part of the "predecessor" ARTEMIS-JU project, R3-COP. The material presented is directly reused and iterated in R5-COP as part of the DTI efforts in WP13 Dealing with configurability and WP35 Design and development tools.
DTI	L. Dalgaard: "Technology Assessment in Robotic Systems Design using PAPRIKA"	7th International Conference on Human System Interaction (HSI2014)	conference	International	June 2014		The paper is based on work conducted by DTI as part of the "predecessor" ARTEMIS-JU project, R3-COP, and outlines a broader use of the PAPRIKA decision support method as a strong tool for general Technology Assessment. The results are directly reused and iterated in R5-COP as part of the DTI efforts in WP13 Dealing with configurability and WP35



Partner submitting	Presentation/publication title/scope	Event's or medium name	Type of event/medium	Event's/medium territorial scope	Date of the event/publication	Event/medium web site	Short description of the event/medium character or additional info/comments
							Design and development tools.
DTI	MLF proof-of-concept demonstrator – the balloon popping robot using the MLF v0.1	From R5-COP kick-off meeting in May 2014 + an additional 3 weeks	Show-case	Living-labs at DTI	May 2014		DTI is displaying and showcasing the created WP36 MLF proof-of-concept demonstrator – the balloon popping robot using the MLF v0.1.
DTI	R5-COP MLF poster	Living-labs at DTI	Poster	Living-labs at DTI	From May 2014		Poster displaying the MLF concepts are on permanent displayed. About 1,000 visitors per year.
DTI, MIR	MLF demonstration	ABB Partner Day	Show-case	Living-labs at DTI	13 November 2014	<a href="https://www.youtube.com/watch?v=IQFUUxo5h9U">https://www.youtube.com/watch?v=IQFUUxo5h9U</a>	MiR100 and Neobotix MP400 platform utilizing MLF components
DTI	MLF demonstration	Manufacturing Academy of Denmark (MADE) openlab	Show-case	Living-labs at DTI	2 September 2014	<a href="http://made.dk/welcome">http://made.dk/welcome</a> <a href="https://www.youtube.com/watch?v=TiSqlVYXnDI">https://www.youtube.com/watch?v=TiSqlVYXnDI</a>	Neobotix MP400 used to demonstrate early MLF components.
DTI	Power-point presentations	20+ DTI presentation for companies, universities,	Power-point presentation	Mostly Denmark but also Portugal	All of 1 <sup>st</sup> project year		R5-COP always has at least one slide and is always promoted.



Partner submitting	Presentation/publication title/scope	Event's or medium name	Type of event/medium	Event's/medium territorial scope	Date of the event/publication	Event/medium web site	Short description of the event/medium character or additional info/comments
		partners, etc.					
DTI	Proposal texts	5+ national (Denmark) and European project proposals	Proposal texts	Denmark and Europe	All of 1 <sup>st</sup> project year		Several national and European project proposals have been submitted with DTI as partner during the 1 <sup>st</sup> project year. In all proposals R5-COP is used as a positive reference for profiling DTI as partner and MIR if they too are partner. Also R5-COP's general goals are usually described in short paragraphs.
BME	Gábor Balassa, Pál Bencze, Tadeusz Dobrowiecki: Error Propagation and Signal Postprocessing in Rocket-based Experiments.	13th IMEKO TC10 Workshop on Technical Diagnostics, Advanced measurement tools in technical diagnostics for systems' reliability and safety	workshop		26-27 June, 2014, Warsaw, Poland	<a href="http://imekotec10-2014.org/">http://imekotec10-2014.org/</a>	BME presented its initial research results and ongoing activities in the project.
BME	Peter Eredics, Tadeusz P. Dobrowiecki: Fault Diagnosis in Intelligent Greenhouse Control with	13th IMEKO TC10 Workshop on Technical Diagnostics, Advanced measurement tools in technical	workshop		26-27 June, 2014, Warsaw, Poland	<a href="http://imekotec10-2014.org/">http://imekotec10-2014.org/</a>	BME presented its initial research results and ongoing activities in the project

