H2020—ICT—732410

RobMoSys

COMPOSABLE MODELS AND SOFTWARE FOR ROBOTICS SYSTEMS

DELIVERABLE 5.4:
OPEN CALL I EVALUATION AND SELECTION

Marie-Luise Neitz, Technische Universität München (TUM)

Project acronym: RobMoSys

Project full title: Composable Models and Software for Robotics Systems

Work Package: WP 5, Management of Open Calls

Document number: 5.4

Document title: Open call I Evaluation and Selection

Version: 1.0

Due date: June 30th, 2017

Delivery date: 30.06.2017

Nature: Report (R)

Dissemination level: Public (PU)

Editor: Marie-Luise Neitz, Technische Universität München (TUM)

Author(s): Marie-Luise Neitz, Technische Universität München (TUM)

Reviewer: Christian Schlegel (HSU), Chokri MRAIDHA (CEA)

[Please use the table below as an internal changelog. Delete before submitting the deliverable.]

Date	Name	Changes/Comments
03.01.2017	Marie-Luise Neitz	Provision of the first full draft of the deliverable

Executive Summary

The deliverable is prepared by TUM and reviewed by CEA, HSU and KUL. The report contains a short introduction of the call and submission statistics, preparatory documents for the evaluation of the proposals, the selection of expert evaluators and assignment of proposals to review during the remote evaluation process and during the panel meeting. Deliverable 5.4 is contributed by task 5.4: Evaluation and Selection.

1 Introduction and Methodology

This report covers *the First Call for RobMoSys Contributions.* The first call was opened on July 10th and closed on October 9th. In the framework of this first call, 6-7 teams will be selected, with competences in **tooling**, **development of models** and **generation of associated software** (implementations that realise the models, and that are created/configured by the tooling) demonstrated on **system**-level prototypical scenarios in, e.g., navigation and manipulation. The tools, models and software developed by the successful third parties of this first open call will then be made publically available and serve to the industrial experiments as well as be integrated in the second Open Call.

RobMoSys asks for contributions that **realise a step change** in system-level composition for robotics, and that demonstrate this in **real-world scenarios**. The step change must not only be visible in the modelling foundation of the contributions, but also in the **industry-grade quality** of their realisation. Indeed, in the medium-term future, companies should be able to rely on the RobMoSys outcomes to build robotic applications by composing high quality composable models and associated software functions.

The *First Call for RobMoSys Contributions* was published and evaluated on the Open Calls platform[1]; ensuring, not only the transparency, but also the cohesion of all the processes in the management of the open call. The evaluation stage has been handled with the aid of the same *electronic tools* implemented during the preparation and publication of the call, as the defined in *Deliverable 5.1, section 4.2*. It was decided to handle all interactions with the Evaluators on the *Ticketing System[2]* to assure the continuity and recording of all the communications.

An extended version of the timeline included in the aforementioned deliverable is presented in Figure 1, to better identify the stages and tasks of the first open call. The dates had to be adjusted in order to provide enough time to the contracted experts to perform all the tasks of the remote evaluation (i) independent evaluation, (ii) consensus discussion and (iii) consensus report; to account for the cases in which a third evaluator was necessary, and to have a suitable quorum for the Panel Meeting.
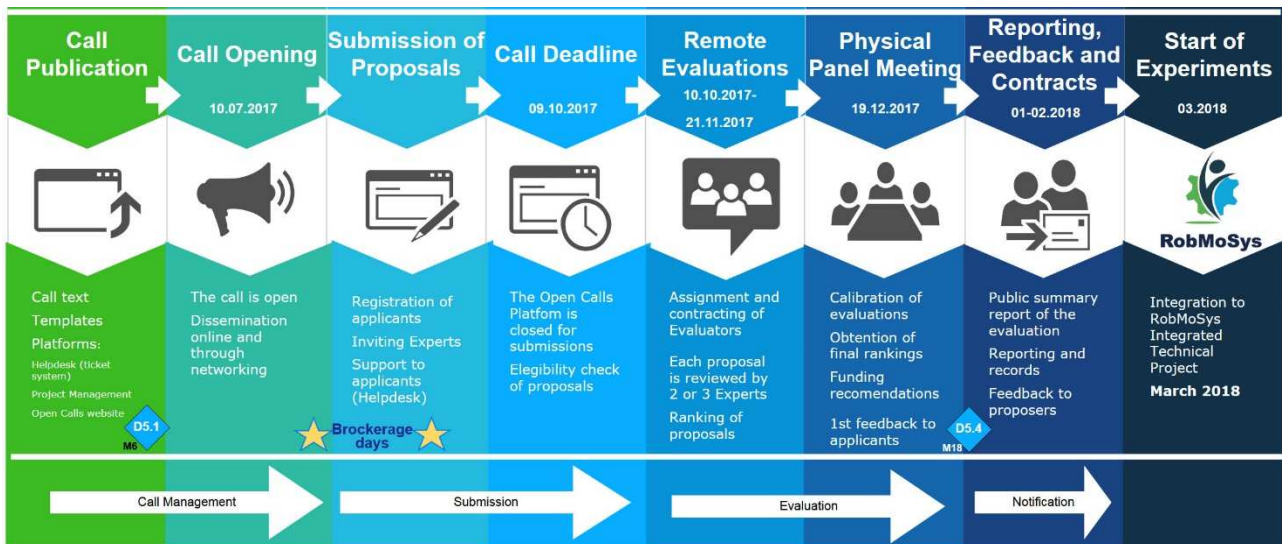
Figure 1. Timeline of the First Call for RobMoSys Contributions

The Physical Panel Meeting was held in Munich in December 19th 2017, whereupon it was sent, via the ticketing system, a first feedback to the applicants of the eligible proposal, stating that the evaluation result would be sent mid-January.

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[1] https://opencalls.robmosys.eu/forms/overview/17
[2] The ticketing system was implemented on OTRS5, with the email opencalls@robmosys.eu

The evaluation process was broken down into three steps, following the timeline outlined in Figure 2

(i) *Remote Evaluation I:* Two independent experts evaluated each admissible proposal, and submitted individual *evaluation reports*.

(ii) *Remote Evaluation II:* One of the experts that reviewed the proposal during the first step was assigned as rapporteur, and was in charge of initializing the Consensus Blog on the RobMoSys Open Calls Platform. The two expert evaluators formed a remote consensus group, guided by the rapporteur, to discuss their individual evaluation reports and agree on comments and scores. When a consensus was not reachable, the rapporteur was instructed to request the involvement of a third evaluator. The discussion resulted in a *consensus report* drafted by the rapporteur, for which the evaluators explicitly agreed on the text and final marks for each criterion.

Third Evaluator: Because of significant differences between the scores for proposals 133 and 135, a third evaluator was involved. The supplementary evaluator had no access to the previous evaluations to guarantee impartiality, but was invited to participate in the consensus blog once the independent evaluation was submitted. Following this process, it was possible to reach a consensus for the evaluation of proposal 135, but due to the importance of taking into consideration the recorded minority, the three (3) independent evaluations were discussed during the physical meeting.

(iii) *Physical Panel Meeting*: held with a subset of four (4) independent experts that participated in the first step of the evaluation, and was led by the panel chair. The selection process and tasks of the panel chair are outlined in 3.1 Panel Chair.

In preparation to the meeting, each panellist was assigned 6-7 proposals to overseen the reports and to raise the ones with a potential discussion needed, and to prepare short summary on the assigned proposals (main idea, strengths, weaknesses).

During the first round of discussions of the panel meeting, all the proposals were discussed, giving the possibility to adjust the scores, even in the case of proposals below threshold. After which the panellists discussed the results from the remote evaluation and the consensus repots, to ensure that the consensus groups were consistent in their evaluations. Upon which the final ranking of proposals was established.

As the panellists could not update the consensus reports during the one-day physical meeting held on December 19th, 2017, the final versions of the consensus reports were submitted by e-mail after the physical meeting.
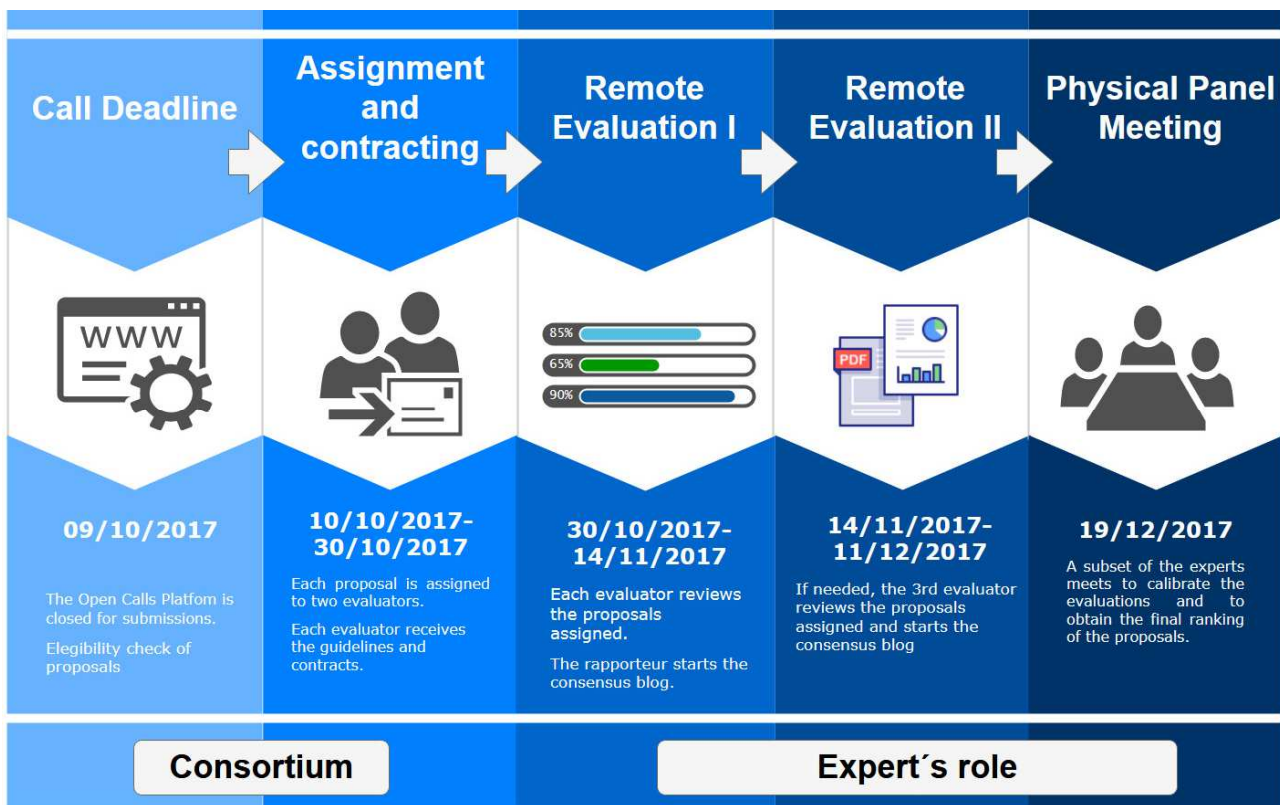
Figure 2. Timeline of the evaluation process

2 Remote Evaluation

The underlying principles for the evaluation of proposals during the remote evaluation and the physical panel meeting were established in accordance to the *Good practices and templates for organizing open calls under the H2020 Financial Support to Third Parties scheme* (Annex 3).

- **Excellence**: projects must demonstrate a high level of quality in relation to the topics and criteria set out in the calls
- **Transparency**: funding decisions must be based on clearly defined rules and procedures, and applicants should receive adequate feedback on the outcome of the evaluation
- **Fairness and impartiality**: all proposals must be treated equally and evaluated impartially on their merits, irrespective of their origin or the identity of the applicants
- **Confidentiality**: all proposals and related data, knowledge and documents must be treated in confidence

The evaluators had access to their assigned proposals via the Open Calls Platform. At the end of the remote evaluation, a provisional ranked list was available, in addition to 25 Consensus Reports. During the panels, all proposals, above and below threshold, were discussed to establish the final scores, to then produce the final ranked list.

2.1 Evaluation Criteria

The proposals were evaluated according to the criteria presented in the Guide for Applicants and the Guide for Independent Experts:

1. Expected impact	Weight: 35%
- Size of the potential users group(s) - Potential extension of the RobMoSys ecosystem coverage - Accessibility of the results, preferring open source licensing that enables composability similar to proven platform projects as Eclipse	Score: ? / 10 *(Threshold: 6/10)*
2. Technical excellence	Weight: 35%
- Compliance with the RobMoSys meta-models and methodology - The excellence w.r.t. the state of the art in the field - Quality - Envisioned Technology Readiness Level - Clarity of suggested KPIs	Score: ? / 10 *(Threshold: 6/10)*
3. Implementation of the ITP	Weight: 30%
- Coherence, appropriateness, effectiveness - Composition of the tandem/consortium - Risk management	Score: ? / 10 *(Threshold: 6/10)*
Remarks	
Ethical implications and compliance with applicable international, EU and national law	*Essential*
OVERALL SCORE :	Score: ? / 30 *(Threshold 21/30)*

Table 1. Evaluation Criteria

2.2 Assignment of Proposals to Evaluators

For the evaluation of the proposals the Consortium invited experts from relevant related domains[1] to register on the Open Calls Platform. Upon closure of the call, the assignment of proposals to evaluators was done based on keywords, diversity of domains and exclusion criteria.

Once the call was closed for submissions, the platform generated a list of potential evaluators for each proposal by matching the *keywords* from the proposals to the keywords selected by the experts when they registered on the Platform.

Then, in order to ensure that each proposal would be evaluated by at least two evaluators from different technology field or application area, these lists were manually prioritized based on the *expertise areas* stablished in the submitted CVs.

As a prevention of potential conflicts of interest during the remote evaluation, an *exclusion criterion* was implemented list by list, i.e. the experts were removed from the list of potential evaluators for a given proposal, if they were from the same institution as the applicants, or had joint publications in the last 5 years.

Finally, before granting access to the proposals, the evaluators received a list with the names of the applicants of each proposal assigned to them, plus a definition and examples of conflicts of interest, and a form to declare potential and disqualifying conflicts of interest.

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[1] *Expertise areas of the evaluators* : Software infrastructure; Advance platforms; Robot software development, market based approaches; AI and cognition in robotics; Systems and software engineering methods for cyber physical systems; Systems engineering and automation; Manufacturing engineering (industry 4.0)

2.3 Documents provided to the Evaluators

A guide for independent expert evaluators for proposals received in response of the first RobMoSys Open Call was produced and sent to the reviewers before they started the evaluation process. This document included:

- Guidelines on the evaluation process: Timeline, evaluation process, definition of Conflicts of Interest
- User manuals: Open Calls platform and evaluation on the platform
- All call documents as provided to the applicants
- A list of must read RobMoSys WiKis to aid the evaluators to familiarize with RobMoSys.

3 Panel Meeting

The Panel meeting was formed by a limited group of experts that acted as evaluators and rapporteurs during the remote evaluation. They were responsible of the further evaluation of the fit with the expected contributions, impact and feasibility of the proposed plan under the concrete constraints of the RobMoSys call.

During the Panel Meeting, Dr. Christian Schlegel (HSU) acted as observer providing the necessary insight into RobMoSys objectives. His participation was limited to repliying panelists' inquiries about RobMoSys and giving commentaries about the suitability to RobMoSys; he had no vote in the selection of the ranking of proposals, nor during the adjustment of scores.

The panel meeting ensured that (i) the consensus groups were consistent in their evaluations, (ii) when necessary, propose a new marks or statements, (iii) and resolved the cases where a consensus could not be reached and a minority view was recorded in the remote consensus report.

The panel review resulted in a **panel report** drafted by a panel chair. The panel report includes the **evaluation summary report (ESR)** for each proposal, a list of proposals passing all thresholds, along with a final score (**panel ranked list**). The Panel produced a ranked list of the proposal, and recommended that the top six (6) ranked proposals for funding and integration into the RobMoSys work plan as experiments.

3.1 Panel Chair

The Panel Chair was selected from the experts who agreed to join the panel, and was invited individually. This selection was done based on his scientific expertise and capacity to lead the discussion and produce the reports.

The responsibilities of the panel chair included:

1. To read all the applications, via the evaluation section of the Open Calls Platform and related consensus reports, sent by email.
2. To keep the meeting strictly to time. It is suggested that any proposals that received low scores during the remote evaluation, and for which the rapporteurs agreed with the low scores, should be given very little time for discussion before collecting the panels' scores. This allows more time for the discussion of stronger proposals and those were there was an unresolved difference of opinion, i.e. the cases in which we had to involve a third remote evaluator.
3. To lead the voting for changes in scores or commentaries. When any of the panellists raises for discussion a change in scores, for any of the proposals, the panel chair should request each panellist to state their score per criterion, after which an assistant will compute the average of the scores per criterion and the total weighted sum. Upon which the panellist should call for voting, and approve the changes when there is a majority vote.
4. To encourage the panel to take the description of the call into consideration when scoring.

5. To lead the discussion of the ranking and selection of proposals that should be recommended for funding, according to score and indicative funding available.
6. To keep brief notes during the panel meeting, regarding any notable events, and provide a written report after the meeting.

The panel chair was provided a template for the panel report.

3.2 Impartiality

The panelist must perform his/her work impartially and take all measures to prevent any situation where the impartial and objective implementation of the work is compromised.

For the cases in which one of the experts if employed or contracted by one of the same institution than an applicant, the expert was invited to take part in the panel meeting by following the *Out of the room* rule. The participation of this expert was justified by the requirement to appoint the best available experts and the limited size of the pool of qualified experts. In addition that the expert works in a different department than the applicants.

4 Evaluation Results

Upon closure of the call submission platform on October 9th, 2017 at 17:00 GMT+1, 34 proposals were submitted. The reasons for non-admissibility of nine (9) of the received proposals are stated in Table 1. The non-admissible proposals were not considered, neither for remote evaluation nor in the panel meeting.

Proposal ID	Non-admissibility reason
92	Double submission (corresponds to proposal 230)
96	Preproposal submission
100	Incomplete: No implementation, KPIs, management of knowledge and IP, Ethics
102	Preproposal submission
179	Incomplete: No budget, excellence, impact, implementation, KPIs, management of knowledge and IP, Ethics
217	Double submission (corresponds to proposal 230)
218	Double submission (corresponds to proposal 230)
250	Double submission (corresponds to proposal 247)
252	Test submission

Table 2. Non-Admissible Proposals

The general statistics for the proposals reviewed in the remote evaluation and in the panel can be found in Table 2.

RobMoSys Call 1	Eligible Proposals	Above thresholds Remote Evaluation	Above thresholds Panel Meeting
Number of proposals	26	11	6
Percentage	100%	42.3%	23.1%

Table 3. Evaluation overview

The eligibility of proposals followed a two-step filtering process: first considering the score per criterion and then the overall score, obtained by arithmetic sum. The proposal will be considered as eligible for funding if

each mark is not less than 6/10 and the overall score not less than 21/30.

1. Expected impact: (weight 35% and threshold 6/10)

2. Technical excellence: (weight 35% and threshold 6/10)

3. Implementation of the ITP: (weight 30% and threshold 6/10)

    Overall score: threshold 21/30

In addition, the RobMoSys consortium agreed upon taking into account the focus as a criterion because it is better to take smaller scope of models, and perfecting them; as making models is an order of magnitude harder than writing code.

