

R5-COP

Reconfigurable ROS-based Resilient Reasoning Robotic Cooperating
Systems

Dissemination reports and plans

Adam Dąbrowski (PIAP)

Project	R5-COP	Grant agreement no.	621447
Deliverable	D93.83	Date	28.01.2017
Contact Person	Adam Dąbrowski	Organisation	PIAP
E-Mail	adabrowski@piap.pl	Diss. Level	PU

Document History			
Ver.	Date	Changes	Author
0.1	28.01.2017	Initial version, first contributions	Adam Dąbrowski, PIAP
0.2	02.02.2017	Draft version for internal review	Adam Dąbrowski, PIAP
1.0	10.02.2017	Final version	Adam Dąbrowski, PIAP

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1 Introduction

1.1. Summary (abstract)

This deliverable describes the dissemination activities in R5-Cop project in the third and final project year (M25-M36). Partners were encouraged to actively disseminate the project results. These activities include:

- production and dissemination of advertising and promotional materials of the project,
- presentation of 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.

1.2. Purpose of document

The purpose of this document is to report all dissemination activities carried out within R5-Cop in the third year of the project. There are separate documents concerning previous years, D93.81 for the first project year and D93.82 for the second year.

1.3. Partners involved

Partners and Contribution	
Short Name	Contribution
PIAP	Deliverable responsibility, integration of inputs from partners
ALT	Provided input, initial input gathering for WPR of WP93
CAMEA	Provided input
HUT	Provided input
TRI	Provided input
BME	Provided input
FAU	Provided input
TUBS	Provided input
VTT	Provided input
SINTEF	Provided input
DTI	Provided input
IMCS	Provided input

2 Project meetings

The following project meetings took place in the third project year:

- 5th General Assembly Meeting – Oulu, Finland, VTT, 29-30 June 2016.
- 6th General Assembly Meeting – Budapest, Hungary, BME, 18-19 Jan 2017.

3 Information on dissemination activities in 3rd project year

Partner	Title / Scope	Event / medium				Short description
		Name	Type	Date	Website / link	
BME	L. Sujbert, Gy. Orosz (BME): FFT-Based Spectrum Analysis in the Case of Data Loss	IEEE Transactions on Instrumentation and Measurement, 2016, Volume: 65, Issue: 5, pp. 968-976,	Journal	2016	http://dx.doi.org/10.1109/TIM.2015.2508278	BME published scientific results related to the processing of sensor data in case of data loss (WP22, WP25).
BME	Cs. F. Hajdu, T. Dabóczy (BME), C. Zamantzas: Possibilities for On-line Detector Connectivity Checks in Beam Loss Monitoring Systems	Periodica Politechnica Electrical Engineering and Computer Science, On-lineFirst	Journal	2016	http://dx.doi.org/10.3311/PPEe.9777	BME published scientific results related to sensors and signal processing in monitoring systems (WP22, WP25).
BME	Cs. F. Hajdu, C. Zamantzas and T. Dabóczy (BME): A Resource-Efficient Adaptive Fourier Analyzer	Journal of Instrumentation, Vol. 11, Oct. 2016, pp. 1-14.	Journal	Oct. 2016	http://dx.doi.org/10.1088/1748-0221/11/10/P10014	BME published scientific results related to resource-efficient signal processing (WP22).
BME	T. Dabóczy (BME): Analysis of the Distortion of Marker based Optical Position Measurement as a Function of Exposure Time	IEEE Trans. on Instrumentation and Measurement, 2016. No. 99, pp. 1-12,	Journal	2016	http://dx.doi.org/10.1109/TIM.2016.2566818 .	BME published results related to the analysis of sensor data (WP22, WP25).

BME	T. B. Bakó and T. Dabóczy (BME): Improved-Speed Parameter Tuning of Deconvolution Algorithm	IEEE Trans. on Instrumentation and Measurement, 2016. July 2016, Vol. 65, No. 7, pp. 1568-1576,	Journal	2016	http://dx.doi.org/10.1109/TIM.2016.2534668	BME published results related to the background of sensor data processing (WP22).
BME	Cs. F. Hajdu, T. Dabóczy (BME), Ch. Zamantzas: On-line Detector or Connectivity Check Based on a Parasitic Signal Coupling	Proceedings of the 23rd International PhD Minisymposium, Budapest University of Technology and Economics, Budapest, February 8-9, 2016, pp 18-21,	Symposium	2016	https://repozitorium.omikk.bme.hu/handle/10890/1546	BME published results about analysis of signal coupling (WP22).
BME	T. Heikkilä, T. Dobrowiecki (BME), L. Dalggaard: Dealing with Configurability in Robot Systems	MESA 2016, The 12th IEEE/ASME Int. Conf. on Mechatronic and Embedded Systems and Applications, Auckland – New Zealand, August 29-31, 2016.	Conference	2016	http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=7587120	VTT, BME and DTI published results about the configurability of robotic systems (WP13, WP35).
BME	K. Várszegi and B. Pataki: Overview and Prospects of Brain-Computer Interface Technology for Prosthetic Limbs	Proceedings of the 23rd International PhD Minisymposium, Budapest University of Techno-	Symposium	2016	https://repozitorium.omikk.bme.hu/handle/10890/1546	BME published results related to brain-computer interfaces (WP24).