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	Decomposed Neural Models	diagnostics for systems' reliability and safety					
BME	Tamás Mészáros and Tadeusz Dobrowiecki: Rapid Development of Application-Oriented Natural Language Interfaces.	IEEE 18th International Conference on Intelligent Engineering Systems 2014 (INES 2014)	conference	International	3-5 July 2014, Tihany, Hungary	<a href="http://www.ines-conf.org/inesconf/2014.html">http://www.ines-conf.org/inesconf/2014.html</a>	
BME	Zoltán Gál, Béla Almási, Tamás Dabóczy, Rolland Vida, Stefan Oniga, Sándor Baran, István Farkas: Internet of Things: application areas and research results of the FIRST project	Infocommunications Journal, Sept. 2014, Vol. VI, No. 3, ISSN 2061-2079, pp. 37-44	Journal paper	International	Sept 2014	<a href="http://www.hiradastechnika.hu/&amp;lang=en">http://www.hiradastechnika.hu/&amp;lang=en</a>	BME presented a framework concept to support interoperability of distributed embedded systems
BME	Attila Szarvas, Csanád Erdős, and Tamás Dabóczy: Composability of Cyber-Physical Systems	Veszprém Optimization Conference: Advanced Algorithms (VOCAL2014)	Conference	International	14-17 Dec 2014, Veszprem, Hungary,	<a href="https://vocal.dcs.uni-pannon.hu/">https://vocal.dcs.uni-pannon.hu/</a>	BME presented a framework concept to support composability.

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BME	Zoltán Micskei, István Majzik: R3-COP and R5-COP Projects: Testing Context-Aware Behaviour (presentation in Hungarian)	ARTEMIS and AAL Day, Budapest University of Technology and Economics	Workshop	National (Hungary)	7 May 2014, Budapest, Hungary,	<a href="https://www.vik.bme.hu/hir/676-artemis-es-aal-szakmai-nap">https://www.vik.bme.hu/hir/676-artemis-es-aal-szakmai-nap</a>	BME presented the results of the R3-COP project and the plans for the R5-COP project.
BUT	Presentation of R5-COP project and robotic platforms prepared by BUT	Robo OpenDay 2014		Czech Republic			Event organized by Faculty of Information Technology, BUT
BUT	Work on public visibility of R5-COP including presentation to local industry parties			Czech Republic			
TUBS	<a href="http://r5-cop.eu">http://r5-cop.eu</a>	Internet	Website	International		<a href="http://r5-cop.eu">http://r5-cop.eu</a>	Presenting the project aims and the consortium to the public.
TUBS		TU Day	Open house presentation	local	28 June 2015, Braunschweig, Germany		public presentation of current research activities
TUBS		"Tag der Informatik"	Open house presentation	local	27 January 2015, Braunschweig, Germany		public presentation of current research activities with focus on recruitment and public relations

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TUBS	R. Buchty, M. Geelen, H. Sandee, V. Beran: "R5-COP"	ARTEMIS Book of Projects, Volume Three; pp. 60-66	Book	International	June 2014		Project overview with presentation of early results

## 2. Information about events/publications where dissemination of R5-COP project/results is planned for the 2<sup>nd</sup> project year

Partner submitting	Presentation/publication title/scope	Event's or medium name	Type of event/medium	Event's/medium territorial scope	Date of the event/publication	Event/medium web site	Short description of the event/medium character or additional info/comments
TUBS, PIAP, DTI, MIR	R5-COP project booth	ARTEMIS Co-Summit "Smart Industry: impact of software innovation"	Co-Summit Conference	International	10-11 March 2015, Berlin	<a href="http://www.artemis-ia.eu/co-summit-2015/index.html">http://www.artemis-ia.eu/co-summit-2015/index.html</a>	Even if there's no particular R5-COP outcome to present yet as the main demonstrator work is yet to start, it's worthwhile to give a state-of-the-art presentation. PIAP SCOUT robot will be presented. DTI and MIR are planning to participate with the "augmented" MiR100 platform showcasing our results.
DTI	R5-COP results presentation at ERF workshop: "Robotics for logistics and transport"	EuRobotics Forum (ERF)	forum	International	11-13 March 2015, Vienna	<a href="http://www.eu-robotics.net/eurobotics-forum/about-erf-2015/">http://www.eu-robotics.net/eurobotics-forum/about-erf-2015/</a>	Workshop with the following speakers: <ul style="list-style-type: none"> <li>• Prof. Achim J. Lilienthal (Örebro University)</li> <li>• Lars Dalgaard (Danish Technological Institute)</li> <li>• Prof. Wolfgang Echelmeyer (Reutlingen Research Institute)</li> <li>• Pablo Urcola (University of Zaragoza)</li> <li>• Christopher Kirsch (IML Fraunhofer)</li> <li>• Jesús Alfonso (ITAINNOVA)</li> </ul>