After the panel, six (6) proposals were suggested for possible funding, as shown in Table 3 below. Taking the indicative budget of the first call and the expected high quality of the proposal's contents into account, the decision was made to suggest all proposals with a score of 21 or more for funding.

Rank	Proposal-ID	Proposal Acronym	Partners		Focus
1	234	Plug & Bench	Politecnico di Milano	Italy	Robotics benchmarking
			Fraunhofer Instotute for Manufacturing Engineering and Automation (IPA)	Germany	
2	244	MOOD2BE	Fundacion EURECAT	Spain	Behavioral trees addressing final state machines
3	242	eITUS	Fundacion Tecnalia Research & Innovation	Spain	Infrastructure and safe-aware robotics' models
			AKEO PLUS	France	
4	182	CARVE	Fundazione Isituto Italiano di Tecnologia	Italy	Behavioral trees addressing agricultural and food robotics
			Universitá degli Studi di Genova	Italy	
			ALES Srl	Italy	
5	205	EG-IPC	Universiteit Twente	Netherlands	Intrinsically stable passive controller subsystems for manipulators
			Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderoek - TNO	Netherlands	
6	191	RoQMe	Universidad de Extremadura	Spain	Non-functional properties through global robotic quality service
			Universidad de Málaga	Spain	
			Biometric Vox SL	Spain	

Table 4. Proposals suggested for funding

4.1 Analysis of the selected proposals

The proposals recommended for funding, as shown in Table 3, cover a broad range of research topics and application fields, and they are in line with the expectations of the call. Specifically two (2) out of the six (6) selected proposals addressed Behavioural trees.

Based on an intensive discussion of the panel meeting in regards to attaining the maximum benefit for the RobMosys project, scientifically and in terms of expenditure, it was recomended to only fund the six top

ranked proposals. Although, with this approach the accumulative budget of the six (6) recommended proposals is below the indicative budget of the first call, this would allow to extend the modelling foundations of RobMoSys by utilizing the remaining budget on an additional round for proposals.

Rank	Proposal	Score	Budget
1	234	29	253500,00
2	244	28,5	138500,00
3	242	28	212699,75
4	182	27,5	240982,50
5	205	26	250000,00
6	191	22	268289,25

The six (6) experiment consortia involve partners from five European countries; the distribution is shown in Figure 3. Out of the thirteen (13) new partners, eleven (11) are non-profit organizations. The total accumulative budget of the six (6) selected proposals is 1,363,971.50 Eur, with the request budget per organization ranging from 46,114.25 to 148,537.50 Eur.
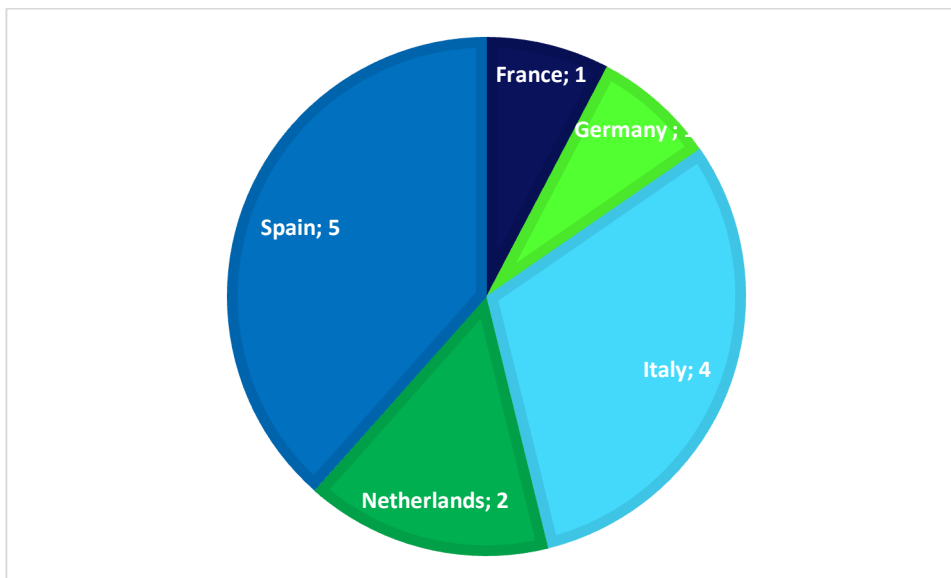

Figure 3. Country distribution of selected partners

4.2 Analysis of all received proposals

The majority of the proposals showed a good implementation of the Integrated Technical Project, ITP, (57,7% of the proposals were above 6), whereas only half of the proposals scored above 6 in Technical Excellence, and slightly less than half in Expected Impact.
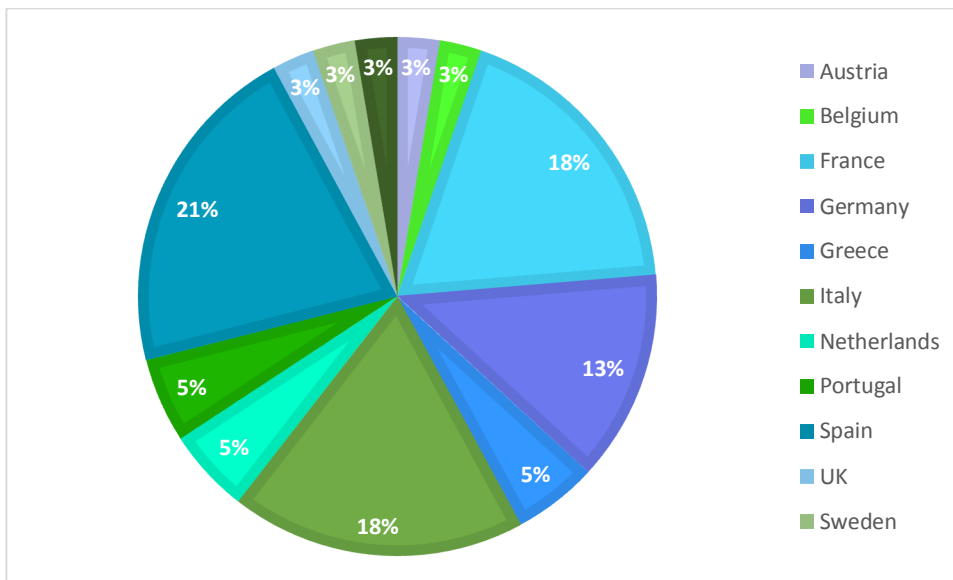
Figure 4. Countries involved in the proposals

There were no proposals involving countries outside of the EU and Associated Countries.

The total grant amount requested by all the received proposals is about 6.5 M€.

5   Outlook

The applicants received a first feedback in December to inform them that the remote evaluation and panel meeting took place. The applicants will receive a notification letter and the evaluation report of the proposal via the help-desk system (opencalls@robmosys.eu) a month after the Panel Meeting.

Annex 1 – Guide for Expert Evaluators

Guide for Independent Expert Evaluators

Composable models and software for Robotics Systems

RobMoSys

Call for Expression of Interest (CEoI) proposals

Summary – please read this page before looking at the first proposal!

What is to be done by the expert evaluators:

1. **Read the proposal** with the below remarks in mind

2. **Formulate comments and scores** per criterion

3. **Fill out the web form** for all the proposals assigned

The evaluation process of RobMoSys consists of two main stages:

1. **Remote evaluation** and **Consensus** finding for the individual proposals (remotely via the RobMoSys Open Calls Platform)

2. **Physical panel meeting** for calibration of the evaluations and for setting up a final ranking

Timeline:

09.10.2017: call deadline
10.10.2017 – 30.10.2017: assignment and contracting
30.10.2017 – 14.11.2017: remote evaluation I
14.11.2017 – 21.11.2017: remote evaluation II (if 3rd evaluator is needed)
Mid- December: physical panel meeting

Contents

The RobMoSys project in one sentence:

"We now join forces to solve the real difficult challenges, to complement the simple topics that have been addressed in various ways already several times, but all more or less at the same level''

1. Introduction

RobMoSys's vision is that of an agile, multi-domain, model-driven European robotics software ecosystem. It will consist of specialized set of players with both vertical and horizontal integration levels, providing both widely applicable software products and software-related services. This ecosystem will be able to rapidly address new functions and domains at a fraction of today's development costs.

Within the project timeframe, the ambition is to shape a European digital industrial platform for robotics.

All expert evaluators must read the links to the RobMoSys Wiki provided in Annex 1 and the general remarks provided during the pre-preproposal evaluation (Annex 2).

The Call for Expression of Interest (CEoI) for RobMoSys Contributions is one of the tools applied towards achieving that vision. It will allow to identify the best tools already available, the best modelers and developers to adjust them and the best application areas to validate the results and establish benchmarks. This will result in standards to describe robot systems and system building blocks as well as their interaction. The resulting software systems will be modular, composable, re-usable and easy to use. The second goal of the open call is to provide the access to integrated sets of common tool chains and real-world test installations to support the development of complex robotics systems.

Within the platform concept, the First Open call focuses on composable software development (models, tools and meta-models) while the Second Open Call focuses on system-level through application pilots using the RobMoSys ecosystem. By the end of this first open call, it is expected that the community will already be able to benefit from industry-grade modeling tools supporting the creation of robotic applications that can be built by composing high quality composable models and associated software functions in the domains of motion, perception, navigation and manipulation.

The proposed contributions to the RobMoSys ecosystem should represent generally applicable solutions (blueprints in form of models / meta-models explicated), whose benefit is prototypically show-cased in a scenario-illustration. Thus, proposals need to illustrate their contribution in a relevant use-case (for component-level or system-level or run-time properties of composition) with coverage of tooling (not just paperwork / pipe dream), models (composable, architectural pattern, a design principle, an engineering model), and systems (prototypical scenario).

The project asks for contributions that realize a step change in system-level composition for robotics, and that demonstrate this in real-world scenarios. The step change must not only be visible in the modelling foundation of the contributions, but also in the industry-grade quality of their realization. Indeed, in the medium-term future, companies should be

able to rely on the RobMoSys outcomes to build robotic applications by composing high quality composable models and associated software functions.

Each of the projects has a maximum duration of 12 months, the financial support that will be granted to third parties will be typically in the order of €50,000 to €250,000 and may not exceed 250,000 € EU contribution for each third party. The maximum budget granted to one experiment is 300,000 €. The total indicative funding for this first call is €2,000,000. Thus, RobMoSys will fund a maximum of 6 to 7 experiments in this first round.

The structure of the expected work, specific scenarios and tasks can be found in the Guide for Applicants (Annex 4) and Proposal Template (Annex 5).

1.1   The role of the Expert Evaluators

In particular, Evaluators are responsible for evaluating proposals submitted in response to a call for proposals based on the work programs. They may also act as a rapporteur, panel member, or panel chair at consensus discussions or meetings of panels of evaluators. **Rapporteurs** are responsible for drafting the **consensus report (CR)** of a consensus meeting.

1.2   Evaluation principles

The underlying principles to bear in mind during evaluation are:

- **Excellence**: projects must demonstrate a high level of quality in relation to the topics and criteria set out in the calls
- **Transparency**: funding decisions must be based on clearly defined rules and procedures, and applicants should receive adequate feedback on the outcome of the evaluation
- **Fairness and impartiality**: all proposals must be treated equally and evaluated impartially on their merits, irrespective of their origin or the identity of the applicants
- **Confidentiality**: all proposals and related data, knowledge and documents must be treated in confidence
- **Speed and efficiency**: proposals should be evaluated and grants awarded and administered as swiftly as possible, without compromising quality or breaking the rules

What is the ambition of a project to become an ambassador of the RobMoSys ambitions?

As a consortium we consider two key non-technical KPI's of a proposal:

- The openness/willingness to cooperate with the consortium partners and with the community
- The extent to which a project can plant the seeds for further cascading impact/cooperation to relevant non-robotics communities.

1.3   Ethical implications

It is **essential** that the ethical implications comply with applicable international, EU and national law. Proposers should demonstrate that they are mindful of the fact that the citizens of Europe trust the public R&D endeavour to produce tangible results benefiting society by advancing health, economic growth, and quality of life across all communities.

Research activities in Horizon2020, and particularly in RobMoSys must respect fundamental ethical principles, particularly those outlined in
http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/ethics/h2020_hi_ethics-self-assess_en.pdf

2. Evaluation process

The Figure 1 below depicts the main steps of the evaluation process and highlights at which stages the Experts intervene.
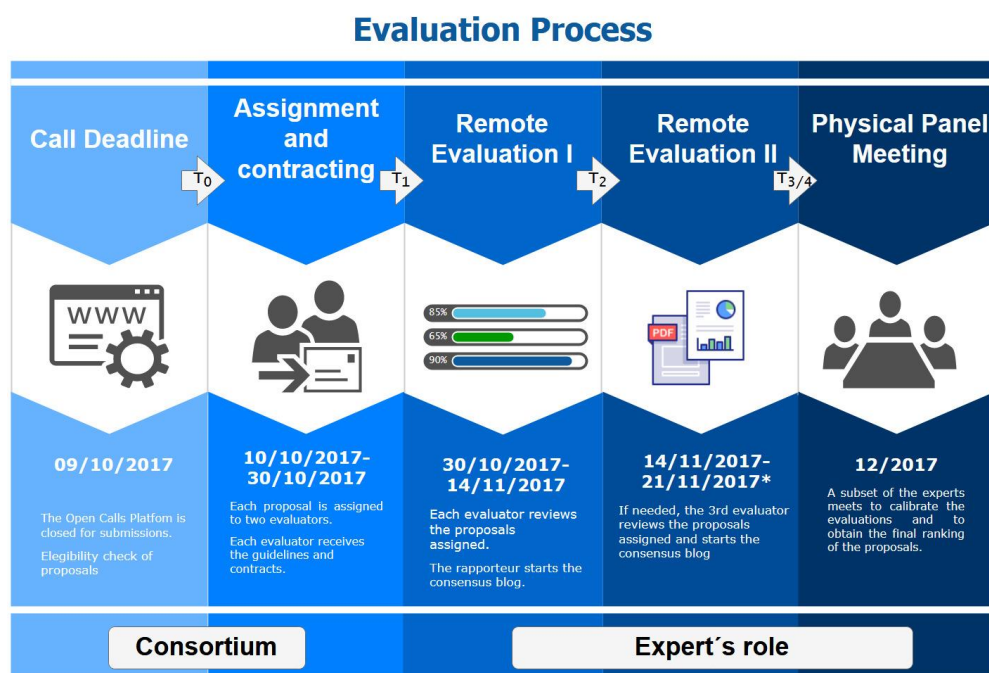
Figure 1. Evaluation process of RobMoSys open Call I

2.1.   Call deadline

Before proposals are sent for evaluation, they are checked for admissibility and eligibility[1] (see sections 3.2). Moreover, when contracting independent Expert Evaluators, the Consortium ensures - to the best of its knowledge - that experts do not have any conflicts of interest[2] on the activity that they have to undertake (see section 3.3). The experts

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[1] http://ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/from-evaluation-to-grant-signature/evaluation-of-proposals/elig_eval_criteria_en.htm
[2] http://ec.europa.eu/research/participants/data/ref/h2020/experts_manual/h2020-experts-mono-contract_en.pdf#page=43

should be independent, impartial and objective, and behave professionally at all times. To avoid situations of conflicts of interest, the Consortium may withdraw experts from evaluation or monitoring duties. The experts will be informed and advised if this happens.

2.2. Assignment and Contracting

Once the proposals have been assigned to the expert evaluators, they will receive their contract documents including (i) a declaration of confidentiality and non-existence of conflict of interest (if any conflict arises in the course of the duties, the experts must inform the consortium); (ii) a questionnaire to ensure that the expert will be acting as an independent/self-contracted individual; (iii) a list of the proposals assigned as evaluator and/or rapporteur; and upon submission of (i) and (ii) signed, they will receive (iv) their contract.

2.3. Remote evaluation I and II

Two independent experts evaluate the full proposals remotely via the RobMoSys Open Calls Platform. They indicate if the proposal (i) falls entirely outside the scope of the part of the call that they are evaluating or (ii) involves ethical issues that will need further scrutiny.

The **evaluation criteria** are:

- o Expected impact
- o Technical excellence
- o Implementation of the ITP

For each criterion, the Expert Evaluators give a **provisional score** between **0 and 10 points** and formulate a set of positive or negative **arguments**. Each argument should be described with two or three lines of text.

See **Table 1** for how to assign the scores.

Table 1. Obtaining the scores

0	**The proposal fails to address the criterion**	The proposal fails to address the criterion under examination or cannot be judged due to missing or incomplete information.
1-2	Poor	The criterion is addressed in an inadequate manner, or there are serious inherent weaknesses.
3-4	Fair	While the proposal broadly addresses the criterion, there are significant weaknesses.
5-6	Good	The proposal addresses the criterion well, although improvements would be necessary.
7-8	Very good	The proposal addresses the criterion very well, although certain improvements are still possible.
9-10	Excellent	The proposal successfully addresses all relevant aspects of the criterion in question. Any shortcomings are minor.

The eligibility of proposals follows a two-step filtering process: first considering the score per criterion and then the overall. The proposal will be considered as eligible for funding if each mark is not less than 6/10 and the overall score not less than 21/30.

1. **Expected impact:** (weight 35% and threshold 6/10)
2. **Technical excellence**: (weight 35% and threshold 6/10)
3. **Implementation of the ITP:** (weight 30% and threshold 6/10)

   Overall score: threshold 21/30

In addition, the RobMoSys consortium agreed upon taking into account of **focus** as a criterion because it is better to take smaller scope of models, and perfecting them. We know from experience that making models is an order of magnitude harder than writing code.

In evaluations with large differences between the evaluators, the Consortium has the discretion to involve a third evaluator (see section 3.1) and the remote evaluation II will start. The third evaluator will not see the other evaluations.

Consensus

Once the evaluation is completed, the expert evaluators form a **remote consensus group** to come to a common view, discuss their individual evaluation reports and agree on comments and scores. The Rapporteur initializes the **Consensus Blog** on the RobMoSys Open Calls Platform where the provisional marks are turned into a final score. The final marking is based on the comments of the evaluators made on the Consensus Blog and not on the arithmetical mean of the scores of the individual reports. The evaluators explicitly agree on both the text and the final mark for each criterion.

The consensus group discussion results in a **Remote Consensus Report (RCR)** drafted by the Rapporteur including justifications of scores and dissenting views, if any. It is of the utmost importance that, once the consensus is reached, each evaluator explicitly agrees with the report and the marks. This RCR is the base document for the decisions to be made in the panel meeting. Moreover, the RCR will be sent to the applicants whose proposals have below threshold score.

2.4. Physical Panel Meeting

The Physical Panel Meeting is formed by a limited group of experts who have acted as evaluators and/or rapporteurs during the remote evaluation. They will further evaluate the fit with the expected contributions to this CEoI, to ensure that (i) the consensus groups have been consistent in their evaluations, (ii) if necessary, propose a new set of marks or comments, (iii) and resolve cases where a consensus could not be reached and a minority view was recorded in the consensus report.

This Panel, formed by a sub-set of Experts that participated in the first step of the evaluation, will further evaluate the fit with the expected contributions and impact, and feasibility of the proposed plan to integrate as an experiment for RobMoSys.

The Panel will also be advised by a group of consortium partners on the relevance of the top-ranking proposals to RobMoSys.

The panel review results a **panel report** drafted by a panel chair. The panel report includes the **evaluation summary report (ESR)** for each proposal, a list of proposals passing all thresholds, along with a final score (**panel ranked list**) and, where necessary, the panel's recommendations for priority order in the event of equal scores, using the procedure set out in the work programme. The Panel will rank the proposal list and the top-ranked proposals will be funded and integrated into the RobMoSys work plan as experiments. The PR will be sent to the applicants.