		logy and Economics, Feb 8-9, 2016, pp 50-53,				
BME	T. Mészáros, T. Dobrowiecki: Agent-based Reconfigurable Natural Language Interface to Robots	ICAART 2017, Int. Conf. on Agents and Artificial Intelligence, Porto, Portugal, Feb 24-26, 2017 (accepted)	Conference	2017	(to appear in 2017)	BME will publish results about the natural language based interface for robotic systems (WP24).
BME	T. Tóth and I. Majzik: Formal Modeling of Real-Time Systems with Data Processing	Proceedings of the 23rd International PhD Minisymposium, Budapest University of Technology and Economics, Feb 8-9, 2016. pp 46-49,	Symposium	2016	https://repozitorium.omikk.bme.hu/handle/10890/1546	BME published results about formal modelling of behaviour supporting verification (WP34).
BME	L. Balogh, I. Dávid, I. Ráth, D. Varró and A. Vörös: Distributed and Heterogeneous Event-based Monitoring in Smart Cyber-Physical Systems	1st Workshop on Monitoring and Testing of Cyber-Physical Systems, CPS Week 2016, 11 April 2016, Vienna, Austria,	Workshop	2016	http://mtcps16.ait.ac.at/	BME presented results related to on-line verification (WP34).
BME	V. Molnár, A. Vörös, D. Darvas, T. Bartha and I. Majzik: Component-wise incremental LTL model checking	Formal Aspects of Computing, Vol 28, Issue 3, pp 345–379, May 2016. Springer Verlag, 2016.	Journal	2016	http://link.springer.com/article/10.1007/s00165-015-0347-x	BME published results about the verification of properties specified for design-time and on-line verification (WP34).

		ISSN: 0934-5043 (Print)				
BME	Semeráth, O., Vörös, A., and Varró, D.: Iterative and Incremental Model Generation by Logic Solvers	In Proc. 19th International Conference on Fundamental Approaches to Software Engineering (FASE 2016), April 2016, Eindhoven, The Netherlands, Springer LNCS 9633, pp 87-103	Conference	2016	http://link.springer.com/chapter/10.1007%2F978-3-662-49665-7_6	BME published results about the model-based test data generation technique used for incremental testing (WP34).
BME	A. Vörös, V. Molnár, I. Majzik, K. Marussy, M. Telek and A. Klenik: Efficient Decomposition Algorithm for Stationary Analysis of Complex Stochastic Petri Net Models	37th Int. Conf. on Application and Theory of Petri Nets and Concurrency, Torun, Poland. 19-24 June 2016. Springer LNCS 9698, pp 281-300	Conference	2016	http://link.springer.com/chapter/10.1007%2F978-3-319-39086-4_17	BME published results about the analysis of stochastic Petri nets used for fault modelling and test case generation (WP32, WP34).
BME	K. Várszegi, Study and development of Brain-Computer Interfaces	MSc thesis, Budapest University of Technology and Economics, DMIS, 2016. Gábor Dénes prize, Novofer Foundation,	MSc thesis	2016	http://diplomater.vik.bme.hu/en/Theses/Agyszamitogep-interfeszek-vizsgalataes	MSc thesis consulted by BME, related to brain-computer interfaces (WP24).
BME	G. Köpenczei, Natural lan-	BSc thesis, Budapest	BSc thesis	2016	http://diplomater.vik.bme.hu/en/T	BSc thesis consulted by BME, related to natural language ro-

	guage interface to Robot Operating System	University of Technology and Economics, DMIS, 2016.			heses/Termesz-etes-nyelvu-inter-fesz-fejlesztese-a	bot interfaces (WP24).
BME	B. Gazder: Monitor Synthesis on the Basis of Temporal Requirements for ROS Environment	BSc thesis, Budapest University of Technology and Economics, DMIS, 2016.	BSc thesis	2016	http://diplomater-v.vik.bme.hu/en/T_heses/Monitorsz-intezis-temporalis-kovetelmenyek	BSc thesis consulted by BME, related to online verification by monitoring (WP34).
BME	P. Juhász, Feed-back based gesture detection system	MSc thesis, Budapest University of Technology and Economics, DMIS, 2016. Gábor Dénes prize, Novofer Foundation,	MSc thesis	2016	http://diplomater-v.vik.bme.hu/en/T_heses/Visszac-satolason-alapulo-gesztus-felismero	MSc thesis consulted by BME, related to gesture based robot control (WP24).
BME	T. Heikkilä (VTT), T. Dobrowiecki (BME): Towards configuration based design of robotic systems.	R5-COP workshop at the ARTEMIS Technology Conference	Workshop	Madrid, Spain, Oct 4-6, 2016	https://artemis-ia.eu/technology-conference-2016.html	BME contributed to VTT presentation about the configuration design or robotic systems (WP13, WP35).
BME	Z. Micskei: Validation, verification and testing: tools and standards	R5-COP workshop at the ARTEMIS Technology Conference	Workshop	Madrid, Spain, Oct 4-6, 2016	https://artemis-ia.eu/technology-conference-2016.html	BME presented results related to incremental testing and online verification (WP34).
BME	T. Mészáros: iTrolley - a natural language human-robot interface demo.	R5-COP workshop at the ARTEMIS Technology Conference	Workshop	Madrid, Spain, Oct 4-6, 2016	https://artemis-ia.eu/technology-conference-2016.html	BME presented a demo about a natural language human-robot interface (WP24).
TUBS	Rolf Meyer, Jan Wagner, Bastian Farkas, Sven Horsinka, Patrick Siegl,	ACM Transactions on Embedded Computing	Conference	2016	http://tec-s.acm.org/	Presentation including R5-Cop results