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DTI	R5-COP results presentation at ERF workshop: "Hardware and software modularity and interoperability in Service Robotics: Toward standardisation "	EuRobotics Forum (ERF)	forum	International	11-13th of March 2015, Vienna	<a href="http://www.eu-robotics.net/eurobotics-forum/about-erf-2015/">http://www.eu-robotics.net/eurobotics-forum/about-erf-2015/</a>	The talk is entitled: "The ARTEMIS-JU project R5-COP mechanical, electrical, and software modularity for task-changing small flexible mobile robot platforms". 5+ other speakers are currently listed for the workshop.
DTI	Co-organiser and presenter	"Mobile Robots in production industry - Today, tomorrow and in the future" (translated from Danish)	Mini conference facilitated by Manufacturing Academy Denmark (MADE), RoboCluster, and DTI	National (Denmark) – though with invited European speakers. Audience primarily Danish.	18 June 2015	Not available yet	Focus on mobile robot solutions in production industry, looking at challenges, possibilities and trends. We present solutions commercially available today and reflect on demands and needs of future mobile robot solutions.
DTI (+MIR)	MLF demonstration	5+ during 2 <sup>nd</sup> project year	Show-case	Living-labs at DTI	2 <sup>nd</sup> project year	<a href="http://www.dti.dk/robot">http://www.dti.dk/robot</a>	MIR100 and possibly mobile robots from other vendors show-cased with MLF components
DTI	Power-point presentations	20+ DTI presentation for companies, universities, partners, etc.	Power-point presentation	Mostly Denmark	All of 2 <sup>nd</sup> project year		R5-COP always has at least one slide and is always promoted.

Partner submitting	Presentation/publication title/scope	Event's medium name or	Type of event/medium	Event's/medium territorial scope	Date of the event/publication	Event/medium web site	Short description of the event/medium character or additional info/comments
DTI	R5-COP MLF poster	Living-labs at DTI	Poster	Living-labs at DTI	From May 2014-		Poster displaying the MLF concepts are on permanent displayed. About 1,000 visitors per year.
DTI	Newsletter articles	DTI Robot newsletter	Newsletter sent to 300+ recipients every other week	Denmark (for the Danish newsletter) and in the international version planned to be published once a month during 2015	Continuously		Mention of R5-COP and R5-COP results will occasionally be represented in featured stories throughout the 2 <sup>nd</sup> project year
DTI	Website presentation of the R5-COP project	DTI website	Website	National and International	Beginning of 2 <sup>nd</sup> project year	<a href="http://www.dti.dk/">http://www.dti.dk/</a> and <a href="http://www.teknologisk.dk/">http://www.teknologisk.dk/</a>	We plan on setting up a page on our websites explain R5-COP, our role in it, results, etc. and linking to the official R5-COP website
DTI	Proposal texts	National (Denmark) and European project proposals	Proposal texts	Denmark and Europe	All of 2 <sup>nd</sup> project year		In the 2 <sup>nd</sup> project year DTI plans on submitting several national and European project proposals. In all relevant proposals R5-COP will be used as a positive reference for profiling DTI as partner and MIR if they too are partner. Also R5-COP's general goals will usually be described in short paragraphs.