2.5. Evaluation timing

Time	Action(s)
T0 = 09.10.2017	**First open call for experiment proposals for RobMoSys contributions is closed**
T1= 30.10.2017	**Assignment of proposals and contracting** Each proposal is assigned to two evaluators. One evaluator acts as a rapporteur. Each evaluator receives all the information related to proposals and the credentials to access the RobMoSys Open Calls platform. Each evaluator is assigned to the Consortium, who monitors the evaluator's activity, issues reminders and provides procedural advice to evaluators, if requested
T2= 14.11.2017	**Remote evaluation I completed.** The Consortium reminds the evaluators ten working days and four days before this deadline that the first evaluation come to the end. Once both evaluators have reviewed the proposals assigned, the rapporteur starts the Consensus blog inviting the other evaluator to express his / her agreement. Once agreement in the consensus blog has been reached, the rapporteur informs the Consortium. If the agreement in the Consensus blog has not been reached, the rapporteur informs the Consortium which will appoint a 3rd evaluator. The Rapporteur drafts the Remote Consensus Report (RCR).
T3=21.11.2017	**Remote evaluation II completed.** The consortium reminds the 3rd evaluator before this deadline that the remote evaluation II is coming to an end. The 3rd evaluator acts as rapporteur and starts the Consensus blog. Once agreement in the consensus blog has been reached, the rapporteur informs the Consortium.

T final= Mid December (18-20.12.2017)	**Panel meeting**. A number of experts who acted as evaluators participate in the panel meeting to calibrate the evaluations and to obtain the final ranking of the proposals. The Panel Report (PR) will be drafted and sent to the applicants.

The above are **hard deadlines**. If a deadline is not met by an evaluator, the proposal will be assigned to another expert evaluator.

Expert evaluators are invited to contact the consortium members for assistance with procedural issues relating to evaluation (deadlines, web platform, and general guidelines to write reports). The consortium members are not allowed to give advice related to the content of the proposal, i.e., they cannot interfere in any way with the individual judgments of the experts. Evaluators are requested to reply to the consortium members communications within one working day.

3. Directions for expert evaluators and rapporteurs

When writing their arguments, expert evaluators and rapporteurs should be precise and explicit. The wording must express clear judgment about the positive and negative qualities of the proposal.

- The experts should not refer to individual evaluations (i.e., do not use sentences like "Evaluator# thinks that"). Also, when the views of the evaluators are summarized in the ESR, internal contradictions must be avoided (which may be due to partially contradictory statements by evaluators, e.g., when a sentence like "The goals of the proposal XXXX are unclear/vague" is followed by a bold statement on the goals, e.g., "The project goals will represent a significant advance with respect to the state of the art in the field").
- Comments expressing personal preferences or views for equipment items chosen by proposers are not appropriate (e.g., avoid sentences like "XXX data protection strategy should be used instead of YYYY"). Should a suggestion for alternative equipment be needed, the general features of the alternative equipment should be reflected in the report.
- Although an ideal length for each section of the report cannot be defined, reports that are too brief in a single section (less than 100 words) should be avoided. In particular, negative evaluations should always be detailed.

Please keep the instructions above in mind in order to avoid confusing the different criteria (e.g., comments related to technical quality reported in sections 2 and/or 3) or repetitions (i.e., the same comment in different sections).

3.1 Conditions to involve a third evaluator

A third evaluator is involved:

- if one evaluator marks the proposal above the thresholds while the other evaluator scores the proposal below thresholds or

- If both evaluators score the proposal above thresholds and the difference between the overall marks is greater than or equal to 3 points

The scores of all three evaluators will be combined.

Figure 3 shows the evaluation workflow of Expert evaluators and rapporteurs of proposals submitted to the first Open Call of RobMoSys.
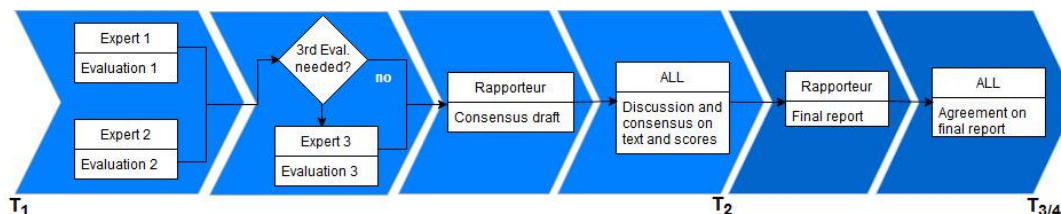

Figure 3. Evaluation workflow of RobMoSys Open call I

3.2 Admissibility and Eligibility Criteria

ADMISSIBILITY CRITERIA[3]

A proposal is admissible if it:

- is submitted via the official online submission system before the call deadline
- is complete – accompanied by the requested administrative data, proposal description and any supporting documents specified in the call.
- is readable, accessible and printable

Furthermore, page limits will apply to proposals/applications. The proposal must not exceed the maximum number of pages indicated in the proposal template.

ELIGIBILITY CRITERIA[4]

A proposal is eligible if:

- its contents are in line with the topic description in the call
- it involves enough of the right participants and meets Standard eligibility criteria and any other eligibility conditions set out in the call or topic page

3.3 Rules for Conflicts of Interest

It should always be foreseen in the open call that entities that are beneficiaries to the GA ensure the impartial and objective implementation of the action and take all measures to

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[3] http://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2016_2017/annexes/h2020-wp1617-annex-b-adm_en.pdf
[4] http://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2016_2017/annexes/h2020-wp1617-annex-c-elig_en.pdf

prevent any situation with 'conflict of interests' for reasons involving economic interest, political or national affinity, family or emotional ties or any other shared interest. Therefore the beneficiaries cannot apply.

As regards other entities who have some link (loose or not) to the beneficiary entities, these can apply to the call as long as the evaluation process (thus the evaluators) is completely independent and none of the above situations with conflict of interest occurs and neither is the impartial and objective implementation of the action compromised. This will have to be demonstrated in the reports that EC/PO receives from the consortium as regards the process and results of the calls that have taken place. The EC/PO should as usual not be otherwise involved in the open call process

In addition to a high level of competence, evaluators must not have any conflicts of interests. A disqualifying conflict of interest exists if an evaluator:

- Was involved in the preparation of the proposal,
- Could stand to benefit, or be disadvantaged, as a direct result of the evaluation carried out,
- Has a close family relationship with any person representing a participating organisation in the proposal,
- Is a director, trustee or partner of any beneficiary, participating in the proposal, or is a subcontractor/third party carrying out work for any beneficiary in the proposal concerned,
- Is employed by one of the beneficiaries, participating in the proposal or by a subcontractor/third party carrying out work for any beneficiary in the proposal concerned,
- Is in any other situation that comprises his or her ability to review the proposal impartially. Evaluators with disqualifying conflicts of interest cannot take part in the evaluation of experiments. A potential conflict of interest may exist, even in cases not covered by the clear disqualifying conflicts indicated above, if any expert:

- Was employed by one of the participating organisations in a proposal in the last three years

- Is involved in a contract or research collaboration with a participating organisation, or had been so in the previous three years

  • Is in any other situation that could cast doubt on his or her ability to review the proposal impartially, or that could reasonably appear to do so in the eyes of an external third party Evaluators cannot evaluate proposals where they have a potential conflict of interest. Also, they are excluded from the panel meeting.

Annexes

Annex 1: Must read RobMoSys Wikis

The following links provide an overview and introduction into RobMoSys:

- RobMoSys in a minute video
  - o https://robmosys.eu/robmosys-in-a-minute/
- General entry point into the RobMoSys way of thinking
  - o https://robmosys.eu/wiki/
  - o https://robmosys.eu/wiki/glossary
  - o https://robmosys.eu/wiki/faq
- The Slides of the Brokerage Days (Frankfurt e.g.)
  - o https://robmosys.eu/downloads/#1500636697754-2-6
- User Stories
  - o https://robmosys.eu/user-stories/
  - o https://robmosys.eu/wiki/general_principles:user_stories
- Composition and Separation of Roles and the PC analogy
  - o https://robmosys.eu/approach/
  - o https://robmosys.eu/wiki/composition:introduction
  - o https://robmosys.eu/wiki/general_principles:ecosystem:roles
- Tooling
  - o https://robmosys.eu/wiki/baseline:roadmap

## Annex 2: Pre-proposal evaluation: general remarks

As a special service to potential applicants, the RobMoSys Consortium implemented the option of pre-proposal submission via the RobMoSys Open Call Platform during the first nine weeks after publication of the call. Members of RobMoSys then provided specific commentaries on each pre-proposal, and general remarks to all the applicants:

- RobMoSys provides many structures on its Wiki, and the pre-proposals do not exploit this enough.
- Core concepts of RobMoSys rarely occur in the preproposals: modeling, composability, separation of roles, tooling, workflow, …
- A lot of the pre-proposals reformulate the RobMoSys ideas but do not explicate how exactly they link to the realisation of these ideas. Instead, they describe their project as another isolated and not linked island. While this is not unusual for research projects, the RobMoSys context allows for a lot more interaction between projects, and especially, with the RobMoSys project partners.
- A proposal should describe the formal semantics of the meta models that the project is going to create. Of course, the description need in itself not yet be formal to the extent that computer tools can process them, but can remain at the level that human experts understand. What is expected is an overview of the entities, relations and constraints that will be part of the meta model; an indication of what will _not_ be part of the meta models can also be relevant information, as a step towards better "separation of concerns and roles".
- The separation between concepts, models and code in frameworks is often not clear, and especially the deployment into concrete software processes and hardware platforms is often not identified explicitly. Hence, chances are high that a lot of "behaviour" is implicit, which compromises the "multi-vendor" composability ambition. For example, it is not expected that a project that focuses on the modelling and tooling for algorithms (motion, perception, world modelling) also covers all aspects of the deployment of these algorithms into software processes, via middlewares, on operating systems, or on bare embedded hardware
- Since a project should have a clear scope of what its meta model(s) will cover, we need an explanation of how these meta models help with the composition with other meta models, and how they would help to realise "multi-vendor" software libraries. For example, by means of "invariants" on the behaviour of an activity, or the input and output variables of a function; these invariants are then constraints that can be taken into account during composition.
- A proposal should explain its approach to choosing a host language for the (meta) modelling, and how to support model-to-model transformations, between host languages, but also between their meta models and other similar meta models or code frameworks. This topic is one of the examples where an explicit "outsourcing" cooperation with members of the RobMoSys consortium makes sense and can be identified explicitly. The consortium partners indeed have a better view on what host languages to use, and how to provide tooling for them, across all running projects as well as the consortium's own developments.

- A proposal should explain its relevance to the "platform" ambition of Call 1, that is, to motivate that application behaviour/structure/semantics are completely decoupled from the generic aspects.
- If proposal asks funding for the development of ROS-based code, it is strongly stimulated to realise this via a complementary proposal in the ROSIN project Calls, and to spend the RobMoSys efforts on making sure the models, tools and software are middleware and framework agnostic.
- Most pre-proposals are too ambitous in the scope they want to cover; it's better to cover a smaller scope but do it perfectly. Indeed, with respect to semantic completeness and composability, small meta models make things simpler. It is required to explicate how proposed meta-models conform to / map into / attach to RobMoSys structures in order to avoid to end up with separated, isolated sets of meta-models.

Annex 3: How-To Guide for the Evaluation of Proposals on the Open Calls Platform

To access the list of proposals assigned to you, either as evaluator or rapporteur, after login in into the RobMoSys Open Calls Platform
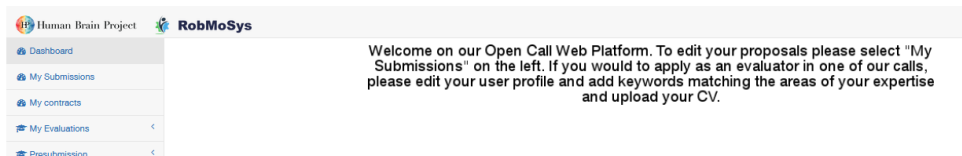
Select on the left-side-menu **1** *My Evaluations*, **2** *List of Evaluations*. On the next page there will be a list of the calls for which you will act as an Evaluator, upon selecting **3** *Evaluate*, you will see the list of proposals assigned to you.
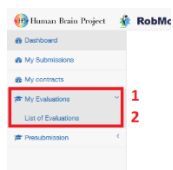
On the list page you can see the current status of each of your assigned evaluations, and select to either **4** *Evaluate,* to work on your evaluation, or **5** *Blog,* to access the *Consensus Blog.*

Evaluation Module

On the **evaluation module** for each for each proposal, you can **(I)** download the proposal, **(II)** see the *keywords*, and the **(III)** *Evaluation Criteria* (and weights) for the specific call. In **(IV)** you can assign the scores and justifications for each criterion, while you can add private notes in **(V)** *Your Comments*. In the drop-down menu **(VI)** you can select the *current status* of your evaluation (Work/DONE).

My Evaluations

Finally, by selecting **(VII)** *Update your evaluation*, you can save the current status of the form.

Consensus Blog

By selecting **5** *Blog,* in *My Evaluations/Call Topic/Proposal name*,

My Evaluations

You can **(I)** *Open a topic,* **(II)** post your comments, **(III)** start another discussion topic, or **(IV)** *read* and participate in an existing discussion.

On the blog discussion modules, the previous comments **(V)** are on the top of the page, and **(VI)** reply area is below.

All the interactions on the blog discussion are saved with a time-stamp:

Rapporteur Module

If you have been appointed as **Rapporteur**, on *My Evaluations* you will be able to access the **6** *Rapporteur* module.

The *Rapporteur* module will be activated only after all the assigned Evaluators have submitted their evaluations:
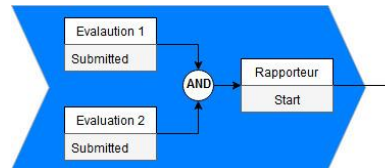
Once active, the *Rapporteur* module has a similar arrangement than the *Evaluation* module with the **(I)** proposal and **(II)** keywords submitted by the applicant are on the left-side; and the scoring area on the right.

The later contains the evaluations **(III)** and **(IV)**, with the corresponding scores and comments, and the **(V)** *average* of the evaluation scores, as indicators; the **(VII)** consensus section should be filled respecting the **(VI)** evaluation criteria and *Consensus Blog*.

The **(VIII)** *Average* is the overall score, and is computed from the consensus scores **(VII)** and not from the scores assigned by the Evaluators. Before finalizing the consensus report, you will have to add the **(IX)** *Final Report*, and the **(X)** comments for the applicant.

Thresholds per criterion and overall, and final score

While the final score is computed directly on the Open Calls platform, as Expert Evaluator and/or Rapporteur, you will have to filter the proposals twice: first considering the score per criterion and then the overall. The proposal will be considered as eligible for funding if each mark is not less than 6/10 and the overall score not less than 21/30.

If the proposals that you review are under the threshold in any criterion, or overall, please add a note on the corresponding comment section. In addition, all ethical implications must compliance with applicable international, EU and national law.

Table 2. Weight and threshold per criterion

Criterion 1: Expected impact	Weight: 35%
- Size of the potential users group(s) - Potential extension of the RobMoSys ecosystem coverage - Accessibility of the results, preferring open source licensing that enables composability similar to proven platform projects as Eclipse	*Threshold: 6/10*
Criterion 2: Technical excellence	Weight: 35%
- Compliance with the RobMoSys meta-models and methodology - The excellence w.r.t. the state of the art in the field - Quality - Envisioned Technology Readiness Level - Clarity of suggested KPIs	*Threshold: 6/10*

Criterion 3: Implementation of the ITP	Weight: 30%
• Coherence, appropriateness, effectiveness • Composition of the tandem/consortium • Risk management	*Threshold: 6/10*
Final Score	
OVERALL SCORE :	*Threshold 21/30*
WEIGHTED SCORE:	*?/10*

Annex 4: Guide for Applicants

GUIDE FOR APPLICANTS

First Open Call for RobMoSys Contributions

Contents

1. General information

RobMoSys's vision is that of an agile, multi-domain, model-driven European robotics software ecosystem. It will consist of specialized set of players with both vertical and horizontal integration levels, providing both widely applicable software products and software-related services. This ecosystem will be able to rapidly address new functions and domains at a fraction of today's development costs.

Within the project timeframe, the ambition is to shape a European digital industrial **platform** for robotics.

The Open Call for RobMoSys Contributions is one of the tools applied towards achieving that vision. It will allow identifying the best tools already available, the best modelers and developers to adjust them and the best application areas to validate the results and establish benchmarks. This will result in standards to describe robot systems and system building blocks as well as their interaction. The resulting software architecture will be modular, composable, re-usable and easy to use. The second goal of the open call is to provide the access to integrated sets of common tool chains and real-world test installations to support the development of complex robotics systems.

2. Expected contributions and impact

The project asks for contributions that realize a step change in system-level composition for robotics, and that demonstrate this in real-world scenarios. The step change must not only be visible in the modelling foundation of the contributions, but also in the industry-grade quality of their realization. Indeed, in the medium-term future, companies should be able to rely on the RobMoSys outcomes to build robotic applications by composing high quality composable models and associated software functions.

Proposals need to illustrate all of the following aspects:

- Their contribution to the digital industrial platform for robotics through which all kinds of use-cases will be addressed (you can find inspiration from the RobMoSys technical user-stories http://robmosys.eu/wiki/general_principles:user_stories).
- their coverage of all of the following: tooling, models (composable, architectural pattern, a design principle, an engineering model), and associated software (implementations that realize the models, and that are created/configured by the tooling) demonstrated on system-level prototypical scenario (http://robmosys.eu/wiki/baseline:start);
- The importance of links between roles, views, levels, concerns etc., instead of dealing with them in isolation;
- Their contribution in a target domain, preferably in robot-centric motion, navigation and manipulation.

It is crucial that the contributions to the RobMoSys ecosystem strictly adhere to the RobMoSys modelling principles (composability and conformity to meta-models http://robmosys.eu/wiki/modeling:composition-structures:start). Full open source contributions are preferred but not mandatory. However, we expect at least the models and their transformations to proprietary tools to be under an open source license that enables composability similar to proven

platform projects like Eclipse.

3. Activities, eligibility and funding

<u>Activities eligible for funding:</u>

Types of activities that qualify for financial support are **software developments** under the form of:

- **Models**
  - Composable models of components (ports, blocks, connectors enriched with composition constraints, resource requirements, etc.).
  - Models of system-level composition (system composed out of models of components) within a relevant use-case (composition for design-time or run-time composability).
  - Models to realize an architectural pattern, a design principle or best practice.
- **Tools and Meta-Models**
  - Extensions to and/or improvements of, the provided RobMoSys meta-models (for instance for additional non-functional concerns such as Quality of Service, timing, performance, etc.).
  - Extensions to and/or improvements of, the provided RobMoSys tools baseline (e.g. for design-time predictability, sanity checks, composability analysis, formal conformance verification, etc.).

Within the platform concept, the First Open call focuses on composable software development (models, tools and meta-models) while the Second Open Call focuses on system-level through application pilots using the RobMoSys ecosystem.

<u>Cost categories eligible for funding:</u>

In RobMoSys open-call Integrated Technical Projects (ITP), mainly address personal expenses (staff and travel). Up to 25% of the budget can be reserved for consumables needed to cover activities related to use case implementation in Pilots. Equipment costs are not eligible, all the necessary equipment (robotic platforms, etc.) are made available by third-parties themselves.