	Rainer Buchty, Mladen Berekovic A Scriptable Standards-Compliant Reporting and Logging Framework for SystemC	Systems				
TUBS	Bastian Farkas, S. Shah, Jan Wagner, Rolf Meyer, Rainer Buchty, Mladen Berekovic An Open and Flexible SystemC to VHDL Workflow for Rapid Prototyping	DVCon Europe 2016	Conference	2016	https://dvcon-europe.org/	Presentation including R5-Cop results
TUBS	Administering the project's public web-server	internet	Website	2016-2017	http://www.r5-cop.eu/en/	Public website for the project
TUBS	Rainer Buchty	R5-Cop workshop at ATC2016 organization	Workshop	October 2016 :	https://artemis-ia.eu/technology-conference-2016.html	Introduction/management presentation, logistics and partner organization.
CAMEA	R5-COP poster display and alternatively demo	NTER-TRAFFIC AMSTERDAM 2016	International trade fair	5-8 th of May 2016, Amsterdam	http://www.international-traffic.com/	The event is traffic oriented trade fair where CAMEA had a booth. Displayed a poster presenting current results within R5-COP project.
IMCS	Jānis Bičevskis, Artis Gaujēns, Jānis Kalniņš, Ivo Odītis. "SIL Model of RUAV"	74th scientific conference of University of Latvia	Conference	February 2016		Participation in scientific conference
IMCS	"Embedded software development" for course "System design"	Course of Computer Science master program at University of Latvia	course	2016		R5-Cop project results included in the course
HUT	D. Telgen, Grid	PhD thesis	PhD			Some research is also carried

	Manufacturing, A Cyber-Physical Approach with Autonomous Products and Reconfigurable Manufacturing Machines	partly based on R5-Cop work	thesis			over to the national 'RAAK-MKB Geen Moer Aan' project. Education also profits from the project by integration of research work into several projects, e.g., the computer engineering bachelor course: 'Roving Robots and Distributed Devices'
FAU	Model-driven Structural and Statistical Testing of Robot Cooperation and Reconfiguration	Third Workshop on Model-Driven Robot Software Engineering (MORSE 2016)	Workshop	July 2016	http://st.inf.tu-dresden.de/MORSE16/	FAU was presenting its research results at conferences and workshops
FAU	Quantitative Reliability Assessment for Mobile Cooperative Systems	SafeComp Workshop on Dependable Embedded and Cyberphysical Systems and Systems-of-Systems (DECSoS 2016)	Workshop	September 2016	http://www.ntnu.edu/web/safe-comp2016/dec-sos16	FAU was presenting its research results at conferences and workshops
FAU	Systematic and Probabilistic Testing of Autonomous Mobile Robots	9th GI Conference on Autonomous Systems (Aut-Sys 2016)	International conference	October 2016	http://www.fernuni-hagen.de/kn/aut-sys/	FAU was presenting its research results at conferences and workshops
ALT	ROS workshop	Agricultural company	workshop	November 2016		Participants learned the basics of ROS and discussed the feasibility of ROS applications within their application.
SIN-TEF	Vind: a robot self-localization framework	ICCMA, 4 th International Conference in Control Mechatronics and Automation	International conference	10 December 2016	http://www.iccma.org/	The conference provides a platform to discuss Control, Mechatronics and Automation with participants from all over the world, both from academia and from industry. Its success is reflected in the papers received, with participants coming from several countries, allowing a real multinational multicultural exchange of experiences and

						ideas.
SIN-TEF	“How do we surpass current barriers to efficient deployment of new robotics in industry?”	European Robotics Forum 2016	Forum	21-23rd of March 2016, Ljubljana	http://www.erf2016.eu/	Apart from the organization, SINTEF provided a presentation
VTT	apio Heikkilä, Tadeusz Dobrowiecki, Lars Dalgaard Dealing with Configurability in robot systems	12th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications	Conference	28-31.8.2016	www.mesa2016.org	VTT presented results from WP 13 (configuration based modelling and planning)
VTT, PFI	Jari M. Ahola, Tapio Heikkilä, Jukka Koskinen, Tuomas Seppälä & Tarmo Tamminen, A configurable CAD-based object recognition system for varying resolution 3D-sensors,	12th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications	Conference	28-31.8.2016	www.mesa2016.org	VTT presented results from WP 25 (perception component).
VTT	“Dealing with configurability of robot systems”	European Robotics Forum, Ljubljana, 06	workshop	21.-23.03.21	www.erf2016.eu	VTT presented results from WP 13 (configuration based modelling and planning)
VTT	Collaborative robotics and sensor intelligence	Digitalization - Industry - Future - seminar	seminar	12.4.2016	http://www.vtt.fi/mediale/tapahtumat/digitaalisuus-teollisuus-tulevaisuus-seminaari	VTT presented results from WP 25 (perception components).
VTT	Robots and digitalization are coming - are we ready?	Helsinki region The Chamber of Commerce	seminar	07.09.2016		VTT presented results from WP 25 (perception components).
DTI	MLF Demonstrations at DTI living labs	30+ during 3 rd project year	Showcases	All 3 rd project year		Several MLF demonstrations (MiR100 robot and Neobotix