Partner submitting	Presentation/publication title/scope	Event's medium name or	Type of event/medium	Event's/medium territorial scope	Date of the event/publication	Event/medium web site	Short description of the event/medium character or additional info/comments
TUBS	<a href="http://r5-cop.eu">http://r5-cop.eu</a>	Internet	Website	International		<a href="http://r5-cop.eu">http://r5-cop.eu</a>	Presenting the project aims, the consortium and results to the public.
TUBS		TU Night	Open house presentation	local	2015, Braunschweig, Germany		Public presentation of current research activities.
TUBS		"Tag der Informatik"	Open house presentation	local	2016, Braunschweig, Germany		Public presentation of current research activities with focus on recruitment and public relations.
CAMEA	R5-COP poster display and alternatively demo	EXPOTRAFFIC MOSCOW	trade fair	International	27-29 April 2015, Moscow		The event is traffic oriented trade fair where CAMEA will have own booth. There will be displayed poster presenting current results within R5-COP project and alternatively we will show real demo of embedded video processing or similar.
CAMEA	R5-COP poster display and alternatively demo	INTERTRAFFIC ISTANBUL 2015	trade fair	International	27-29 May 2015, Istanbul	<a href="http://www.intertraffic.com/intertraffic-tr/Pages/default.aspx">http://www.intertraffic.com/intertraffic-tr/Pages/default.aspx</a>	The event is traffic oriented trade fair where CAMEA will have own booth. There will be displayed poster presenting current results within R5-COP project and alternatively we will show real demo of embedded video processing or similar.
CAMEA	R5-COP poster	ITS WORLD	trade fair	International	5-9 October		The event is traffic oriented



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	display and alternatively demo	CONGRESS BORDEAUX			2015, Bordeaux		trade fair where CAMEA will have own booth. There will be displayed poster presenting current results within R5-COP project and alternatively we will show real demo of embedded video processing or similar.
CAMEA	R5-COP poster display and alternatively demo	TRANSPQUIP SAO PAULO	trade fair	International	10-12 Nov 2015, Sao Paulo		The event is traffic oriented trade fair where CAMEA will have own booth. There will be displayed poster presenting current results within R5-COP project and alternatively we will show real demo of embedded video processing or similar.
TRI	Conference Paper	MISTA 2015	Conference	International	25-28 Aug 2015, Prague	<a href="http://www.schedulingconference.org/">http://www.schedulingconference.org/</a>	This conference serves as a forum for an international community of researchers, practitioners and vendors on all aspects of multi-disciplinary scheduling.
BME	FFT-based Spectrum Analysis in the Case of Data Loss	2015 IEEE International Instrumentation and Measurement Technology Conference (I2MTC)	Conference	International	11-14 May, 2015, Pisa, Italy	<a href="http://imtc.iee-e-ims.org/">http://imtc.iee-e-ims.org/</a>	At the conference BME plans to present the concept of improving robustness of signal processing in the case of data loss in wireless channels.

Partner submitting	Presentation/publication title/scope	Event's or medium name	Type of event/medium	Event's/medium territorial scope	Date of the event/publication	Event/medium web site	Short description of the event/medium character or additional info/comments
BME	T.P. Dobrowiecki and J. Schoukens: Reducing the Measurement Time of the Best Linear Approximation of a Nonlinear System using Improved Averaging Methods	2015 IEEE International Instrumentation and Measurement Technology Conference (I2MTC)	Conference	International	11-14 May, 2015, Pisa, Italy	<a href="http://imtc.iee-e-ims.org/">http://imtc.iee-e-ims.org/</a>	Principal international conference of the IEEE Instrumentation and Measurement Society.
BME	D. Darvas, A. Vörös and T. Bartha: Improving Saturation-based Bounded Model Checking	Acta Cybernetica	Journal	International	(accepted for publication)	<a href="http://www.inf.u-szeged.hu/en/kutatas/acta-cybernetica">http://www.inf.u-szeged.hu/en/kutatas/acta-cybernetica</a>	Journal paper describing research on improved verification techniques.
BME	V. Molnár, D. Darvas, A. Vörös and T. Bartha: Saturation-based Incremental LTL Model Checking with Inductive Proofs	21st International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2015)	Conference	International	11-18 April, 2015, London, UK	<a href="http://www.etaps.org/2015/tacas">http://www.etaps.org/2015/tacas</a>	Conference paper describing incremental verification techniques.
ALT	ROS Training		Training		June 2015, November	<a href="http://www.alt-en.nl/en/alten">http://www.alt-en.nl/en/alten</a>	Introduction to ROS. During three days, participants learn the basics of ROS and motion

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					2015	<a href="#">mechatronics/whatwedo/training/</a>	planning. A practical programming case is part of the training.