Participants of these ITP are allowed to sub-contract 10% of the budget, but sub-contracting should not cover core activities and they have to be specified very clearly in the proposal.

Each proposal for an ITP will include justifications of costs and resources. Checking the consistency between these costs and the expected work of the ITP will be part of the evaluation of ITPs.

<u>Inter ITP workshops:</u>

All accepted ITPs commit themselves to participate in inter ITP workshops. The purpose of the workshop is to improve harmonization of different ITP contributions to the RobMoSys platform and ecosystem and to strengthen cooperation among ITPs. It is intended to have two one-day inter ITP workshops during the runtime of ITPs.

Funding rates and payment schemes:

In the RobMoSys ITPs, one or more organizations can apply for funding by submitting a proposal describing their goal, the technical plan to achieve it, and an estimate of the involved cost. The non-profit third parties will be funded 100% of their respective direct cost (including 25% indirect costs). Funding for the for profit making third parties is limited to 70% of the respective direct costs (including 25% indirect costs). The financial support provided by RobMoSys will cover a maximum amount of EUR 300,000 (EC funding rules for H2020 apply), with the involved organizations committing to finance the remaining share. Third parties can receive pre-financing of up to 25%. Further payments will be made upon successful completion of milestones and/or deliverables as specified in the respective contract with CEA and measured against Key Performance Indicators (KPI).

Key Performance Indicators:

ITP proposals suggest a limited but sharp set of individual KPIs, these KPIs will be fine-tuned during the preparation of the contract.

Entities eligible for funding:

Because of the expected step change contributions, the Call welcomes, in particular, consortia offering complementary, multi-disciplinary competences that go beyond the mainstream robotics community; for example, robotics experts teaming up with software engineering people, or tool builders, or experts from automotive, aerospace, embedded cyber physical systems.

In RobMoSyS, financial support may be provided to any legal entity possessing a validated Participant Identification Code (PIC). At the moment of submission, though, the entity can apply with the provisional PIC. Once these conditions are met, financial support can be given to natural persons, public or private bodies, research organizations, non-profit organizations, small and medium enterprises, international organizations, international organizations of EU interest, established in an EU Member State or in an Associated Country.

Maximum funding and possibility to participate in several proposals:

The funding is limited to 300,000€ for an ITP in total. There are no restrictions regarding the number of proposals in which an entity can participate. However, the funding for the beneficiary (as defined by the EC[1]) will not exceed 250,000€ (even if a party participates in more than one ITP), restriction of shifts between partners in an ITP concerning this matter will be part of the contract.

4. Proposal submission

The proposal will be submitted via the proposal submission platform. The platform will provide:

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[1]http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/amga/h2020-amga_en.pdf

- The functionalities to enter general/administrative proposal information and partner data.

- The functionalities to upload a completed proposal document, providing full scientific details of the proposal.

- Information which is required to avoid any potential conflict of interest (e.g. relations to the current RobMoSys Partners).

- Contacts for administrative, scientific / technical and RobMoSys-related questions

- The link to a ticketing system to address your requests / enquiries

It is the proposers' responsibility to ensure the timely submission of proposals. The complete proposal consists of (i) the completed and uploaded proposal template and (ii) the completed web forms.

Once the requested information has been entered, the portal will allow you to download a combined scientific-administrative document for your reference. You can submit as many times as you like and the version submitted most recently before the deadline will be considered for evaluation. However, the deadlines given in these guidelines are binding and proposals submitted after the deadline will not be taken into consideration.

Shortly after the effective submission of the proposal, an acknowledgement of receipt thereof will be sent to the e-mail address of the proposal coordinator named in the submitted proposal. The sending of an acknowledgement of receipt does not imply that a proposal has been accepted as eligible for evaluation. For any given proposal, the ITP coordinator acts as the main point of contact between the ITP team and RobMoSys.

Upon receipt by RobMoSys, proposals will be registered and their contents entered into a database to support the evaluation process. Eligibility criteria for each proposal will also be checked by RobMoSys before the evaluation begins. Proposals that do not fulfil these criteria will not be included in the evaluation. A proposal will only be considered eligible if it meets all of the following conditions: (i) it was received before the deadline given in the call text, (ii) template and web forms (all sections!) have been completed and (iii) the eligibility criteria set out in Section 3 – Activities, eligibility and funding are met.

5. Ethical issues

Research activities in Horizon 2020, and particularly in RobMoSys, should respect fundamental ethical principles, particularly those outlined in "The European Code of Conduct for Research Integrity" . Therefore, questions about ethical issues are to be addressed in the proposal text, if ethical issues apply to an ITP, before and during the runtime of the research activities within RobMoSys, including the approval by the relevant committees.

6. Pre-proposals

As a special service to potential applicants, pre-proposals can be submitted via the RobMoSys Open Call Platform during the first nine weeks after publication of the call. A member of the staff of the RobMoSys Project will respond to applicants within a reasonable period, if longer than five business days the applicants will be informed. The response will be limited to clarifying whether the proposal fits into the scope of the call and how the proposal could be improved. Please note that it is not mandatory to submit one and it has no influence on the evaluation of the full proposal. Pre-proposal should be based on the Proposal Template but Excellence and Impact sections are obligatory.

7. Proposal evaluation and selection

The evaluation will be performed in two steps. In the first step, the experts will review each proposal according to the expected impact, realistic estimations of effort and benefit, timeline, transfer potential to other domains and cost (see Section 9 - Proposal evaluation criteria).

Each proposal will be evaluated by at least two acknowledged evaluators with different expertise, for example in the technology field or in application area(s). External experts (independent of the RobMoSys consortium and of any proposer) as well as internal experts from the core consortium will be involved in the evaluation process.

The external experts will sign a declaration of confidentiality concerning the contents of the proposals they read and declaration of absence of any conflict of interest. Both the confidentiality and the conflict of interest rules will follow the Code of Conduct set out in the Annex 1 of the H2020 Model Contract for experts:

http://ec.europa.eu/research/participants/data/ref/h2020/experts_manual/h2020-experts-mono-contract_en.pdf

The outcome of the first step will be a ranked list of all proposals based on the individual scores obtained by each proposal. In the second step, during a physical or virtual panel meeting, the most promising candidates will be identified based on the individual evaluations. The chair of the panel will inform all the participants about the results of evaluation and selection. A public summary report will be published on the project website within 30 days from the end of the selection procedure.

8. Redress procedure

Upon receiving the evaluation results the applicants have two weeks to start the redress procedure by sending complaint via the proposal submission platform.

9. Proposal evaluation criteria

Expected results of ITPs are evaluated according the following criteria:

1. Expected impact	Weight: 35%
- Size of the potential users group(s) - Potential extension of the RobMoSys ecosystem coverage - Accessibility of the results, preferring open source licensing that enables composability similar to proven platform projects as Eclipse	Score: ? / 10 *(Threshold: 6/10)*
2. Technical excellence	**Weight: 35%**
- Compliance with the RobMoSys meta-models and methodology - The excellence w.r.t. the state of the art in the field - Quality - Envisioned Technology Readiness Level - Clarity of suggested KPIs	Score: ? / 10 *(Threshold: 6/10)*
3. Implementation of the ITP	**Weight: 30%**
Coherence, appropriateness, effectiveness	Score: ? / 10

• Composition of the tandem/consortium • Risk management	*(Threshold: 6/10)*
Remarks	
Ethical implications and compliance with applicable international, EU and national law	*Essential*
OVERALL SCORE :	Score: ? / 30 *(Threshold 21/30)*

Annex 5: Proposal Template

The proposal template was provided in word and LaTeX.

Proposal Template

For First Open Call for RobMoSys Contributions

Project acronym:	RobMoSys
Project Grant Agreement:	No. 732410
Project Full name	Composable Models and Software for Robotics Systems
Project web address:	http://robmosys.eu/
Call title:	First open call for experiment proposals for RobMoSys contributions
Call indentifier:	RobMoSys-1FORC
Full Call information	http://robmosys.eu/open-calls/
Call publication date:	10.07.2017
Proposal Submission Deadline:	09.10.2017, at 17:00 (Brussels time)
Proposal Submission web address:	proposal submission platform
Expected duration:	12 months
Total Budget:	€2,000,000. Maximum funding per proposal: €300,000 (including 25% indirect costs)
More information:	opencalls@robmosys.eu

Contents

- This template is for the 1st call for RobMoSys Integrated Technical Project (ITP) proposals. The content of this form must conform to the **Guide for Applicants**.
- Call opens 10th July 2017
- This form may be submitted electronically any time before the 9th October 2017, 17:00 Brussels time, to the electronic submission facility at the RobMoSys proposal submission platform. This form does not require budgetary information because budgetary information must be provided via the electronic submission platform.

Text in red represents comments and should be deleted in your submission. Page limits refer to this text style in word: Times New Roman 11 pt font, Line spacing 1.15 lines, 6pt after, Standard A4 page size and margins

Excellence (limit: 4 Pages)

The evaluation criteria applying to the Excellence section can be found in the Guide for Applicants.

Impact (Limit: 1 Page)

The evaluation criteria applying to the Impact section can be found in the Guide for Applicants.

Implementation (limit: 4 Pages)

The evaluation criteria applying to the Implementation section can be found in the Guide for Applicants.

Provide a work description including at least:

- Task list including the timing of the different tasks, efforts and role of partners
- List of deliverables[1]
- List of milestones

List of Key Performance Indicators (limit: 1 Page)

Management of knowledge and of IP (limit: 1 Page)

Appendix. Ethical issues

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[1] Please indicate the nature of the deliverable using one of the following codes: R = Report, P = Prototype, D = Demonstrator, O = Other. Please indicate the dissemination level using one of the following codes: PU = Public, PP = Restricted to other programme participants (including the Commission Services), RE = Restricted to a group specified by the consortium (including the Commission Services, CO = Confidential, only for members of the consortium (including the Commission Services).

Annex 2 – Panel Report

Panel Report

First Open Call for RobMoSys Contributions

December 19th, 2017

Munich, Germany

Version: January 9, 2018

Contents

Date December 19th, 2017

Panel Chair Arne Hamann

1.   Introduction and methodology

This report covers the Panel Meeting for First Open Call for RobMoSys Contributions , held in Munich, Germany , on December 19th, 2017 . This call was opened on July 10th and closed on October 9th, 2017 at 17:00 GMT+1. It targeted the objectives mentioned in the *Guide for Applicants*. General statistics about the proposals which were reviewed in the remote evaluation and in the panel can be found in Table 1.

	Eligible Proposals	Above thresholds after Remote Evaluation	Above thresholds after Panel Meeting
Number of proposals	26	11	6
Percentage	100%	42.3%	23.1%

Table 1: Evaluation overview

There were 9 incomplete and/or test proposals, or that corresponded to the pre-proposal submission. Those were not considered, neither for remote evaluation nor in the panel meeting.

Upon confirming the eligibility of the proposals, the applicants and the absence of conflicts of interest, the evaluation process was divided into three steps:

1. Two independent experts submitted their individual evaluations via the Open Calls Platform. In case of significant differences[1], a third evaluator was involved.

2. One of the independent experts wrote a Consensus Report (CR) based on the individual evaluations and the blog discussions.

3. A *Panel Meeting* was held with a subset of 4 independent experts that acted as evaluators during the remote evaluation to discuss all proposals and decide about a final ranking (see Section 3).

Each ITP was evaluated according to three criterions: *Expected Impact*, *Technical Excellence* and *Implementation*.The eligibility of proposals followed a two-step filtering process: first considering the score per criterion and then the overall score, obtained by arithmetic sum. A proposal was considered as eligible for funding if each mark is not less than 6/10 and the overall score not less than 21/30:

Expected Impact   weight 35% and threshold 6/10

Technical Excellence   weight 35% and threshold 6/10

Implementation of the ITP   weight 30% and threshold 6/10

Overall score   threshold 21/30

During the Panel Meeting the scores of the proposals were calibrated and the final ranking was established in agreement of all the panelists, by simple-majority vote.

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[1]A third expert is involved if one evaluator marks the proposal above the thresholds (i.e., each provisional criterion mark is not less than 8 and the weighted sum of the four marks is not less than 8), while the other evaluator scores the proposal below threshold

2.   Analysis of the results of the remote evaluation

Upon closure of the call submission platform on October 9th, 2017 at 17:00 GMT+1, 35 proposals were submitted, out of which 9 proposals were not elegible and were not considered, neither for remote evaluation nor in the panel meeting.

A total of 26 proposals were evaluated by two or three independent evaluators during the remote stage of the process:

- 25 individual (remote) assessments of proposals were finished and reached consensus before the panel meeting

- 2 proposals needed a 3rd evaluator:

  - Proposal 133: consensus not reached
  - Proposal 135: consensus reached

The ranking of the admissible proposals for First Open Call for RobMoSys Contributions after the two stages of the remote evaluation is as follows:

Rank	Proposal ID	Crit. 1	Crit. 2	Crit. 3	Weighted Score	Total Score	Comment
1	242	9	10	9	9.35	28	
2	244	10	9	9	9.35	28	
3	182	9	9	9.5	9.15	27.5	
4	234	9	9	9.5	9.15	27.5	
5	235	9	8,5	8	8.525	25.5	
6	205	8	9	8	8.35	25	
7	216	8	8	8	8	24	
8	249	9	7	8	8	24	
9	225	8	7	7	7.3	22	
10	245	7	7	8	7.3	22	
11	247	7	7.5	7	7.175	21.5	
12	214	6.5	6.5	7.5	6.8	20.5	
13	177	8	6	6	6.65	20	
14	229	6	7	7	6.65	20	
15	168	6.5	7	6	6.525	19.5	
16	191	7	6	6	6.35	19	
17	201	5	5	6	5.3	16	
18	246	5.5	5	5	5.175	15.5	
19	133	5	5.333	4.667	5.017	15	
20	231	5.5	5	4	4.875	14.5	
21	204	6	3	4	4.35	13	
22	173	4	3	4	3.65	11	
23	230	3	4	3	3.35	10	
24	236	2.5	4	3	3.175	9.5	
25	135	3	3	3	3	9	
26	248	2	2	2	2	6	

Table 2: Ranking of proposals after the Remote Evaluation

3. Panel Meeting

3.1. Participants

Panel Experts

Arne Hamann	Robert Bosch GmbH
Thilo Zimmermann	Fraunhofer Institute for Manufacturing Engineering and Automation
Ivonna Brandic	Vienna University of Technology
Owen Holland	University of Sussex

Panel chair: Arne Hamann

RobMoSys

Marie-Luise Neitz
Veronica Medina Garciadiego
Firehiwoot Kedir
Christian Schlegel

3.2. Agenda

09:00	Welcome and introduction
09:10	Explanation of the agenda and the procedures
09:30	Agreement on scores and reports for all proposals
12:30	Lunch break
13:15	Prioritization of above-threshold proposals with tied scores
16:30	Approval of the panel minutes and the final list
17:00	End of the meeting

Table 3: Agenda of the Panel Meeting for First Open Call for RobMoSys Contributions

3.3. Objectives

- To Achieve agreed conclusion on evaluation of each proposal

- To finalise the evaluation reports of the proposals

- To rank the proposals above thresholds

- To prepare the evaluation report for the European Commission

3.4. Discussion of the Remote Evaluations

To ensure the consistency of comments and scores of the remote evaluation, the panel discussed the consensus reports of all proposals. For each proposal one of the panelist was responsible to summarize the goals as well as strength and weaknesses described in the remote evaluations. Afterwards, each panelist was asked to express his opinion on the proposal. In some cases this discussion lead to changes in the scores of the individual criterions. The panel agreed on all corrections on the consensus reports by simple majority consensus vote. Details about the individual changes are captures in the meeting minutes.

The finalized and approved consensus reports are attached in Annex 1.

During the meeting first the two proposals that required a 3rd evaluator (IDs 133 and 135) in the remote phase were discussed. Afterwards, the proposals were discussed in order, starting from the lowest weighted score (see table in Section 2).

4. Panel Meeting results

4.1. Final ranking

The final ranking of the above-treshold-proposals for First Open Call for RobMoSys Contributions is as follows:

Rank	ID	Crit. 1	Crit. 2	Crit. 3	Weighted Score	Score	Comment
1	234	9	10	10	9.65	29	
2	244	10	9.5	9	9.525	28.5	
3	242	9	10	9	9.35	28	
4	182	9	9	9.5	9.15	27.5	
5	205	8	10	8	8.7	26	
6	191	7	8	7	7.35	22	

Table 4: Final ranking

4.2. Proposals below threshold

The final list of the proposals below threshold is as follows:

ID	Crit. 1	Crit. 2	Crit. 3	Weighted Score	Score	Comment
92	0	0	0	0	0	Non admissible, pre proposal
96	0	0	0	0	0	Non admissible
100	0	0	0	0	0	Non admissible
102	0	0	0	0	0	Non admissible, pre proposal
133	5	5.333	4.667	5.017	15	
135	3	3	3	3	9	
168	6.5	7	6	6.525	19.5	
173	4	3	4	3.65	11	
177	8	6	6	6.7	20	
179	0	0	0	0	0	Non admissible
201	3	4	6	4.25	13	
204	6	3	4	4.35	13	
214	5	5	5	5	15	Add a recommendation to the 2nd call
216	7	6	7	6.65	20	
217	0	0	0	0	0	Non admissible, final submission 230
218	0	0	0	0	0	Non admissible, final submission 230
225	6	6	6	6	18	
229	0	0	0	0	0	OUT OF SCOPE
230	3	4	3	3.35	10	
231	5.5	5	4	4.875	14.5	
235	6	7	7	6.65	20	
236	2.5	4	3	3.175	9.5	
245	5.5	5.5	8	6.25	19	
246	5.5	5	5	5.175	15.5	
247	6	6.5	7	6.475	19.5	
248	2	2	2	2	6	
249	5	6	6	5.65	17	
250	0	0	0	0	0	Non admissible, duplicate of ID 247
251	0	0	0	0	0	Non admissible, test submission

Table 5: List of proposals bellow threshold

Please note that the order in **Table 5** does not reflect a ranking and is for statistical purposes only.

5. Approval of the Panel Report

The panelists agree on the final scores and ranking (4.1), and approve this report.
As Panel Chair, Arne Hamann signs.

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Arne Hamann

Annex: Evaluation Summary Reports

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 133 - Resource-conscious modeling for robotics

1. Expected impact	Weight: 35%
Proposed is RCM4R (resource-conscious modeling for robotics) which accelerate control architecture deployment, provide promised quality-of-service, and make robots more agile. The proposal cites the industrial environment case studies (crate moving, floor cleaning and patrolling). If RCM4R is successful in demonstrating such case studies, then there is strong potential for extending the RobMoSys ecosystem. Models and tools developed by academic partners will be open source. By contrast, the industry partner will retain IP and have non-disclosure rights for the software it generates. Also cited is publications when possible. The industrial case studies are interesting. However, details lack; it is not clear how performance will be measured and benchmarked against the current state-of-the-art. Open sourcing details also lack detail and the dissemination via publications is vague. The description of the possible impact is short and claims rather generic improvements and advantages. Overall the discussion is not very convincing.	Score: 5 / 10 *(Threshold: 6/10)*

2. Technical excellence	Weight: 35%
The proposed work is compliant with the RobMoSys call. The proposal provides some references. However, the current state-of-the-art and gaps in the knowledge domain were not fully articulated. There are doubts that the proposed approach is suitable for achieving the goals of the proposals to "cater for programming-by-contract from a resource perspective in robotics". The reason is that non-functional QoS properties are very complex to predict on model level, and it is very unlikely that there is a single formalism that is capable of capturing several of them. In fact the proposed formalism (constraint solving in Prolog CLP) seems to be to restricted to capture more than simple (additive or logical) QoS properties. The given examples highlight that by focusing on aspects covered by the "contracts" that do not really pose challenges during system integration (e.g. adding up energy consumption, checking whether the sensor frequency is sufficient, etc.). Real integration challenges are much more subtle and require much more detailed domain specific models. For instance, there is a large body of work in real-time systems for calculating response times and latencies along cause effect chains. It has been shown by that community that timing effects are not linear and even exhibit non-intuitive effects (so-called scheduling anomalies). Hence, reasoning about timing (a very important aspect in robotics) with the proposed models would not lead anywhere close to achieving the goals of the proposal for the resource "timing" or "computing power". For other resources and QoS parameters the argumentation is the same.	Score: 5,333 / 10 *(Threshold: 6/10)*

The proposal cites technology readiness levels (TRL) 5-6 level deliverables. However, the proposal does not articulate what is the current TRL and specifically, the technical gaps that are preventing an advance.