						<p>MP400 robot with different task configurations of the MLF) at the DTI living labs for external people from industry and academia. Examples from the last 7 months:</p> <ul style="list-style-type: none"> • 22th of June 2016: DTI received a visit from the Minister of Economic Affairs and Energy, Albrecht Gerber, of Land Brandenburg in Germany. A part of the visit was also a demonstration of the WP44 demonstrator to showcase the potential in using the developed technologies to further automate the companies in Brandenburg. • 7 July 2016: Film crew from Japanese television delegation. Demonstration of LEAP and Myo controlling the mobile robots in the area of WP44 use case 2 • 7 July 2016: Presentation for a Chinese delegation from China Association for Science and Technology (CAST) in Chongqing. They were in Denmark to search for cooperation possibilities and to see the latest developments within robot technology. • 30 August 2016: Demonstration of LEAP sensor and the mobile robots for the Danish parliament. • 12 October 2016: MADE Open Lab. Around 80 people from primarily manufacturing companies, universities and research institutes from various European countries participated (see D93.62) • 25 November 2016: Robotbrag (translated: Robot Boom). The exhibition was a joint event between DTI, DIRA (Danish Robot Associ-
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						ation), and an OpenLab of the H2020 European project RoboTT-NET. 588 people participated in the event, both stakeholders within the Danish robotics business as well as “regular civilians” (see D93.62)
DTI	R5-COP poster and MLF poster	Living-labs at DTI	Posters	All 3 rd project year		Posters displaying R5-COP and the MLF concepts are on permanent displayed. About 5,000 visitors per year.
DTI	eNewsletter articles	DTI Robot newsletter. Danish and English versions,	Newsletter sent to 2,000+ recipients every other week	All 3 rd project year	DK: http://www.teknologisk.dk/ydelselser/robotteknologi/nyheder/22786.2 UK: http://www.dti.dk/services/robot-technology/news/23617.2 Signup: DK: http://www.teknologisk.dk/ydelselser/nyhedsbrev-om-robotteknologi/32962 UK: http://www.dti.dk/services/news-letters/33272	Mention of R5-COP and R5-COP results in several news articles
DTI	Short promotion videos	DTIs YouTube channel	Videos	All 3 rd project year	https://www.youtube.com/user/DTIRobot/videos	Several DTI promotion videos produced focusing on R5-COP, mobile robots, MIR, MLF, etc. E.g.: <ul style="list-style-type: none"> • https://www.youtube.com/watch?v=afu0PNAnoEY • https://www.youtube.com/watch?v=HbbOEJt85y0 • https://www.youtube.com/watch?v=OuY-QBK9p2U • https://www.youtube.com/watch?v=EIYFiCI9v7o • https://www.youtube.com/watch?v=7StdLi1T0hY

DTI	Proposal texts	National (Denmark) and European R&D project proposals	Proposal texts	All 3 rd project year		In the 3 rd project year DTI submitting several 7+ national and European R&D project proposals. In all relevant proposals R5-COP was used as a positive reference for profiling DTI as partner and MIR when participating. R5-COP's general goals will usually be described in short paragraphs.
DTI	Power-point presentations	50+ DTI presentation for companies, universities, partners, etc.	Power-point presentation	All 3 rd project year		R5-COP always has at least one slide in our centre and project presentations and is thus always promoted.
DTI	Promotional product cards for visitors/clients/collaborating partners	Product card	115mm*210mm two-page appetizer leaflets	All 3 rd project year		DTI promotes their products and services using small card board "product cards" which are small (115mm*210mm) two-page appetizer leaflets. In the frame of R5-COP, DTI has produced one specific printed in 200 copies available to all visitors and as hand-outs at trade-fairs.
DTI	Day event	The Danish computer scientist associations annual general meeting 5th of November, Aarhus, Denmark	Presentations and workshops	5 th of November, 2016		R5-COP results and general perspectives on robot technology including autonomous vehicles was presented. After the presentations, the participants were invited to interact with the robots.
DTI	R5-COP results presented in industrial context	Odense Robotics Walk In-event vol. 3	Presentation	11 th of October 2016		Presentation focused on mobile robots and the use cases developed in WP44. The event was aimed at businesses with interest in robotics, newly started robot businesses and people who were interested in starting up a robot business. At the event representatives from funding agencies also presented the audience with possible funding opportunities. There was a presentation of 3 new start up companies within

						robotics and finally DTI's presentation about the possibilities with mobile robots and the add-ons and software products developed in R5-COP
DTI	R5-COP results presented at ATC	Artemis Technology Conference in Madrid	Presentation and demo	6th of October 2016		Presentation about the Modular Link Framework was given by DTI. Afterwards, the result of an integration effort between DTI and PIAP, where the PIAP SCOUT robot was interfaced with the Modular Link Framework, was demonstrated.
DTI	R5-COP results presentation at ERF workshop: "How Do We Surpass Current Barriers to Efficient Deployment of New Robotics in Industry?" DTI was co-chair of the workshop.	EuRobotics Forum (ERF)	forum	21-23rd of March 2016, Ljubljana	http://www.erf2016.eu/	<ul style="list-style-type: none"> The DTI talk was entitled: "Deploying Mobile Service Robot Systems – lessons from the DTI Mobile CoWorker paradigm"
DTI	R5-COP results presentation at ERF workshop: "EU programmes – new funding opportunities for robotics projects"	EuRobotics Forum (ERF)	forum	21-23rd of March 2016, Ljubljana	http://www.erf2016.eu/	The DTI talk was entitled: "R5-COP (ECSEL programme)"
DTI	R5-COP results presentation at ERF workshop: "Recent progress in Research Reproducibility in Robotics: A critical enabler of research exploitation"	EuRobotics Forum (ERF)	forum	21-23rd of March 2016, Ljubljana	http://www.erf2016.eu/	The DTI talk was entitled: "Modularity as business enabler – the DTI CoWorker approaches"
DTI	Invited talk	Course for students at the "Technology and marketing" at the Danish Techni-	Presentation	31 st of August 2016		The presentation of MobiTools and other technologies from DTI was made to give the students a use case for developing marketing strategies based on modular robotics.

		cal University (DTU)				
DTI	Invited talk	First International Workshop on Sensing, Processing and Learning for Intelligent Machines (SPLINE2016)	International conference	6-8 th of July 2016	http://spline2016.aau.dk/	Talk entitled: "Deploying Emerging Mobile Service Robots – lots of opportunities but also barriers"
DTI	T. Heikkilä, T. Dobrowiecki, L. Dalgaard: "Dealing with configurability in robot systems"	In proceedings of the 12th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications (MESA 2016), Auckland, New Zealand	Conference Proceedings	August 29-31, 2016		Configurability in robotic system design
TRI	Robot Task Planning for Inspection Plants using Multi-Objective Heuristics	IEEE Congress on Evolutionary Computation 2017	International conference	June 2017	http://www.cec2017.org	<i>Pending acceptance</i> (6 th March 2017). This paper focuses on mission planning by presenting experimental results obtained over realistic scenarios of two heuristic solvers aimed at efficiently scheduling tasks in robotic swarms that collaborate together to accomplish a mission.
PIAP	Adam Dąbrowski, Mateusz Maciaś, Reconfigurable mobile robots in industry: can experience in security robotics help in industrial use cases?	EuRobotics Forum (ERF)	Forum	21-23rd of March 2016, Ljubljana	http://www.erf2016.eu/	R5-Cop results in bringing Scout to high modularity and reconfigurability were presented.

PIAP	Adam Dąbrowski, Mateusz Maciaś, Rafał Kozik	R5-Cop project workshop at ATC2016 in Madrid	Workshop	4-6 October 2016, Madrid	https://artemis-ia.eu/technology-conference-2016.html	<p>Workshop lead and organization, presentations on:</p> <ul style="list-style-type: none"> • Modular console (WP24) • HMI advanced and experimental interfaces (WP24) • ROS2 evaluation (WP31) <p>Demonstrations and hands-on sessions with:</p> <ul style="list-style-type: none"> • Scout platform (WP42), showcasing different configurations, including MLF. • Immersion Module, based on VR headgear and stereovision module. (WP24). • Modular console (WP24) • Augmented Reality demo and hands-on (WP24)
PIAP	Adam Dąbrowski, Rafał Kozik, Mateusz Maciaś, Evaluating the resilience of ROS2 communication layer	Roscon 2016	International conference	8-9 October, Seoul	http://roscon.ros.org/2016/	<p>We delivered a presentation on our work on evaluation of ROS2 (WP31). The content was as follows:</p> <p>One of the major reasons for development of ROS2 is the migration of communication layer to DDS. Robot users around the world, hitherto discouraged by the ROS shortcomings, might finally be considering joining the community. For all those who see the promise, there is a question of whether ROS2 will deliver on it. We introduce a project for measurable, repeatable evaluation of ROS2 communication in less than perfect networks. We will present the most recent results from the evaluation tool and draw conclusions: what has been achieved? What are the most important gaps to address?</p>

4 Summary of scientific journal publications for entire project period

#	Partner	Title	Main author	Title of periodical or series	Number, date, or frequency	Publisher	Publ. Place	Publ. Year	Relevant pages	Permanent identifier (e.g. DOI)	Is/will Open access provided to this publication?
0											
1	BME	Error Propagation and Signal Post-processing in Rocket-based Experiments	Gábor Balassa, Pál Bencze, Tadeusz Dobrowiecki (BME)	13th IMEKO TC10 Workshop on Technical Diagnostics, Advanced Measurement Tools in Technical Diagnostics for Systems' Reliability and Safety	June 26-27, 2014	IMEKO	Warsaw, Poland	2014	32-37	ISBN: 978-163266984-1	yes
2	BME	Fault Diagnosis in Intelligent Greenhouse Control with Decomposed Neural Models	Peter Eredics, Tadeusz P. Dobrowiecki (BME)	13th IMEKO TC10 Workshop on Technical Diagnostics, Advanced Measurement Tools in Technical Diagnostics for Systems' Reliability and Safety	June 26-27, 2014	IMEKO	Warsaw, Poland	2014	65-69	ISBN: 978-163266984-1	yes
3	BME	Rapid Development of Application-Oriented Natural Language Interfaces	Tamás Mészáros and Tadeusz Dobrowiecki (BME)	IEEE 18th International Conference on Intelligent Engineering Systems 2014 (INES 2014)	July 3-5, 2014	IEEE	Los Alamitos, CA	2014	1-8	DOI: 10.1109/INES.2014.6909341	
4	BME	Internet of Things: Application Areas and Research Results	Zoltán Gál, Béla Almási, Tamás Dabóczy (BME), Rolland Vida, Stefan Oniga, Sándor Baran, István Farkas	Infocommunications Journal	Sept. 2014, Vol. VI, No. 3,	HTE Hungary	Budapest	2014	37-44	ISSN 2061-2079	