Key-performance indicators (KPI) are qualitatively cited. It is unclear how such KPIs will be quantitatively measured. Without threshold (minimally acceptable) and objective (desired levels) metrics, the KPIs come off as conjecture.

3. Implementation of the ITP	Weight: 30%
The implementation description is vague. The goal is to extend meta-models to enable "resource conscious modelling". Statements like "this concept will be extended to consider it as a composition of hardware components, going much farther than the CPU and the communication middleware, to which resource interfaces can be attached, thus reducing the conceptual gap between software and hardware artefacts from the resource perspective" do not really shed light on the concrete plans of the consortium. Before starting to implement a formalism for contract based design it must be thoroughly studied which properties can be faithfully described by the proposed model, and then it must be shown that the predicted properties on model level really correspond to the observed behaviour in the system. This is completely missing in the proposal. The team consists of experts from UPMC, SICS, and industry partner ER (Easymov Robotics). It is not clear from the proposal, the length and depth of past collaboration. There is no Gantt Chart per se. As such, it is not clear from the proposal itself, how the tasks feed into each other, and thus identify potential risks. There is a list of risks. However, it is not clear from the proposal if and how many review meetings will be held. It is not clear how knowledge will be shared to efficiently and effectively integrate outcomes. Plans to exchange team members for short periods (e.g. 1-2 weeks) were not given. While this is not a weakness per se, the lack of exchanges raises questions on knowledge exchange and co-development.	Score: 4,667 / 10 *(Threshold: 6/10)*
Remarks	
Weighted score:	*5,017*
OVERALL SCORE :	Score: 15 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 135 - Validation and Verification of Robotic Systems

1. Expected impact	Weight: 35%
The consortium proposes to study the link between the GenoM3 specification language and the RobMoSys meta-models and methodology through an industrial use case. The goal is to use this specification language to describe the behavior of software components. The plan is to cooperate with members of the RobMoSys consortium to find out how the proposed approach can be integrated with other behavioral specification languages within the RobMoSys framework. The main focus is to use the formal methods to compute worst-case traversal times of messages between two tasks in a robotic application taking into account the scheduling policy, the number of cores, task periods, and WCETs. The whole approach relies on the Fiacre formal specification language, which is based on state machines and timed petri nets (for expressing timing constraints). The consortium "wants to study" how the meta-models of GenoM and Fiacre can be used to express the behavior of components compared to other approaches in the RobMoSys ecosystem. Formal verification is an important asset in any engineering discipline. The overall approach, however, is very fuzzy and seems overly involved. It is not clear why all these different languages and model checkers are needed to (formally) check something that is so well understood as end-to-end latencies in distributed real-time systems. Moreover, the proposed approach does not fit the verification task at hand. The considered real-time system model is far too simple and cannot cover/predict reliably timing effects (it needs more than just the scheduling policy, cores, task periods, the WCET to reason about latencies). In fact, it is clear that with multi-core systems the WCET abstraction that worked for single core systems is broken due to complex micro-architecture and interconnect effects (e.g. caching) that have tremendous effects on execution times. There is a tremendous amount of work addressing these issues and many fundamental results exist that seem to be unknown to the consortium. Also, there are many (partly commercially available) tools that address exactly these questions: SymTA/S, MAST, UPAAL, etc. From my standpoint it would make much more sense to study existing (formal) models that are proven in use and that scale to hundreds of concurrent tasks/processes. This said: formal verification yes, but based on the right models and right techniques. That's not the case here.	Score: 3 / 10 *(Threshold: 6/10)*
2. Technical excellence	Weight: 35%

The description of the impact is generic and not convincing. The authors argue that the proposed work bring formal verification to the RobMoSys ecosystem. It is doubtful that many component providers would take the effort to create Fiacre models for their components, since the benefit for doing so (at least from the description in the proposal) seems low. The size of the potential user group is not specified, there are no measures to quantify impact. Accessibility of the results is only briefly mentioned.	Score: 3 / 10 *(Threshold: 6/10)*
3. Implementation of the ITP	**Weight: 30%**
Consortium is well planned and has complementing competencies, risk management is described but there are not means of verification. WPs deliverables are well planed However, the work plan is not compatible to the RobMoSys goals, since it does not propose the integration of a consolidated approach into the RobMoSys ecosystem but rather targets to "establish recommendations on meta models definition or implementation" based on the technical work around GenoM, Fiacre, etc. This is not enough. There must be a clearer picture and plan of how to contribute to RobMoSys. The risk of financing a disconnected "side show" with this proposal is very high. The KPIs are not adequate and do not measure the technical progress/achievements. All partners are from a single geographical area, so this ITP lack a true European dimension. On the other hand, co-location will facilitate more intensive collaboration.	Score: 3 / 10 *(Threshold: 6/10)*
Remarks	
Weighted score:	*3*
OVERALL SCORE :	Score: 9 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 168: Model Driven Data Fusion

1. Expected impact	Weight: 35%
The integration with RobMoSys is reliant on model transformation, rather than directly using the RobMoSys meta-models as the basis for the work. The reason for this is not explicitly stated in the proposal, but it seems that project member would rather like to reuse existing modeling tool chain based on AADL. It seems that this approach will rather limit the benefits to RobMoSys and its users. Modeling data fusion algorithms at such high level of detail as proposed would have a very limited benefit to the wider RobMoSys ecosystem. Only specialist in data fusion would be able to use the models. The proposed most important impact of the project is the way of providing the results to another existing projects, which minimizes contribution to the RobMoSys tool chain. Considering the proposed KPIs and TRLs it seems that the technology proposed is not at sufficient stage of development to be advantageous to the RobMoSys ecosystem. The accessibility do not explicitly address some of the common platforms (e.g., Eclipse).	Score: 6,5 / 10 *(Threshold: 6/10)*
2. Technical excellence	Weight: 35%
The proposal is very light on details about how the work will integrate with the RobMoSys meta-model. It is claimed that DFNs can map onto the bloc-port-connector concept, and this is likely to be true, as it is of many things since block-port-connector is very flexible abstractions. The proposal does not give sufficient detail about how this will be accomplished. The proposal is incoherent about the goals of the proposed project. At one point it talks about development data fusion systems using a model-based approach, at another it describes developing an AADL-specific implementation of the RobMoSys meta-model. The latter may be initial work needed to achieve the former, but it is not clear what benefit this will bring the RobMoSys ecosystem. The authors should better explain why this could not be achieved by just developing DFN model for the existing RobMoSys meta-model. It is not clear how DFNs will be modeled: as black-boxes, or with all the internal details. There is overall lack of clarity in what work is being proposed and the approach that will be taken. Many technologies are proposed, but it is unclear what is already there, and what will be developed within the project. The benefits to the RobMoSys ecosystem are also very unclear and what benefits can be seen appear to be offset by the complexity of the proposed	Score: 7/ 10 *(Threshold: 6/10)*

approach. The TRLs are quite low, assuming that the development process is in its very early stage to contribute seriously to the users of RobMoSys tools.	
3. Implementation of the ITP	**Weight: 30%**
The work is will structured, despite unclear goals. The core part of the proposal (modelling of the data fusion algorithm) is described at medium risk. However, it seems that it is not clear whether this proposed work is even possible. Model transformation between RobMoSys meta-model and AADL (another core part of the proposal) is rated as low risk. This seems to be incorrect, since model transformation between models without common history or pattern are often difficult to achieve without losing information. The key performance indicators are not very ambitious, although this may fit with the potential difficulty of other parts of the project. The small number of DFNs proposed to be produced is unlikely to give confidence that the tools developed are widely applicable. Although there are some details on the implementation missing the idea of the presented approach is good. The proposal is high-risk, yet not impossible. If the approach is successful there would be high reward.	Score: 6 / 10 *(Threshold: 6/10)*
Remarks	
Weighted Score:	*6,525*
OVERALL SCORE :	Score: 19,5 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 173 - Enabling Correctness-by-Design and Retargetable Models in RobMoSys through ASM-Based Models, Software, and Tools

1. Expected impact	Weight: 35%
The main objective of the ITP is an important one: to introduce support for both correctness-by-design and retargetable specifications in the RobMoSys ecosystem. If the objective were achieved, this would potentially have a positive impact on RobMoSys and on the community at large. This potential is reduced by three factors: there are doubts that the objectives can actually be achieved within the given time frame and budget; the targeted TRLs are too low to actually create the impact expected by the RobMoSys project; and even if the approach taken would eventually prove to be strong enough to fully encompass and enhance RobMoSys models, it is unclear how the take-up in the community would be made to happen. As a consequence, the expected impact of the proposal is low.	Score: 4 / 10 *(Threshold: 6/10)*

2. Technical excellence	Weight: 35%
The proposal pursues a very recommendable goal. However, there are serious doubts that the approach and the methods to be used are strong enough to capture all safety-relevant aspects, e.g., when it comes to realtime constraints, synchronization issues, or continuous domain aspects. The overall objectives appear to be too ambitious for the limited time and effort available. The discussion of the state of the art does not convince the reader that there are mature technologies that can be imported into RobMoSys to achieve the stated objective in their full generality. Instead, the proposal settles down on the much more focused goal to formalize RobMoSys components into CASM. While this is a goal that can be addressed within the scope of an ITP, it is not clear how well it will contribute to the achievement of the general objectives. The actual work that needs to be done and the methodology to do it is not entirely clear. For instance, it is stated that more work (on CASM) is needed to fully overcome "deficiencies 1-2", but it is unclear what is missing, what work is needed, and which part of it will be done in this ITP. On the positive side, the proposed KPI are good.	Score: 3 / 10 *(Threshold: 6/10)*

3. Implementation of the ITP	Weight: 30%
The workplan contains risks factors that leave doubts as to its producing the actual result. For instance, the analysis in task T2 should have been done in	Score: 4 / 10

the proposal preparation phase, and the corresponding decisions should have been taken then. Task T3 appears to be critical, but nothing is said about the contingency plan in case this one does not fully succeed.	*(Threshold: 6/10)*
In general, the implementation section fails to clearly describe HOW the objectives are to be achieved. The proposal often refers to the follow-up work to be done in response to the Open Call 2. It is unclear how important will be the results of this ITP by itself, should the follow-up not be funded.	
Remarks	
Weighted score:	*3,65*
OVERALL SCORE :	Score: 11 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 177 - Modelling Robotics Collaborative Assembly

1. Expected impact	Weight: 35%
The project holds potential to extend the "RobMoSys ecosystem coverage" by addressing explicitly the challenging topic of collaborative human-robot assembly operations. As a very positive aspect, the project focuses on a relevant use case, leading to a demonstration scenario in a HRC workcell. Given the objectives envisioned, however, the participation of a company with expertise in the area would have be welcome. Software and models will be made accessible under open access. The approach is high-risk, yet not impossible, and if it succeed it would have a high reward. The risk management is well explained.	Score: 8/ 10 *(Threshold: 6/10)*

2. Technical excellence	Weight: 35%
The project focuses on human-robot collaboration and will lead, if successful, to the integration of new models for collaborative human robot assembly tasks into the RobMoSys meta modelling "landscape". The objectives are definitely in line with the RobMoSys meta-models and general methodology. The presented approach it is not entirely compliant to RobMoSys metamodel. The assembly part of the proposal would be interesting for the second RobMoSys call. The second call would focus on system-level through application pilots using the RobMoSys ecosystem, and it would be useful to keep it into consideration for your future endeavors. The project has the potential to go beyond state of the art, in that model-driven engineering of robotic assembly lines is a subject that, so far, has not been the object of intensive research. In this respect, the proponents are well positioned to contribute quite positively to this challenging field by developing a "coherent meta-modeling framework" that will for the "description of assembly scenarios while providing reusability of components and incorporating HRC constraints" Having said the above, it is important to remark that it is not entirely clear what methodologies will be used in the project. Because the project builds on LightRocks, the authors should explain what is the state of the art considering LightRocks and what key contributions will be done within the project. Most of	Score: 6 / 10 *(Threshold: 6/10)*

the work consider extension of LiteRocks or incorporation of HRC assembly scenarios. It is left up to the reader to identify the true scientific novelty of the project. In addition, the authors state that utilization of LightRocks will be used to facilitate assembly creation in RobMoSys. It is not clear how is this done.

Within the scope of the project, the proponents aim to achieve TRL5. This level seems within reach, given that the precursor to their work, embodied in LightRocks, achieved TRL4.

The Key performance indicators are clearly delineated.

3. Implementation of the ITP	Weight: 30%
The work plan proposed is coherent, appropriate, and effective The consortium involves two key institutions with a core group of researchers / developers that have a well-proven track record in the areas that give support to the project. It is noticed that the two partners involved are academic. The project would have benefited from the inclusion of an industrial partner. The risk management and mitigation measures are not up to the standard of the other sections. For example, it is not stated what other types of exemplary use-cases will be evaluated during Task 3.1 in case the software and hardware components do not meet the requirements needed for the demonstrations set forth in the proposal. Given the lack of clarity for the technical excellence of the project it is doubtful that the implementation of the approach can be done in the described way.	Score: 6 / 10 *(Threshold: 6/10)*
Remarks	
Weighted score:	*6,7*
OVERALL SCORE :	Score: 20 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 182 - ComposAble Robot behaViors with vErification

1. Expected impact	Weight: 35%
The expected impact is clearly described by creating a "behaviour market" that will complement the "component market" envisaged in RobMoSys. The proposed technology can be applied to many robotics scenarios and will be verified by a selected (and convincing) set of real world scenarios. The proposal convincingly expresses to enlarge the user group of RobMoSys tools and methodology within the iCub community. Accessibility of results is given through github and presentations at the Winter School of Humanoid Robot Programming. All software will be release as Open Source. All deliverables will be made public. The proposed contributions to the achievements of RobMoSys goals have been very well explained with relations to clear objectives and Key Performance Indicators throughout the proposal.	Score: 9 / 10 *(Threshold: 6/10)*

2. Technical excellence	Weight: 35%
The scientific problems are clearly described through a set of easy to understand scenarios. The proposed methodologies are sound (behaviour trees, formal verification). The suggested scenarios can and will be evaluated in a lab environment. The proposal team is very experienced and excellent in its field. Compliance with RobMoSys models and meta-models are well indicated: The proposal takes up clearly core concepts of RobMoSys (modelling, composability, and tooling). Compliance to RobMoSys is addressed in Task T4.1. Overall, it has been very well explained that and how the proposal team plans to collaborate with the RobMoSys project partners. Technology Readiness Levels (TRLs) range between 5 and 6, and are reasonable explained. Ambitious Key Performance Indicators (KPIs) are presented in detail and means of verification discussed.	Score: 9 / 10 *(Threshold: 6/10)*

3. Implementation of the ITP	Weight: 30%
The team consists of three Italian partners (IIT, UNIGE and UTRC-ALES). The proposed efforts are high, but seem appropriate with 85% of total direct costs being personnel costs (60% to young researchers) and sufficient travel budget. The effectiveness appears to be very good. The proposal is very coherently written. The roles of the excellent partners and required expertise are very well described. The Risk Management is very well described with a lot of detail and including likelihood and an honest estimation of potential impact of risk. Bi-weekly conference calls with all involved partners seem appropriate.	Score: 9,5 / 10 *(Threshold: 6/10)*

Remarks

Weighted score:	*9,15*
OVERALL SCORE :	Score: 27,5 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 191 - Dealing with non-functional properties through global robot quality-of-service metrics

1. Expected impact	Weight: 35%
Strengths: + Framework to enable quality of service parameters has large potential user base + Semi-automatic monitoring and inspection is of great use + Open-source release of outcomes **Weaknesses:** - Types of national and international networks and members roles lacked detail - Names of conferences and target audience lacked detail	Score: 7 / 10 *(Threshold: 6/10)*
2. Technical excellence	**Weight: 35%**
Strengths: + Proposed work is compliant with the RobMoSys call + Quality of service focus addresses technical gap in robotics + Runtime checking is a flexible approach and good starting point **Weaknesses:** - Ambition of the proposed project is not very high - Not clear why probabilistic approaches are needed - Lacks design requirements and performance metrics - Testing-and-evaluation and verification-and-validation plans lacking - KPI target metrics were not clearly articulated	Score: 8 / 10 *(Threshold: 6/10)*
3. Implementation of the ITP	**Weight: 30%**
Strengths: + Team has a strong track record and collaboration history + Credible Gantt chart and deliverables in proposed time line **Weaknesses:** - 3 review meetings lacked details and goals - Frequent communication to mitigate risk came off as conjecture	Score: 7 / 10 *(Threshold: 6/10)*

Remarks	
OVERALL SCORE :	*Weighted score 7,35/10*
	Score: 22 / 30
	(Threshold 21/30)

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 201 - Improving SLAM navigation using advanced RFID system and trajectory prediction

1. Expected impact	Weight: 35%
The proponents argue very convincingly for the need to develop a new breed of robots capable of providing advanced cognitive and physical assistance to elders and their caregivers. The proposal could have a strong impact on other related activities of the proposers such as their KIARA project. The rationale is clear and rooted in the analysis of current and future trends. In the proposal, however, the proposers narrow down the scope of the planned R&D work by focusing it on the issue of robot navigation. The envisioned impact of the work is therefore considerably reduced and does not seem to add substantially to the "RobMoSys ecosystem coverage". In respect of this, there is also for example the statement in Section 5 that "all the software developed will be shared in open-source as any ROS based-module", thus adding weight to the perception that the project is quite restricted in its scope and is not covering the expected extension of the RobMoSys ecosystem coverage. In addition, the validation scenarios are not adequately detailed.	Score: 2/ 10 *(Threshold: 6/10)*
,2. Technical excellence	Weight: 35%
The main envisioned focus of the project is the enhancement of currently existing mobile robot navigation systems by using a combination of two subsystems: i) a RFID-based triangulation unit capable of yielding accurate positioning of the robot (position fixes) at discrete instants of time, and ii) a trajectory prediction unit capable of predicting the motion of the robot in between position fixes by fusing proprioceptive motion data coming from a number of complementary sensor suites. The proposed solution and its innovation are not described well enough. Algorithms that fuse different types of motion-related data in an intertwined prediction/correction cycle are by now classical and are rooted in solid theoretical developments that borrow from estimation theory. Furthermore, putting together a component of a robot navigation system that will give a "good" estimate of the trajectory of the robot over a time horizon ranging from 600-800 msec (one of the goals set forth in the proposal) is certainly within reach with current technology. Additionally, the types of robots in question move relatively slowly. In view of the above, it is debatable whether the approach proposed for trajectory prediction, involving learning and the training of artificial neural networks, will bring any added value. In this respect, the proposal is rather vague and fails to identify the improvement (if any) of using learning	Score: 4 / 10 *(Threshold: 6/10)*

algorithms instead of more classical algorithms that have definitely withstood the transition from the lab to the real world.

The description of the key performance indicators is quite short and vague, with no metrics. According to the risk management section, the role of the RobMoSys partners would be to reduce the risk of a poor ecosystems analysis. Additionally, the role and benefit of the proposed work for the RobMoSys ecosystem and its platform ambition is not well addressed.

It remains unclear how compliant the systems to be developed will be with the RobMoSys meta-models and methodology.

3. Implementation of the ITP	Weight: 30%
The work plan is well structured and coherently described. It defines 5 work packages and 3 milestones. The work packages have defined objectives and define 13 tasks describing the work to be executed. The list of milestones is not excessive but sufficient given the short time frame. The allocated personnel efforts of 32 plus 15 person months and the requested budget appear high but appropriate. There is no comprehensive description of the key personnel to be involved in the project. However, the two companies involved have a good track record in areas of interest to the project. The core concepts of RobMoSys occur rarely in the proposal. The central points for this call, such as modelling, composability, separation of concerns, tooling etc., along with the proposal's relevance to the platform ambition of Call 1, are not adequately explained. The project as described is rather isolated from the RobMoSys project, and the expected interaction within RobMoSys projects and with RobMoSys project partners is not covered well enough.	Score: 6 / 10 *(Threshold: 6/10)*
Remarks	
Weighted score:	*3,9*
OVERALL SCORE :	Score: 12 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 204 - Development of safety models and modelling toolchain for an easy and unified configuration of safety architecture of robotic applications

1. Expected impact	Weight: 35%
Simplifying the procedure to get a robotic system into safe operation after reconfiguration has potentially a high impact and would provide an important asset for the RobMoSys ecosystem. The discussion of the impact is well structured into short, mid and long-term improvements. Obviously, there is a short-term advantage concerning systematic documentation (safety functions and principles are arranged, listed and made usable through a unified tool). However, the chance of success for achieving the mid and long term improvements (significantly reducing configuration time and engineering costs, or even applying real-time safety reasoning for online production optimization) is low (see discussions under Excellence).	Score: 6 / 10 *(Threshold: 6/10)*
2. Technical excellence	**Weight: 35%**
The proposal is well motivated highlighting the shortcomings of current safety engineering practices in complex robotic production setups. The goal to assist the safety engineer with model-based techniques, especially in safety argumentation for reconfigurable systems is valid. The main idea is to 1) extend component models to capture safety capabilities (used or provided safety services), 2) introduce a simple risk/hazard meta-model (with simple preconditions for occurrence), and 3) safety principles that "counter" hazards, 4) including a mapping between hazards and safety principles. The project has very ambitious goals, which may be hard to achieve in the limited time frame and the given approach. Of course, based on the mentioned models one can reason about which safety functions are needed in the presence of which possible hazards, but only in a very straightforward and simplistic way. A motivating example giving an intuition that the approach is powerful enough to uncover hard-to-detect safety dependencies and flaws is completely missing. Moreover, the descriptions of the state of the art and of the background technology do not sufficiently clarify in what ways this project will go beyond the state of the art. Especially tor the safety configurator the proposal does not clarify what technology will be used to discover components and to generate coordination programs, both of which may be difficult problems whose solution requires more than the limited effort of this ITP. RobMoSys insists on the necessity to use relevant use-cases and real-world scenarios to guide development and to evaluate and demonstrate results. This proposal does not include a concrete real-world scenario. A demonstrator is mentioned in WP4, but it is not clear how this is connected to the work done in the development work packages WP1, WP2 and WP3. The proposal seems to suggest that the "intelligent" part (safety reasoner and safety configurator?)	Score: 3 / 10 *(Threshold: 6/10)*

will be only briefly explored in (Task 4.3) and its development in a follow-up project, funded through the second RobMoSys call or other opportunities. This strategy has its risks: what if there is no follow-up funding? Moreover, developing the models and representations before developing the reasoning tools that use them may lead to a sub-optimal design and to dead ends.	
3. Implementation of the ITP	**Weight: 30%**
The consortium seems to be well qualified to conduct the proposed work and has a successful history of previous collaborations. The risk management is adequate. The work plan is generally sound and the organization of work is well thought, but it appears to be too ambitious. The work in WP3 in particular, and especially in Tasks 3.2 and 3.3, is very intensive and it does not seem realistic to perform it in few months. The major flaw of the proposal is that it is to a very large extend only pure meta-model and tooling work. There is no substantial demonstration based on a real-world scenario planned (less than 1 PM). This is not acceptable in the RobMoSys context where real-world demonstration is a first class citizen.	Score: 4 / 10 *(Threshold: 6/10)*
Remarks	
Weighted score:	*4,35*
OVERALL SCORE :	Score: 13/ 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 205 - Architecture and Components for Reliable Control over Networks, using Intrinsic Passivity Control

1. Expected impact	Weight: 35%
The impact is well described. IPC in general and EG-IPC is well suited for being standardized in RobMoSys meta-models. This means the project can deliver a unified software framework that gives access to EG-IPC technology independent of specific underlying implementation technologies (communication & computation). Since EG-IPC (when applicable) leads to intrinsically safe and stable operating system the expected impact is high. On the other hand, it is not clear how many different potential users will benefit from the approach. That should have been clearer.	Score: 8 / 10 *(Threshold: 6/10)*
2. Technical excellence	**Weight: 35%**
The proposal very nicely motivates IPC and its usefulness for robotic use cases. Since IPC works on standardized interfaces it makes sense to integrate it into component-based modeling approaches like RobMoSys. Furthermore, the authors very clearly explain why implementation (through discretization) and network delays lead to the loss of passivity and thus also loss of the intrinsically guaranteed stability. The reason is, in simple words, the presence of excess energy. By adding "energy guards" at all components and communication lines in the system, it is possible to dissipate this excess energy to reobtain the stability guarantees of IPC. This is exactly the idea of the proposal to realize such "Energy guarded IPC". Overall, the proposal is excellent. It addresses the gap between function/control design and software component implementation for IPC systems. The proposed work is based on well-known techniques that are made available with a high TRL to a larger community.	Score: 10 / 10 *(Threshold: 6/10)*
3. Implementation of the ITP	**Weight: 30%**
The consortium is well qualified to conduct the proposed work. Risks are identified and mitigation measures defined. The efforts are adequate. KPIs are described but not convincing and there are no means of validation. The work plan is simple and effective and explicitly includes relevant demonstrators showing the advantages of the EG-IPC approach, which is exemplary.	Score: 8 / 10 *(Threshold: 6/10)*
Remarks	
Weighted score:	*8,7*
OVERALL SCORE :	Score: 26 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal 214 - Navigational Development Techniques for robotics domain

1. Expected impact	Weight: 35%
The proposed work is likely to have a small but well-focused impact, as they are planning on dealing solely with non-functional properties of components during system integration. Having a model-based methodology is useful for directly recording development efforts and tracking development work, which in turn is known to be a benefit to quality control and safety of systems. A significant drawback to the proposal's expected impact is that it is a separate methodology model from RobMoSys and model transforms will be required to integrate it with the existing RobMoSys meta-models. The proposal gives an additional expected impact in the form of an evaluation of the validity of the RobMoSys approach. This is of value in that it could determine if RobMoSys is actually useful, but it is also not directly of value, as it will not necessarily improve the lives of users of the RobMoSys ecosystem without follow-up work. As a demonstration scenario, the proposed project aims to illustrate efficacy of the systems developed using MACCO, "the first robot developed by Macco Robotics, ready to perform the functions of a waiter". It is questionable if by focusing on such a mundane case the proponents would be addressing a large number of potential user groups or contributing to the extension of the RobMoSys ecosystem coverage, as required in this call. Furthermore, application test cases are expected to be done in the second call.	Score: 5 / 10 *(Threshold: 6/10)*
2. Technical excellence	**Weight: 35%**
The proposers intend to use their pre-existing meta-model and tool chain, NDT, for the project. With NDT already in use with commercial partners of one of the companies involved in the proposal, it is likely that NDT is already of a high technical quality and TRL. However, the proposal is written in very broad terms, making it difficult to assess the level of excellence with respect to the state of the art in the field. The relation to RobMoSys is only briefly touched on. There is a brief mention of developing a model transform to SmartSoft, but apart from this it is unclear how well the project will integrate with the existing RobMoSys meta-models and methodology. In particular, the NDT work already includes its own methodology and it is likely that this will be different from the methodology in RobMoSys.	Score: 5 / 10 *(Threshold: 6/10)*
3. Implementation of the ITP	**Weight: 30%**

The consortium partners are appropriate for the goals of the project, being one expert in the NDT methodology and development process modelling, and one expert in robotics. They have demonstrated the necessary expertise in model-based development to be able to achieve their stated project goals. The work has been divided appropriately amongst the partners. The list of key performance indicators is quite complete and focused on the topics of quality, cost, effort and risk related to the adoption of the NDT4Robotics solution. However, there do not appear to be any KPIs allowing for the assessment of the efficacy of the solution, and the KPIs related to RobMoSys are a bit too nebulous. Given the proposed demonstration on a real robot, these are unfortunate gaps.	Score: 5 / 10 *(Threshold: 6/10)*

Remarks
It is recommended to keep it into consideration for your future endeavours that the Second Open Call for RobMoSys will focus on system-level through application pilots using the RobMoSys ecosystem.

Weighted score:	*5*

OVERALL SCORE :	Score: 15 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 216 - RobMo4Rehab

1. Expected impact	Weight: 35%
The impact of this proposal is expected to be quite high. The target domain of rehabilitation robotics is a viable, sizeable, and growing market. Developers and system integrators for this market would greatly benefit from using a model-driven engineering approach, especially if a library of models, meta-models, and an associated tool chain exist. The proposal targets to achieve exactly that by adopting the RobMoSys approach and extending it with domain-specific models, meta-models, associated implementation, and enhancements of the toolchain where necessary. The proposal also includes ambitious, but well-defined measures to disseminate the approach and to maximize the chances for take-up in the relevant community, e.g. by adopting an open source licensing strategy. Successful demonstration that the RobMoSys approach works in such a domain could pave the way for other domains to adopt RobMoSys as well.	Score: 7 / 10 *(Threshold: 6/10)*
2. Technical excellence	**Weight: 35%**
The technical excellence of this proposal is good. It is based on the decision to fully adopt the RobMoSys approach (instead of trying to marry it with some other pre-existing concepts or technology) and the focus on a particular, sufficiently narrow domain with clearly specified, achievable goals. It remains however somewhat unclear why the particular domain of Rehabilitation Robotics really needs specific new meta-models. The proposal lists 8 detailed project objectives (O1 – O8) and sets these into relevance of the RobMoSys Ecosystem tiers. A full-page long list of key performance indicators (KPIs) has been well described and discussed.	Score: 6 / 10 *(Threshold: 6/10)*
3. Implementation of the ITP	**Weight: 30%**
The work plan is well structured and coherently described. It defines eight tasks and five milestones. The tasks have well-defined objectives and define subtasks describing the work to be executed. The list of milestones is impressive given the short time frame available, but the means of verification are only weakly described. The project has an ambitious publication plan. The consortium is well composed and seem to have the required competences. The allocated personnel effort and the requested budget appear high but appropriate.	Score: 7 / 10 *(Threshold: 6/10)*

The risk assessment and mitigation strategies are sufficiently listed. Ethical issues have been well explained and convincingly answered.	
Remarks	
Weighted score:	*6,65*
OVERALL SCORE :	Score: 20 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 225 - Intelligent Home Assistant Robot

1. Expected impact	Weight: 35%
The objective of the proposed project is to integrate cognitive capabilities in the RobMoSys ecosystem. If this objective could be fully achieved the project would have a strong impact. While this is unlikely to happen, contributing models to RobMoSys at least for a subset of the targeted functionalities could already present a valuable contribution that may help RobMoSys to succeed. The proposal points to such a limited set of functionalities, which provides focus to the project. The presence in the consortium of different categories of developers improves the chances that the impact will be achieved.	Score: 6/ 10 *(Threshold: 6/ 10)*

2. Technical excellence	Weight: 35%
The proposal adequately follows the models, the methodology and the spirit of RobMoSys. It promises to develop models for a wide range of cognitive capabilities needed for building advanced assistive robots for domestic environments, but then strongly limits the type of capabilities that will be considered. This is consistent with the expectations for an ITP, to propose a focused goal with important ramifications. Despite the restrictions, though, it is still unclear to what extent the objectives can realistically be achieved within the limited time and effort available. The plan to include multiple target platforms as demonstrators does not help the credibility of the proposal. The proposal mentions in several places "cognitive systems capabilities" or "cognitive architectures" without providing any detail on which cognitive systems concepts are to be employed. A number of important questions are left open: What techniques will be used for modeling cognitive components? What conceptual basis can be used for the formalization of the parameters and the assumptions of components? What formal models will be used to represent action dependencies or temporal constraints?	Score: 6 / 10 *(Threshold: 6/ 10)*

3. Implementation of the ITP	Weight: 30%
The implementation is simple, which is adequate to this type of project. The task descriptions describe the objectives and list in detail the deliverables and what they will contain. However, they are not sufficiently clear on HOW the objectives are to be achieved. The first task should have been done as part of the proposal preparation; elaborating and detailing the use case bears a significant risk of getting lost in detail, with a missed delivery date and a delay of successive work being the consequences. The consortium has all the required competences to carry out	Score: 6 / 10 *(Threshold: 6/ 10)*

this project, and it features a good complementarity. The proposal does not include any risk assessment with mitigation measures.

Remarks
It is recommended to keep into consideration for your future endeavours that the Second Open Call for RobMoSys will focus on system-level through application pilots using the RobMoSys ecosystem.

Weighted score:	*6*

OVERALL SCORE :	Score: 18 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 229 - A Unified Human-Robot Collaboration Software Framework for Human Ergonomics and Robot Safety

1. Expected impact	Weight: 35%
The proposal addresses an important problem for industrial and service robots that collaborate with humans: how to take ergonomic factors into account in order to minimize negative effects on the human workers. Solving this problem will have an important impact for robot developers in that segment. In the longer term, it may also have an important impact for developers of social, personal and assistive robots. There are concerns regarding the impact of the project, in spite of the more positive aspects examined in the section on Excellence. The project is put together as a self-contained effort, restricted to its own boundaries, outside RobMoSys. For this reason, key concepts inherent to RobMoSys such as modelling, composability, separation of concerns, tooling etc. and its relevance to the platform ambition of Call 1 do not emerge clearly. There is little, if no interaction with the RobMoSys projects and with RobMoSys project partners. Summing up: the proposal is less clear on the specific impact on the RobMoSys ecosystem. The fact that the problem and approach are not presented with reference to the RobMoSys methods and models makes this impact difficult to assess. It is positive to see that most of the outcomes of the project will be published under open source licenses.	Score: 0/ 10 *(Threshold: 6/10)*
2. Technical excellence	**Weight: 35%**
The project aims to develop and to fully demonstrate the efficacy of a "unified human-robot collaboration software framework for human ergonomics and robot safety". The proposal is well written and organized and details the key R&D steps involved in the different phases of the workplan. The proponents show that they have a very clear understanding of the issues addressed and do a good job of explaining how the work planned will advance the state of the art. This explained clearly and convincingly. The proposed approaches to address the two topics of ergonomic HRC and of manage robot fatigue are well explained and convincing. Where the proposal is less convincing is on the added value of dealing with those two topics jointly in the same project. Surely there are complex inter-dependencies, e.g., some motions may facilitate interaction for the human but increase fatigue for the robot, but it does not appear that these inter-dependencies will be analyze to a significant extent. In fact, a sound treatment of these issues would likely require an effort that goes well beyond the scope of an ITP.	Score: 0 / 10 *(Threshold: 6/10)*

The proposers clearly have the know-how and the technologies needed to carry out this project. However, the claimed step from TRL3 to TRL5/6 may be overly optimistic for a one-year project.

The list of key performance indicators is quite complete and the metrics proposed are verifiable.

As mentioned in the Expected Impact section, the problem, methodology and work plan are mostly described independently from RobMoSys. It is not entirely clear if, and how, the proposed software framework can become part of the RobMoSys ecosystem.

3. Implementation of the ITP	Weight: 30%
The project brings to the core of the proposed R&D effort a team of two highly reputed institutions (IIT and LIRMM), with a proven track record in areas that give support to the envisioned developments. The work plan is generally sound. In what concerns the evaluation of the Ergo-Frame framework through realistic demonstrators, the Human-Manipulator experiments will be carried out in collaboration with one of their industrial partners. The proponents indicate a number of them, all with recognized competences, but one or more letters of intention/support would have been welcome. The description of the integration in WP3 lacks detail, and it is unclear if and how the inter-dependencies between HEM and RFM will be addressed. The analysis of the risks is not fully consistent with proposed work plan, and it appears to refer to a proposal with "slightly different" objectives. An indicative budget is not provided.	Score: 0 / 10 (Threshold: 6/10)
Remarks	
This proposal is out of scope. It is a good project and well written but unrelated to RobMoSys.	
Weighted score:	*0*
OVERALL SCORE :	Score: 0 / 30 (Threshold 21/30)

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 230 - Composable Models and Software for Robotics Systems

1. Expected impact	Weight: 35%
According to the proponents, the envisioned goal of the proposal is "to align FIONA (Adele Robots) and its underlying meta-models with RobMoSys structures and use this tool to create a motion stack model of a robot arm to be validated in the context of a use case in the aerospace industry". The aerospace industry use case revolves around the application of a collaborative robot arm, the performance of which is illustrated via a video produced by one of the partners. Thus, the proposal addresses a large number of potential user groups and holds potential for an extension of the RobMoSys ecosystem coverage. However, aside from this eye-catching video, the proposal is very vague in what concerns a clear definition of the R&D work to be done and the actual demonstration scenario. Given that, the proposal is unlikely to actually achieve the objectives in the given time frame and budget. In addition, impact section is more of a summary of the impact expected by the RobMoSys project than a description of the impact to be expected by this proposal directly. The proposal does also little to describe HOW the expected impact is to be achieved, i.e. what measures the partners will take to ensure the impact will happen. Therefore, the actual expected impact is low.	Score: 3 / 10 *(Threshold: 6/10)*
2. Technical excellence	**Weight: 35%**
The proposal suggests adopting the FIONA technology developed for developing virtual reality avatars for RobMoSys and modeling all of the RobMoSys concepts in FIONA. This endeavour must be judged as being very risky, as it is highly likely that RobMoSys concepts, methods and tools will exhibit properties and issues, such as realtime constraints, tight synchronization between two or more activities or motor controls, etc., that cannot by transformed or reflected easily into the rather simplistic FIONA models. The proposal already admits that e.g. the "validation of conformity" would not be performed components representing physical devices such as motors. Another part where the proposal remains very vague throughout is the "knowledge model", for which there is neither a recognizable approach of how to tackle it nor clear objectives or even measurable progress indicators. The list of key performance indicators includes only a few lines that amount to the specification of the number of metamodels supported, an assessment of the expected performance of the validation of conformity service, expected to reach 90% (this is a rather cryptic statement) and the max number of DOF of the robot arm model to be tested. The key performance indicators provided are not appropriate to assess the performance of the proposed project.	Score: 4 / 10 *(Threshold: 6/10)*