5BME	Composability of Cyber-Physical Systems	Attila Szarvas, Csanád Erdős, and Tamás Dabóczy (BME)	Veszprém Optimization Conference: Advanced Algorithms (VO-CAL2014)	14-17 Dec, 2014	University of Pannonia	Veszprem, Hungary	2014	1-4	https://vocal.dcs.uni-pannon.hu/	
6BME	Reducing the measurement time of the Best Linear Approximation of a Non-linear System using improved averaging methods	Tadeusz P. Dobrowiecki (BME), Johan Schoukens	IEEE Int. Instrumentation and Measurement Technology Conf. (I2MTC 2015)	May 11-14, 2015	IEEE	Los Alamitos, CA	2015	623-628	DOI: 10.1109/I2MTC.2015.7151340	
7BME	FFT-based Spectrum Analysis in the Case of Data Loss	Laszlo Sujbert and Gyorgy Orosz (BME)	IEEE Int. Instrumentation and Measurement Technology Conf. (I2MTC 2015)	May 11-14, 2015	IEEE	Los Alamitos, CA	2015	800-805	DOI: 10.1109/TIM.2015.2508278	
8BME	Path Reconstruction based on Gyroscope Bias Estimation using GPS	István Engedy, Gábor Horváth (BME)	IEEE Int. Instrumentation and Measurement Technology Conf. (I2MTC 2015)	May 11-14, 2015	IEEE	Los Alamitos, CA	2015	1465-1470	DOI: 10.1109/I2MTC.2015.7151493	
9BME	Analyzing Numerical Optimization Problems of Finite Resolution Sine Wave Fitting Algorithms	B. Renczes, I. Kollár, P. Carbone, A. Moschitta, V. Pálfi, T. Virosztek (BME)	IEEE Int. Instrumentation and Measurement Technology Conf. (I2MTC 2015)	May 11-14, 2015	IEEE	Los Alamitos, CA	2015	1662-1667	DOI: 10.1109/I2MTC.2015.7151529	
10BME	Energy harvesting wireless sensors for smart home applications	Péter Györke, Béla Pataki (BME)	IEEE Int. Instrumentation and Measurement Technology Conf. (I2MTC 2015)	May 11-14, 2015	IEEE	Los Alamitos, CA	2015	881-886	DOI: 10.1109/I2MTC.2015.7151546	

11BME	Evaluating Symbolic Execution-based Test Tools	Lajos Csepentő, Zoltán Micskei (BME)	IEEE Int. Conf. on Software Testing, Verification and Validation (ICST)	13-17 April 2015	IEEE	Los Alamitos, CA	2015	1-10	DOI: 10.1109/ICST.2015.7102587	
12BME	SEViz: A Tool for Visualizing Symbolic Execution	Dávid Honfi, András Vörös, Zoltán Micskei (BME)	IEEE Int. Conf. on Software Testing, Verification and Validation (ICST), Tool Track	13-17 April 2015	IEEE	Los Alamitos, CA	2015	1-8	DOI: 10.1109/ICST.2015.7102631	
13BME	New search strategies for the Petri net CEGAR approach	Ákos Hajdu, András Vörös, Tamás Bartha (BME)	Conf. on Application and Theory of Petri Nets and Concurrency (PN 2015)	LNCS 9115	Springer	Berlin, Germany	2015	309-328	DOI: 10.1007/978-3-319-19488-2_16	
14BME	Saturation-based incremental LTL model checking with inductive proofs	Vince Molnár, Dániel Darvas, András Vörös, Tamás Bartha (BME)	Inf. Conf. Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2015)	LNCS 9035	Springer	Berlin, Germany	2015	643-657	DOI: 10.1007/978-3-662-46681-0_58	
15BME	A decomposition method for the verification of a safety-critical protocol	Tamás Tóth, András Vörös, István Majzik (BME)	7th International Workshop on Software Engineering for Resilient Systems (SERENE 2015)	LNCS 9274	Springer	Berlin, Germany	2015	31-45	DOI: 10.1007/978-3-319-23129-7_3	
16BME	Formal Validation of Domain-Specific Languages with Derived Features and Well-Formedness Constraints	Oszkár Seмерáth, Ágnes Barta, Zoltán Szatmári, Ákos Horváth, Dániel Varró (BME)	Int. Journal on Software and Systems Modeling (SoSym)	July 2015	Springer	Berlin, Germany	2015	1-36	DOI 10.1007/s10270-015-0485-x	
17BME	FFT-Based Spectrum Analysis in the Case of Data Loss	László Sujbert, György Orosz (BME)	IEEE Transactions on Instrumentation and Measurement	Volume: 65, Issue: 5	IEEE	Los Alamitos, CA	2016	968-976	DOI: 10.1109/TIM.2015.2508278	
18BME	Possibilities for On-line Detector Connectivity Checks in	Cs. F. Hajdu, T. Dabóczy (BME), Christos Zamantzas	Periodica Polytechnica Electrical Engineering and Computer Science	Paper 9777	BME	Budapest, Hungary	2017		DOI: 10.3311/PPE.e.9777	

		Beam Loss Monitoring Systems								
19BME	A Resource-Efficient Adaptive Fourier Analyzer	Cs. F. Hajdu, C. Zamantzas and T. Dabóczy (BME)	Journal of Instrumentation	Vol. 11, Oct. 2016	IOP Publishing	Bristol, UK	2016	1-14	DOI: 10.1088/1748-0221/11/10/P10014	yes
20BME	Analysis of the distortion of marker based optical position measurement as a function of exposure time	T. Dabóczy (BME)	IEEE Trans. on Instrumentation and Measurement	Vol. 66,	IEEE	Los Alamitos, CA	2016	1-12	DOI: 10.1109/TIM.2016.2566818	
21BME	Improved-Speed Parameter Tuning of Deconvolution Algorithm	T. B. Bakó and T. Dabóczy (BME)	IEEE Trans. on Instrumentation and Measurement	Vol. 65, No. 7	IEEE	Los Alamitos, CA	2016	1568-	DOI: 10.1109/TIM.2016.2534668	
22BME	On-line Detector Connectivity Check Based on a Parasitic Signal Coupling	Cs. F. Hajdu, T. Dabóczy (BME), Ch. Zamantzas	23rd International PhD Minisymposium	February 8-9, 2016	BME	Budapest, Hungary	2016	18-21	https://repositories.omikk.bme.hu/handle/10890/1546	yes
23BME	Dealing with Configurability in Robot Systems	T. Heikkilä, T. Dobrowiecki (BME), L. Dalgaard	12th IEEE/ASME Int. Conf. on Mechatronic and Embedded Systems and Applications (MESA)	August 29-31, 2016	IEEE	Los Alamitos, CA	2016	1-7	DOI: 10.1109/MESA.2016.7587120	
24BME	Overview and Prospects of Brain-Computer Interface Technology for Prosthetic Limbs	K. Várszegi and B. Pataki (BME)	23rd International PhD Minisymposium	February 8-9, 2016	BME	Budapest, Hungary	2016	50-53	https://repositories.omikk.bme.hu/handle/10890/1546	yes
25BME	Agent-based Reconfigurable Natural Language In-	T. Mészáros, T. Dobrowiecki (BME)	ICAART 2017, Int. Conf. on Agents and Artificial Intelligence	Feb 24-26, 2017	IEEE	Los Alamitos, CA	2017		(accepted)	

		terface to Robots									
26	BME	Formal Modeling of Real-Time Systems with Data Processing	T. Tóth and I. Majzik (BME)	23rd International PhD Minisymposium	February 8-9, 2016	BME	Budapest, Hungary	2016	46-49	https://repositories-um.omikk.bme.hu/handle/10890/1546	yes
27	BME	Distributed and Heterogeneous Event-based Monitoring in Smart Cyber-Physical Systems	L. Balogh, I. Dávid, I. Ráth, D. Varró and A. Vörös (BME)	1st Workshop on Monitoring and Testing of Cyber-Physical Systems, CPS Week 2016	11 April 2016	IMTCP S	Vienna, Austria	2016	1-2	http://mtcps16.ait.ac.at/	yes
28	BME	Component-wise incremental LTL model checking	V. Molnár, A. Vörös, D. Darvas, T. Bartha and I. Majzik (BME)	Formal Aspects of Computing	Volume 28, Issue 3	Springer	Berlin, Germany	2016	345–379	DOI:10.1007/s00165-015-0347-x	
29	BME	Iterative and Incremental Model Generation by Logic Solvers	Semeráth, O., Vörös, A., and Varró, D. (BME)	19th International Conference on Fundamental Approaches to Software Engineering (FASE 2016), LNCS 9633	April 2016	Springer	Berlin, Germany	2016	87-103	DOI: 10.1007/978-3-662-49665-7_6	
30	BME	Efficient Decomposition Algorithm for Stationary Analysis of Complex Stochastic Petri Net Models	A. Vörös, V. Molnár, I. Majzik, K. Marussy, M. Telek and A. Klenik (BME)	37th Int. Conf. on Application and Theory of Petri Nets and Concurrency, LNCS 9698	19-24 June	Springer	Berlin, Germany	2016	281-300	DOI: 10.1007/978-3-319-39086-4_17	
31	BUT	Simplified Industrial Robot Programming: Effects of Errors on Multimodal Interaction in WoZ experiment	Zdenek Martena	IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)	26-31 Aug	IEEE	New York	2016		610.1109/RO-MAN.2016.7745111	
32	DTI	Technology	Lars Dalgaard	In proceedings of				2014			

		Assessment in Robotic Systems Design using PAPIKA		the 7th International Conference on Human System Interaction (HSI2014)						
33DTI		The R3-COP Decision Support Framework for Autonomous Robotic System Design	Lars Dalgaard	In proceedings of the joint 45th International Symposium on Robotics and 8th German Conference on Robotics (ISR-Robotik-2014)			2014			
34FAU		A Testing Pattern for Automatic Control Software Addressing Different Degrees of Process Autonomy and Cooperation	Saglietti, Francesca	Proceedings 19th IFAC World Congress	24. - 29.8.2014	IFAC	20141599-1604		10.3182/20140824-6-ZA-1003.01997	
35FAU		Testing the Cooperation of Autonomous Robotic Agents	Lill, Raimar	Proceedings of ICISOFT-EA 2014	29. - 31.8.2014	Scitepress Digital Library	2014287-296		10.5220/0004990402870296	
36FAU		Model-based Design and Testing of Decisional Autonomy and Cooperation in Cyber-physical Systems	Saglietti, Francesca	Proceedings EUROMICRO SEAA 2015	26. - 28.8.2015	IEEE	2015479-483		10.1109/SEAA.2015.68	
37FAU		Reconfiguration Testing for Cooperative Autonomous Agents	Saglietti, Francesca	Computer Safety, Reliability, and Security	Sept. 2015	Springer	2015144-155		10.1007/978-3-319-24249-1_13	
38FAU		Model-driven Structural and Statistical Testing of Ro-	Saglietti, Francesca	Proc. Third Workshop on Model-Driven Robot Software Engin-	July 2016	ACM Digital Library	2016			