3. Implementation of the ITP	Weight: 30%
The work plan description is very weak and consist mainly of work package titles and a brief, mostly vague description of objectives. Work package descriptions list tasks, but there no further detail on the work to be executed for each task. The proposal fails to provide a comprehensive plan for how to achieve the objectives. The description of risks and their mitigation measures is very weak and incomplete, they amount essentially to reporting the reasons for not complying with the objectives and seeking support from the RobMoSys consortium partners. The consortium consists of two companies with complementary expertise: ADELE ROBOTICS, specializing in social robotics and artificial intelligence, and CANONICAL ROBOTS, a newly created start-up aiming to manufacture collaborative robot arms. The latter´s team seems to have in depth know-how of industrial robotics with applications in the aerospace industry.	Score: 3 / 10 *(Threshold: 6/10)*
Remarks	
Weighted score:	*3,35*
OVERALL SCORE :	Score: 10 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 231 - IMplementation of COmposable Models for Embedded controllers

1. Expected impact	Weight: 35%
The scope of this ITP covers motor control for service robots in the motion domain, and so the size of the potential user group, which could include a wider range of robots than service robots, will in principle be very large. The vision is of a global solution to the process of creating complex embedded systems in the domain, replacing the current partial tool sets. (However, there is an acknowledgment that for example Papyrus4Robotics can in some use cases provide an end-to-end solution.) Although the broad form of the proposal is compatible with RobMoSys (it states that its objectives are 'fully aligned within the RobMoSys concept and ecosystem'), specific connections with RobMoSys are weak - for example, noting that 'the RobMoSys tooling baseline options, like SmartSoft or Papyrus4Robotics, will be evaluated for the development of this tool' does not express a clear commitment. There is no reference to the value of RobMoSys in increasing the reach and impact of the proposal, and no planned contact with RobMoSys partners. The models and tools 'are intended to be released under some Open Source licence' but the IP developed during the project will be retained by the partners. There are references to a repository (possibly more than one) but no details are given of site or access.	Score: 5,5 / 10 *(Threshold: 6/10)*

2. Technical excellence	Weight: 35%
The proposal as written has the weakness that, although it outlines what will be done, it often lacks important detail. For example, there are references to 'a specific meta-model' but there is no further information about the meta-model. Again, there is mention of a composition tool (or composer) to 'create basic models and composite models, the (latter) by means of composition using the models repository available' but no information is provided about how this will be done, or how the tool will comply with the RobMoSys requirements or recommendations. The state of the art is not clearly articulated, although the general idea of a global system would clearly go beyond it, and there is insufficient information to allow either the excellence or the quality of the proposed work to be assessed. An additional factor is that parts of what is proposed will consist of the modification of previous software (RoboCAN) - 'Some part of this previous implementations could be reused but the overall structure must be adapted to conform to a specific meta-model' - but there are no indications of the nature or quality of what will be inherited, or of how the structure will have to be adapted. The targeted TRL is TRL7, but no details are given of the circumstances of the validation trials. However, at the level of motion control in the chosen robot testbeds, there is likely to be little material difference between TRL4-TRL7. The seven suggested KPIs offer good coverage of the project, but only four have targets.	Score: 5 / 10 *(Threshold: 6/10)*

3. Implementation of the ITP	Weight: 30%
The description of the implementation is generally adequate in outline. The division into workpackages, their sequencing, the allocations of effort, and the timings of the deliverables and milestones are all reasonable and appropriate, but some of the workpackages - particularly Task 6 - lack essential detail. The consortium is adequate in terms of skills, roles, and experience, and there is a history of collaboration, but the robots to be used for validation do not in themselves offer any real challenges for motion control, which weakens the proposal. Although there is certainly some technical risk in the planned project, there is recognition of this, and no plan for risk management.	Score: 4 / 10 *(Threshold: 6/10)*
Remarks	
Weighted score:	*4,875*
OVERALL SCORE :	Score: 14,5 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 234 - Models and tools for standardized and composable benchmarks

1. Expected impact	Weight: 35%
This proposal adds the benchmarking dimension to RobMoSys, through the creation of the Benchmark Meta-model and its integration into the Ecosystem. The importance of benchmarking in robotics is being increasingly recognized, so the impact of this addition to RobMoSys will be high and it will concern a potentially large user group across a wide range of the robotics community. The introduction of benchmarking will also result in the potential introduction of the new role of the Benchmark Provider. The proponents have already identified two benchmarks and two components to be used in their development, which maximizes the likelihood of this project being successful and bringing about its impact. The IPR strategy is very good, and the use of compatible tools will help in making the results applicable within RobMoSys. In particular, the choice of Eclipse plugins and the use of the SmartMDSD Toolchain will deliver accessibility. The proposal only plans to deliver the technology on a small set of benchmarks and components, and so the full impact of the broader concept may not be realized within this proposal, but should be taken into account. Provisions to use other components within RobMoSys are implemented in a task. This task would benefit from being allocated a larger effort. The push towards Europe-wide robot benchmarking competitions will offer a showcase for the Plug & Bench outputs, and therefore also for RobMoSys.	Score: 9 / 10 *(Threshold: 6/10)*
2. Technical excellence	**Weight: 35%**
The proposal fully complies with the RobMoSys meta-models and methodology, and in fact much of the work will go into integrating the Benchmark Meta-model into the current Ecosystem. The proposal is also perfectly aligned with the Call, and it concerns a focused topic that can be successfully addressed within the limited size of a ITP. The concept is novel, of very high quality, and is exceptionally well thought out and clearly described. Where choices have been made, as with the possible methods of benchmarking whole robot systems, the alternatives are stated and the reasons for the choice made are presented. As the state of the art in the field has been defined by a series of EU projects involving a key member of the consortium, Plug & Bench demonstrates a high degree of technical excellence in planning further progress, with some work being at the research frontier. The proposers seem to see performance metrics	Score: 9 / 10 *(Threshold: 6/10)*

as independent from the context: they are interested in the answer to the question "how good?". It would be interesting to also model the assumptions needed by the component, and answer the "how good?" question relatively to a given set of assumptions.

The definition and use of KPI are exemplary.

3. Implementation of the ITP	Weight: 30%
The workplan of the proposal is coherent, appropriate, and exceptionally clear, with adequate detail and allocation of effort. It clearly follows from the objectives, it is realistic, and it takes into account the connection with RobMoSys. It is likely to be highly effective.	
The consortium is of the highest quality in relation to the planned work, with POLIMI having extensive experience of the problem area, and IPA possessing unrivalled experience and knowledge of technology transfer and industrial exploitation.	
The absence of developers or system integrators is compensated by the presence of an explicit task to manage collaboration with, among others, developers and system integrators within RobMoSys. This task could be strengthened, and include training sessions to help RobMoSys partners to use the benchmarks.	Score: 9,5 / 10 *(Threshold: 6/10)*
There is uncertainty around the issue of benchmarking whole systems where functionalities interact, but the thoughtful risk management plan argues that even if all three identified methods for dealing with the composability of benchmarks turn out to be infeasible, the technology for producing a single benchmark on its own within the context of RobMoSys will still be valuable enough to justify the expenses of the project.	
The consortium has identified a clear and credible path toward a possible follow-up in the second Call to address this issue.	
Remarks	
Weighted score:	*9,15*
OVERALL SCORE :	Score:27,5 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 235 - R4A to RobMoSys

1. Expected impact	Weight: 35%
The proposed R4A2RMS project builds upon an existing architecture and toolset called Robotics 4 All (R4A). R4A is a realization of robotics and automated software engineering and evolved from the EC FP7 RAPP project (2013-2016). According to the proposers, R42RMS serves to adapt R4A models and tools into the RobMoSys ecosystem. By building upon popular approaches (e.g. ROS), there could be a large potential user group (as for all ROS based projects). However, it remains rather unclear why this approach should be desirable for the RobMoSys ecosystem. Moreover, the approach would expose robots as IOT (Internet of Things) entities. As such, R4A2RMS could extend the RobMoSys ecosystem. Again, it remains rather unclear what benefits and achievements would result from this. The team has a track record and the expertise to execute the proposed work. The team consists of R4A group with expertise that includes robot-agnostic architecture, model-driven engineering, and middleware. The proposal cites releasing outcomes under an open source license (ALv2), open data repositories (e.g. GitHub) and scientific journals and conferences (open access). The quoted figures from IFR are rather generic for robotics in general and the linkage to the proposal should have been made clearer.	Score: 6 / 10 *(Threshold: 6/10)*
2. Technical excellence	Weight: 35%
The proposed work seems to be compliant with the RobMoSys call. R4A2RMS' concept builds upon the R4A core agents (low and high levels, memory and server). The proposal cites the state-of-the-art model-based or middleware tools to develop robot software. The intellectual merit stems from building upon this software (e.g. ROS) rather than replace them. A 12-month realization of this concept was given with Work Packages (WP) as: WP1: Modeling and Storage of 3rd party components; WP2: Adaptation of R4A models of components and tools to RobMoSys; WP3: Adaptation of R4A model/tool of system composition and Pilot Cases; WP4: Project Management The proposal cites current technology readiness levels with goals to reach TRL 6 and 7. Given the fact that their status is estimated to be TRL 4 and 5 respectively, this seems to be very ambitious if not even unrealistic in a 12-months timespan.	Score: 7 / 10 *(Threshold: 6/10)*

The proposed effort appears viable given the team's track record and detailed work packages. The team has identified resources (e.g. NAO and Turtlebot robots) for testing deliverables. A comprehensive list of key performance indicators (KPI) were given. However, how these numbers were targeted was not clearly articulated. It is unclear how ambitious such target numbers are. They do appear reasonable for the short project's timeline.	
3. Implementation of the ITP	**Weight: 30%**
The team consists of several colleagues at AUTH , who worked on the original R4A project, with 1FTE on junior and senior PhD-student level as well as 0.5 FTE on post-doc and professor level. The team has a history of collaboration. A 12-month Gantt Chart and list of deliverables were given. It is not clear from the proposal if and how many review meetings will be held (e.g. preliminary design review, critical design review and design freeze) and when they will occur in the timeline. However, since members are at the same institution, team communication and coordination will unlikely be a problem. The risk management for all four Work Packages is good, but could have been elaborated in more detail (e.g. including metrics on potential impact, likelihood before and after mitigation, etc.). Some risk analysis reads very generic (esp. on WP4). The proposal does not mention entities beyond those at AUTH. This is not a shortcoming per se. Rather; it raises questions of accountability and unbiased assessment of the team's efforts and outcomes.	Score: 7 / 10 *(Threshold: 6/10)*
Remarks	
Weighted score:	*6,65*
OVERALL SCORE :	Score: 20 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 236 - Ontology Translator and Co-Designer for RobMoSys

1. Expected impact	Weight: 35%
Even if successful, project will have very little impact within or outside the RobMoSys community. Use cases are not described in an appropriate way and not convincing. The size of the user groups is not explained appropriately. The idea of using it to expand the RobMoSys community to "non-experts" cannot be taken seriously. Also the expectation that its use "in the education of future professionals of the sector would be a key movement to set a standard for robot interoperability" is unrealistic.	Score: 2,5 / 10 *(Threshold: 6/10)*

2. Technical excellence	Weight: 35%
The description of technical and conceptual aspects is uneven and of poor quality. The reuse of existing components like botBloq and ADROnS is not clear, and it is not clear why it would be beneficial for RobMoSys. The difficulties of some of the tasks are clearly underestimated as for example the proposed technical solutions for natural language processing by extracting the main requirements for a user to design a robot and by feeding the ADROnS systems with those obtained tasks. Based on that set of components which are required for the robot to perform the asked tasks would realistically only be possible within an even more constrained linguistic and functional domain than envisaged, but this would remove any interest from the proposal. Although, the starting point will be the RobMoSys metamodels, there is no guarantee that they will be able to be used to model ParMoR robots, but the remedy of "Report improvements to RobMoSys Meta-Models" does not indicate a commitment to complicate with RobMoSys. No TRLs are discussed since the system is limited to non-industrial applications. KPIs are defined but no clear metrics are given.	Score: 4 / 10 *(Threshold: 6/10)*

3. Implementation of the ITP	Weight: 30%
The Workplan including tasks and methods is not described at the adequate level. Tasks are neither named nor numbered. Timings and efforts are given. Some tasks are not appropriately justified e.g., the third tasks states: "We will propose a translator tool that will convert any robot modelled in RobMoSys to a robot modelled with Robotic Ontology and vice versa. This tool will be programmed in Phyton together with other modelling languages such as SUO-KIF and UML-MOF. The fourth task involving "Verification of RobMoSys-Ontology translator through a testing bench with industrial and service robots" does not correspond to anything mentioned in the Excellence section, and the meaning in the task description of "we will identify which	Score: 3 / 10 *(Threshold: 6/10)*

robot should be modelled (according to factor such as representativeness)" is unclear. Team composition is not explicitly explained and motivated. The description of work is very short consisting of only three deliverables which are considering the runtime of the project not enough.	
Remarks	
Weighted score:	*3,175*
OVERALL SCORE :	Score: 9,5 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 242 - Experimental Infrastructure Towards Ubiquitously Safe Robotic Systems using RobMoSys

1. Expected impact	Weight: 35%
There is likely to be a large potential user group because since safety is a growing concern, because the proposal uses industry standard open source software such as Gazebo and ROS making it widely accessible, because the close integration with RobMoSys will provide an easy development path for other RobMoSys users, and because the key proposal results 'are expected to be open sourced'. It will certainly contribute a very useful extension to the RobMoSys ecosystem, and will significantly increase the likelihood of wider adoption. It is closely aligned with the Multi-Annual Roadmap for Robotics 2020, which will influence European companies and developers to consider dependability and safety assurance/certification. The allocation of effort to dissemination will also reach out to potential users. The choice of the domain for the benchmarking case study (collaborative robotics - an AGV in a crowded factory, or a manipulator sharing its workspace with humans) will also attract attention from companies already facing safety issues in deploying these technologies.	Score: 9 / 10 *(Threshold: 6/10)*
2. Technical excellence	**Weight: 35%**
The proposal is to develop an experimental infrastructure, using and extending the RobMoSys approach, to allow robot application developers to design and implement safe robotic systems. The concepts, methods, and tools to be developed target to both support the development process itself, such that safety concerns will be met through the design and implementation process, and allow for safety validation of the developed systems. For the former, the RobMoSys approach will be extended by a formal language for expressing assumptions and guarantees, and by associated tools for their specification, validation and refinement. For the latter, classical safety analysis methods such as FTA and FMEA are to be combined with simulation based methods such as FI. The approach is certainly ambitious, but appears workable as the quality of the proposal as written and of the planned work is extremely high. TRLs at expected levels (TRL4-6) are given for six aspects of the tangible results. Very clear and relevant GQM derived KPIs are given for ten elements of the work, with substantial improvements over current performance levels being targeted.	Score: 10 / 10 *(Threshold: 6/10)*

3. Implementation of the ITP	Weight: 30%
The workplan is unusual, with only three tasks, but read in combination with Section 1 it is clear, adequately detailed, and realistic. The task descriptions specify appropriate subtasks and deliverables, in most cases with enough detail to convey how the proposers want to go about achieving their objectives. The allocations of effort are not broken down by subtask, and with only three tasks are less informative than they could be, but the totals are credible, with 27pm for Design and Development, and 12pm for Benchmarking. The workplan is highly likely to be effective. The consortium is very strong and complementary, with a large and prominent research institute and an industrial robotics solutions provider, both having led projects to develop key software to be used within the proposed project. A risk register will be developed and maintained, and a detailed example is given of anticipated risks and mitigation strategies.	Score: 9 / 10 *(Threshold: 6/10)*
Remarks	
Weighted score:	*9,35*
OVERALL SCORE :	Score: 28 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 244 - Models and tOOls Development for BEhavior design

1. Expected impact	Weight: 35%
The proposal's tight focus on one specific need in the model-based development of robotics (behavior specification) means that it will have a tightly focused but nonetheless important large impact. With the importance of defining behavior to the overall problem of developing a robotic application, this impact can be expected to be significant and reach all robot projects, provided the project can follow through on its promises to integrate behavior trees into the RobMoSys meta-model and approach. The proposal explains clearly how and which core concepts of RobMoSys it targets (Component Based Software Development/robot behavior/task planning and component orchestration) and how it will realize the relevant goals. The inclusion of documentation creation and tutorials in the project's scope will improve the impact by making the developed tools more accessible. The use of a 100% open source strategy is further beneficial to the impact.	Score: 10 / 10 *(Threshold: 6/10)*
2. Technical excellence	**Weight: 35%**
The proposal has, from the very start, a clearly stated focus on the "coordination" concern and the "behavior developer" user story/role from the RobMoSys project. The proposal also has a clearly stated intent to work with the existing RobMoSys meta-model, rather than merely try and transform their own to it. They place their work within the RobMoSys meta-model and have gone to the trouble of investigating and indicating how it will integrate with the rest of the RobMoSys meta-model. The proposal clearly identifies a specific, definable problem to be solved in the project. The problem is stated in terms relevant to RobMoSys, making the need in RobMoSys for a solution clear. Although the proposal explicitly eschews taking a formal approach, they do justify this decision satisfactorily. The proposed project builds on software and techniques which are already at a high level of technical readiness (although the proposal is a little optimistic about raising them to level 7 in 12 months). The project proposer has an existing software tool chain for working with behavior trees and experience in using it on a real robot application, and additionally the principle investigator is excellent with regard to the state of the art in CBSD. Although the modelling aspect is not as developed, having a sound foundation on which to build it gives confidence in the project achieving	Score: 9,5 / 10 *(Threshold: 6/10)*

the stated goals and reduces the risk. The KPIs are a little soft and lacking in metrics.	
3. Implementation of the ITP	**Weight: 30%**
The proposal is from a single entity, rather than a consortium, but this entity does appear to have the necessary experience and skills in place to achieve the project's stated goals. The project appears to be very low risk. The proposer has an existing software tool chain to build on, they have already done the necessary investigatory work to confirm that their proposal fits within the RobMoSys ecosystem, and they have existing familiarity with RobMoSys. The proposed project plan is coherent and, while relatively simple, does not have any obvious flaws. Putting integrating the behaviour tree concept into the RobMoSys meta-model as the first task ensures that the remainder of the work in the project will be built on something that works within RobMoSys from the outset. It also indicates the priority given to being a part of the RobMoSys ecosystem and model-based tool chain. Possibly the proposal could have asked for more money to fund additional software developers, ensuring that the project goals could be met sooner or the produced tools could be more feature-complete or of a higher quality. Nevertheless, the proposal is very effective with regards to the requested budget and expected impact. The proposal could also have discussed the risks in more detail; it only mentions three and does not have any information on likelihood and potential impact. More details of the intended project management would have been good.	Score: 9 / 10 *(Threshold: 6/10)*
Remarks	
Weighted score:	*9,525*
OVERALL SCORE :	Score: 28,5 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 245 - Performance Enhancement for RobMoSys

1. Expected impact	Weight: 35%
This substantial proposal will have some useful impact on the RobMoSys community because the analysis of projected system performance (real-time constraints, communication delays and so on) is of high value to a system integrator, and so having this capability at a high technical quality level is important for RobMoSys. However, the proposed approach fails to deal adequately with the requirements for integration with the RobMoSys meta-model. This will limit the direct impact on the RobMoSys ecosystem itself, however useful the scheme may be in practice. Except for the source code for the multi-axis control code, which is anyway not central to the proposal, all the software generated within the project will be open source, under the Eclipse Public License.	Score: 5,5 / 10 *(Threshold: 6/10)*