		bot Cooperation and Re-configuration		eering						
39FAU		Quantitative Reliability Assessment for Mobile Cooperative Systems	Saglietti, Francesca	Computer Safety, Reliability, and Security - SAFE-COMP 2016 Workshops - ASSURE, DECSoS, SASSUR, and TIPS	20. - 23.09.2016	Springer		2016118-129	10.1007/978-3-319-45480-1	
40FAU		Systematic and Probabilistic Testing of Autonomous Mobile Robots	Saglietti, Francesca	Autonomous Systems 2016	Oct 2016	VDI Verlag		201640-45		
41HUT		Reconfigurable Equiplets Operating System A Hybrid Architecture to Combine Flexibility and Performance for Manufacturing	Daniël Telgen	International Journal on Advances in Software	2015 vol 8 nr 3&4	IARIA		2015		
42LTU		Evaluation of Visual Localization Systems in Underground Mining	C. Kanellakis	24th Mediterranean Conference on Control and Automation				2016	10.1109/MED.2016.7535853	No
43LTU		Development of a full-scale, low cost Unmanned Ground Vehicle for Search and Rescue Missions	D. Kominiak	Annual Swedish Control Community Meeting				2016		
44PFI		A configurable CAD-based object recognition system for	Jari M. Ahola	12th IEEE/ASME International Conference on Mechatronic and Embedded Sys-				2016		No

		varying resolution 3D-sensors,		tems and Applications						
45SAX	Introducing R5-COP	J.M. Zwikker	Mikroniek	2015, issue 6	DSPE	Eindhoven	201528-31	none	Yes	
46SIN	Vind: a robot self-localization framework	Jon Azpiazu	Proceedings of the 4th International Conference on Control, Mechatronics and Automation	4th (yearly)	MATEC Web of Conferences	Barcelona (Spain)	2016n/a	n/a	Yes	
47SIN	Maintenance and inspection of infrastructures with the use of UAVs	Marialena Vagia	In preparation							
48TUBS	A Scriptable Standard-Compliant Reporting and Logging Framework for SystemC	R. Meyer, J. Wagner, B. Farkas, S. Horsinka, P. Siegl, R. Buchty, and M. Berekovic	ACM TECS	16(1)	ACM		2016		No	
49TUBS	An Open and Flexible SystemC to VHDL Workflow for Rapid Prototyping	B. Farkas, S. A. A. Shah, J. Wagner, R. Meyer, R. Buchty, and M. Berekovic	Design and Verification Conference (DVCon) Europe 2016 Proceedings				2016		Yes	
50TUBS	Universal Scripting Interface for SystemC	R. Meyer, J. Wagner, R. Buchty, and M. Berekovic	Design and Verification Conference (DVCon) Europe 2015 Proceedings				2015		Yes	
51TUBS	A scriptable, standards-compliant reporting and logging extension for SystemC	2015 International Conference on Embedded Computer Systems: Architectures, Modeling, and Simulation (SAMOS)					2015		No	
52TUBS	On RTL to	S. A. Hor-	NoCArc '14: Pro-				2014		No	

		TLM Abstraction to Benefit Simulation Performance and Modeling Productivity in NoC Design Exploration	Sinka, R. Meyer, J. Wagner, R. Buchty, and M. Berekovic	ceedings of the 2014 International Workshop on Network on Chip Architectures						
53	TUBS	A lightweight-system-level power and area estimation methodology for application specific instruction set processors	S. A. A. Shah, J. Wagner, T. Schuster, and M. Berekovic	Power and Timing Modeling, Optimization and Simulation (PATMOS)			2014			No
54	TUBS	Reconfigurable ROS-based Resilient Reasoning Robotic Cooperating Platforms -- R5-COP	R. Buchty	The Parliament Magazine	423	Dods		2015	40-41	Yes
55	UTC	Improving local stereo algorithms using binary shifted windows, fusion and smoothness constraint	Mircea Paul Muresan	2015 IEEE International Conference on Intelligent Computer Communication and Processing (ICCP)			2015	pp. 179-185	10.1109/ICC P.2015.7312626	No
56	UTC	New sub-pixel interpolation functions for accurate real-time stereo-matching algorithms	V. C. Miclea	2015 IEEE International Conference on Intelligent Computer Communication and Processing (ICCP)			2015	pp. 173-178	10.1109/ICC P.2015.7312625	No
57	UTC	Real-time multi-resolution digital elevation map creation using	Szilard Mandici	2016 IEEE 19th International Conference on Intelligent Transportation Systems			2016	pp. 608-615	10.1109/ITS C.2016.7795616	No

		the sensor model of a stereovision sensor		(ITSC)							
58UTC		A Multi Patch Warping Approach For Improved Stereo Block Matching	Mircea Paul Muresan	2017 12th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications (VIS-APP)				2017			No
59VTT		Dealing with Configurability in robot systems	Tapio Heikkilä	12th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications				2016			No
60VTT		A configurable CAD-based object recognition system for varying resolution 3D-sensors,	Jari M. Ahola	12th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications				2016			No
61VTT		Performance Evaluation of Time-of-Flight Depth Cameras	Matti Laukkanen	Master's Thesis	Aalto University,	Espoo		2016		http://urn.fi/URN:NBN:fi:alto-201512165702	Yes