2. Technical excellence	Weight: 35%
The proposers' well-motivated aim is to add or improve RobMoSys capabilities for modelling the performance of software and hardware, including real-time processes and network communication delays, and enabling the participation and contribution of control theorists. Approaches to link real-time and control engineering in co-design scheme is of high relevance. However, the contribution and approach of the proposal is not clear enough. For instance, just forwarding performance analysis results to a control engineer is not sufficient for her to reason about controller stability. The proposers should have put more effort in describing how the proposed modeling extension can be used to achieve the goals, and also discuss the connection to related work such as TrueTime and JitterBug. Also, the proposal states that the performance analysis meta-models (the "Analysis Repository Meta Model") will be constructed completely separately from the existing RobMoSys meta-models, but the reasoning behind this decision is not made sufficiently clear, although the proposal states that it is to comply with the RobMoSys principle of separation of concerns. Because of this, the integration with RobMoSys at the model level will be minimal. The proposal does briefly mention behaviour modelling, but it is not made clear how this relates to their proposed work on resource modelling and controller modelling. A minor goal of the proposal is developing a code generator for a specific robot controller, but this will only extend the RobMoSys model-based tool chain by adding support for one type of robot. Key Performance Indicators receive little attention and are all variants of achieved/not achieved, with no other metrics or targets, and no TRLs are mentioned.	Score: 5,5 / 10 *(Threshold: 6/10)*

3. Implementation of the ITP	Weight: 30%
The workplan is clear and adequately detailed, and relates well to the Excellence section, with no omissions. The three work packages group their component tasks well, and deliverables are appropriately timed and described. The unusual idea of first carrying out what they call a 'case study' is not to serve as a technology demonstrator, but to reveal any shortcomings of RobMoSys that will need to be taken into account in their work, and is thus a sensible first step. It is clear that the amount of work described will require more staff effort than appears in the plan, and this is explained by the comment in the budget section that the work time of ten permanent research staff, including several senior staff, was not included in the project cost in order to 'reduce the demand of funding'. Overall, the implementation will be effective in adding resource modelling for real-time tasks and modelling of controllers to RobMoSys. The consortium is of very high quality, with each partner contributing considerable and appropriate expertise. However, risk management is not considered.	Score: 8 / 10 *(Threshold: 6/10)*
Remarks	
Weighted score:	*6,25*
OVERALL SCORE :	Score: 19 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 246 - Model-Based User-Friendly Framework for Robot Planning and Execution

1. Expected impact	Weight: 35%
Easy access to AI planning technology is potentially a big benefit for the robotics community. In this context it is of high importance to not only cover the straight-forward nominal behavior but also corner cases and error situations. The proposed PNP based planner seems to have advantages here in expressiveness. However, it is not clear how this advantages can be salvaged by end users. There exist, therefore, doubts that the technology is mature enough for main stream usage in a consolidated framework. Moreover, open-source licensing and tutorials are described in a generic way without clear assessment plans	Score: 5,5 / 10 *(Threshold: 6/10)*
2. Technical excellence	**Weight: 35%**
The consortium proposes to introduce a new sequencer based on Petri-Net Plans (PNP) into the RobMoSys framework and to enhance it with support for temporal logic and hierarchical PNPs. Another goal is to make the system more intuitive and practical with a more user-friendly interface (offline plan definition tool based on PDDL and online plan monitoring support). Overall, it is a good idea to adapt new planners into the RobMoSys framework. However, several aspects remain unclear: • The motivation why the PNP based planner should be plugged into the RobMoSys framework is not properly motivated. The claim that PNPs are more powerful and thus more adequate to model complex behavior shall only be demonstrated by a case study inside the project. More detailed arguments along with adequate KPIs for measurement during demonstration is necessary here. • Why is there a need for a PDDL based user-interface? Are PNPs so hard to specify? If yes, what is the remaining benefit having them as backbone? The goal should rather be making PNP specification more accessible to benefit from the claimed advantages in expressiveness. Perhaps by means of a DSL... • What is the motivation for extending the (already hard to specify) PNP formalism with temporal logic and the possibility to specify hierarchical PNPs? A proper motivation is missing. These extensions will make the PNPs even harder to use for non-experts. Current and envisioned technology readiness levels were not clearly presented.	Score: 5 / 10 *(Threshold: 6/10)*
3. Implementation of the ITP	**Weight: 30%**
The consortium seems to be well qualified to conduct the work outlined in the proposal. Overall the implementation (temporal plan, deliverables list, and risk mitigation plan) is straight forward and efforts are adequate.	Score: 5 / 10 *(Threshold: 6/10)*

The weak point is the definition of the KPIs. Of course it is hard to specify the benefits of a new method compared to existing approaches. However, it is crucial that there is clear evidence or measurement of (expected) advantages compared to other approaches. Such measurement and comparison is not discussed in the proposal, and also not part of the work plan.	
Remarks	
Weighted score:	*5,175*
OVERALL SCORE :	Score: 15,5 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 247 - Robotics Language Function Designer

1. Expected impact	Weight: 35%
The proposal as written does not make RobMoSys the central concern, but it will have some impact on and for the RobMoSys community. The Impact section states that the initial target audience is the entire ROS and ROS Industrial community, which will certainly form a very large potential user group, but only a proportion will also count as being in a RobMoSys user group. The extensions to the RobMoSys ecosystem may benefit both tooling providers and component suppliers, but meta-modelling and composability receive little attention. The development tools certainly have potential value. Most of ROLF is open sourced, and the company commits to maintaining the depository, but some closed source will be considered on a case by case basis. While most deliverables are public, the one on 'testing in real robots' will be confidential, which may reduce the potential impact.	Score: 6 / 10 *(Threshold: 6/10)*

2. Technical excellence	Weight: 35%
ROLF will be made to be compliant with RobMoSys through the provision of appropriate interfaces. If successful, it will constitute an advance over the state of the art in terms of ease of use, its generic and reusable characteristics, and the provision of efficient parameter management. However, the strategy for integrating it into the RobMoSys architecture is lacking in detail. The involvement in the parallel ROSin project is likely to provide some background technical benefits. The system itself is likely to be of high quality, judging by the thoroughness of the proposal, and it certainly shows a degree of originality. The anticipated Technology Readiness Level by the end of the project is TRL8, which is very high and possibly unrealistic. Six KPIs are proposed, some with metrics, but none with explicit targets.	Score: 6,5 / 10 *(Threshold: 6/10)*

3. Implementation of the ITP	Weight: 30%
The workplan involves seven workpackages, each of which takes the form of a list of subtasks with very brief descriptions, but taken in conjunction with the descriptions in Section 1 these are adequate. There are three sensible milestones, and thirteen deliverables, a large number but one that is reasonable in context although the project timeline is short. Efforts and budget are appropriate. Overall the workplan is coherent and likely to prove effective, especially since it will be implemented entirely in house by staff who have been working on	Score: 7 / 10 *(Threshold: 6/10)*

the predecessor software for some time. The single partner is clearly capable in this area and strongly motivated. However, risk management is cursory, lacking impacts and likelihood, and begins far too late.

Remarks	
Weighted score:	*6,475*
OVERALL SCORE :	Score: 19,5 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 248 - FraMe-RS: A Framework for Modelling Robotics Systems

1. Expected impact	Weight: 35%
The proposals description of its impact is weak and described only on a very abstract level. There is not likely to be any benefit to others working in the RobMoSys project from this work if, as is hinted at, the project intends to use Simulink as its modelling language and tool. If, on the other hand, it intends to use SysML, as stated elsewhere in the proposal, then it has the same problem: a lack of working with the existing RobMoSys ecosystem. Neither clear criteria for assessing the impact nor measures for maximizing impact are described.	Score: 2 / 10 *(Threshold: 6/10)*
2. Technical excellence	**Weight: 35%**
The proposal describes only vague and imprecisely specified objectives. The objectives section early on is, effectively, a summary of the RobMoSys goals. They basically amount to an attempt to combine methods, which are developed or used by the partners but with little acceptance elsewhere, with the RobMoSys set of concepts and tools. It is not described how exactly this combination (or integration, if you wish) is to be achieved. There are hints here and there throughout the proposal about what is intended to be done, but nothing is clearly stated and the apparent development goals are so massive as to be infeasible under the time constraints and the funding available. Although it is not stated clearly, it seems that the project intends to work with Simulink. This is completely unrelated to the RobMoSys meta-models or any other parts of the RobMoSys ecosystem. No re-use of existing RobMoSys work is mentioned. Key performance indicators are only vaguely described and mostly non-measurable or not quantifiable.	Score: 2 / 10 *(Threshold: 6/10)*
3. Implementation of the ITP	**Weight: 30%**
The proposal is inconsistent in many ways. For example, at one point it appears to be claiming that the project will work with open-source tools and standards to ensure the results can be spread freely. In the very next paragraph, the proposal states that Simulink, a proprietary tool, has been chosen as the basis for some or all of the work. Then in the work packages description the proposal states that a SysML profile will be created. Throughout the proposal objectives stated in one place, such as the "impact" section, are not carried through to another, such as the work packages list or the KPIs. Overall, the work plan is weak. Based on the objectives, which include doing all of RobMoSys plus more (development of code generators, modelling tools,	Score: 2 / 10 *(Threshold: 6/10)*

model transforms, some kind of "integrated framework", and a case study are all mentioned), the proposed project would be a very high risk endeavour. The work packages list does nothing to improve confidence, stating that an entire profile for robotics based on unifying SysML, Simulink and Modelica will be created in addition to performing two case studies and developing a code generator.

Almost one-third of the personnel effort (about 45% in terms of personnel cost) is devoted to managerial-level tasks such as "coordination, guidance, research leadership", leaving only limited resources for actual research and implementation.

There is significant doubt that the proposal is underestimating the required effort for actually achieving the objectives. Given the limited time frame and resource constraints, the work described appears infeasible and is bound to produce only very debatable results based on an only shallow analysis. The actual "risk management" table gives no indication of the awareness of these risks.

Risks and their mitigation measures are only weakly and incompletely described.

Remarks	
Weighted score:	*2*
OVERALL SCORE :	Score: 6 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

First Open Call for RobMoSys Contributions

Evaluation Summary Report

Proposal ID 249 - Papyrus-ROS Toolchain for RobMoSys

1. Expected impact	Weight: 35%
The key envisioned contributions of the project are threefold: i) "development of a ROS-aware robotics library in Payrus", ii) "virtualization of a concrete robotics system to be used as a testbed", and iii) "developing a highly customized code generator to ROS". Furthermore, to demonstrate and assess the efficacy of the systems, an automated guiding system for visually impaired people will also be developed. The team has a track record in model-based development (e.g. Papyrus-RT) including events like EclipseCon. The proposal cites the large ROS user base. However, it is doubtful that the success of ROS automatically leads to a large impact of the proposed work. Just by creating a modeling tool for ROS will not suffice to generate impact. It should have made clearer why a Papyrus front-end is generating advantages for ROS users. In this respect also related approaches (that had limited success) such as BRIDE should be discussed. The proposal cites releasing open-source developed components.	Score: 5 / 10 *(Threshold: 6/10)*
2. Technical excellence	**Weight: 35%**
The proposal builds upon Papyrus-RT and prior work. In this respect, the proposal contains a few interesting references. However, the current state-of-the-art and gaps in the knowledge domain were not fully described. The proposal is not fully in line with the RobMoSys approach. It is not sufficiently motivated why a ROS-compliant modelling frontend in Papyrus is desirable. Wouldn't it be much more attractive for robotic developers to work with a middleware-agnostic front-end? Based on such a modeling, a backend should take care of a semantically correct mapping to a given middleware - taking into account semantic subtleties (e.g. how data is handed over from transport layer to the individual threads) avoiding pitfalls. Also, the proposal does not state clearly the level of completion and success of past work in the area. As such, from the proposal itself, is not clear how well past work will be successfully leveraged into the envisioned activities. The list of key-performance indicators (KPI) is detailed and involves 3 different scenarios. However, in what concerns Task 6, regarding Validation and demonstration on a real robot, the metrics (for validation) are missing.	Score: 6 / 10 *(Threshold: 6/10)*
3. Implementation of the ITP	**Weight: 30%**

The project brings to the core of the proposed R&D effort a team of two reputed institutions (IRIT and Ostfalia University of Applied Sciences), with know-how in areas that give support to the envisioned development. The risk management plan is short and the contingency plans lack detail. For example, the plan to deal with the fact that the "overall time period (may be) too short" does not seem satisfactory. A 12-month Gantt Chart and a list of deliverables list are included. However, it is not clear from the proposal if and how many review meetings will be held. It is also not clear how knowledge will be shared to efficiently and effectively integrate outcomes. Plans to exchange team members for short periods (e.g. 1-2 weeks) were not given. While this is not a weakness per se, the lack of exchanges raises questions on the efficacy of knowledge exchange and co-development. In spite of this, the proposed effort appears viable given the team's track record.	Score: 6 / 10 *(Threshold: 6/10)*

Remarks	
Weighted score:	*5,65*
OVERALL SCORE :	Score: 17 / 30 *(Threshold 21/30)*

The evaluation scheme and related points and thresholds are outlined in the Guide for applicants.

Annex 3 – Model of the Notification Letter

Subject: Evaluation Summary Report
Programme/Call: RobMoSys-1FORC
Proposal: YYY [Number and Name]

Dear XXX,

You submitted the proposal "YYY" in response to the first Call for experiment proposals for RobMoSys contributions. All eligible proposals were evaluated by external independent experts in accordance with the terms of the H2020 evaluation procedures.

Please find enclosed a copy of the Evaluation Summary Report (ESR) for this proposal. The ESR reflects the comments of the evaluators.

or

[This letter is to inform you that the above-mentioned proposal is unfortunately not on the final list of proposals for possible funding, and it has not passed the evaluation thresholds on the basis of the results of the evaluation by experts. Due account was taken of the scores received and of any advice from the experts as well as the budget available.]

or

[This letter is to inform you that the above-mentioned proposal is on the final list of proposals for possible funding on the basis of the results of the evaluation by experts.]

In the coming days, the final funding decision made by the European Commission will be made available on the RobMoSys website.

Let me take this opportunity to thank you and your fellow consortium members for the interest shown in RobMoSys and to wish you success in your endeavors.

Kindly provide the other members of your consortium with a copy of the attached report.

Yours sincerely,

Annex 4 – Good practices and templates for organizing open calls under the H2020 Financial Support to Third Parties scheme

1. Introduction

Your call should be carried out in the light of the same basic principles which govern Commission calls:

i.   **Excellence.** The proposal(s) selected for funding must demonstrate a high quality in the context of the topics and criteria set out in the call;
ii. **Transparency**. Funding decisions must be based on clearly described rules and procedures, and all applicants should receive adequate feedback on the outcome of the evaluation of their proposals;
iii. **Fairness and impartiality.** All proposals submitted to a call are treated equally. They are evaluated impartially on their merits, irrespective of their origin or the identity of the applicants[1];
iv. **Confidentiality.** All proposals and related data, knowledge and documents are treated in confidence;
v.   **Efficiency and speed.** Evaluation of proposals and award of the financial support should be as rapid as possible, commensurate with maintaining the quality of the evaluation, and respecting the legal framework.

1. Preparation activities

The Call Announcement

You should prepare a brief announcement about the call (you may use the model included in Annex 1 of this document) which will be published on the Horizon 2020 Participants Portal, and on the project website. It contains a link to the section on the project website where the full call details are published. In order to ensure timely publication on the Participant Portal, please provide the call announcement at least 30 days prior to its foreseen date of publication to your Project Officer.

The Full Call Details

You should prepare a dedicated section of your project's website, which will give proposers the Full Call Details. This must be in line with the specific requirements of the work programme and contain:

- A clear and exhaustive list of the types of activities that qualify for receiving financial support.
- Any restrictions on participation in any part of the call (e.g. only certain types of organisation are required, only organisations based in certain countries etc.). Please note that the calls must have a clear European dimension which can be achieved either through cross border experiments or through expanding local experiments to European scale.
- The criteria determining the award of the financial support.
- The criteria for determining the exact amount of financial support and the form that the financial support may take (e.g. a lump sum – either pre-defined or based on estimations of the grant recipient - or the reimbursement of actual costs incurred by the recipients when implementing the supported activities).
- The specific arrangements that the beneficiaries may impose on the third parties (e.g. specific reporting and feedback obligations from the third party towards the beneficiary in respect to the implementation of the supported activities; specific arrangements for providing the financial support; specific rights for the beneficiaries to access and use the results of the supported activities).

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[1] In the frame of any restrictions provided for in the call

- **The information needed to submit a proposal**
  - **The template to be used for the proposals**
  - **The coordinates (email address and telephone number) of a help facility which you must maintain for proposers during the call**
  - The email address to which proposals should be submitted and the call identifier which will be used on these emails
  - The deadline for proposal submission, clearly specifying the local time involved (normally this is local time at the website where the proposals are received).

2. Publication of the call

Following the requirement of the General Annex K of the Work Programme, you will publish the Full Call Details, at least, on the project's own website.

Your Project Officer will arrange to publish the Call Announcement and (a reference to) the Full Call Details on the dedicated web page of the Horizon 2020 Participants Portal.

The call must remain open for the submission of proposals for a period of at least three months. If call deadlines are changed, this must immediately be communicated to the Project Officer for updating the Call Announcement on the Horizon 2020 Participant's Portal. The Full Call Details must be updated on the project's own website and all registered applicants must be informed of the change.

> **Please make sure that all proposers receive fair and equal treatment. Information or facilities which you supply to any proposer must be equally available to all.**

3. Proposal reception

Proposals should be submitted through an electronic exchange system which allows the identification of the time of submission. On receipt of each proposal you should send an Acknowledgment of receipt to the proposer (see example in Annex 2).

You may not accept late submissions; late submitters should receive by return email a "call closed" message from you.

You should evaluate the proposals as submitted: after the call closure no additions or changes to received proposals should be taken into account.

4. Proposal evaluation and selection

Evaluation criteria and procedure

You will evaluate proposals received in the light of the criteria laid down in the Full Call Details. You may use the attached form (see Annex 3).

You remain responsible for the evaluation towards the proposers, even though you may count on the assistance of experts[1].

If you engage experts for evaluating the proposals, please ensure that they are independent from the organisations involved in the consortium and from any proposer.

The selected experts should sign a declaration of confidentiality concerning the contents of the proposals

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[1] The selection of these experts should follow the conditions foreseen in Article 10 of the Model Grant Agreement.

they read and they should also confirm the absence of any conflict of interest (see an example of such declaration in Annex 4).

The outcome of the evaluation will be a ranked list of all proposals, based on the scores obtained by each proposal.

Proposal selection

Whilst normally the highest ranked proposals will be selected for funding, there might be objective reasons for objecting to a specific third party, for example commercial competition. In this case the choice may pass to the next-ranked proposal.

You may conclude that even the highest scoring proposal is of inadequate quality, in which case you will make no selection. This conclusion is obligatory if all the proposals fall below the threshold scores applied at the evaluation.

In the event of no selection being made, you may re-open the call at a later date. Alternatively, you may conclude that no successful outcome can be expected and abandon the plan to hold an open call. This decision would have to be justified and be the subject of a grant agreement amendment.

5. Reporting, documentation and feedback

Reporting

Shortly after the evaluation you should publish a **public summary report** of the evaluation results on your project website within 30 days of the end of evaluation taking into account your feedback process to the proposers (i.e. the proposers should have received your individual feedback before the public summary report is published). This report should comprise an account of the call, its evaluation and its results, including dates of call, how it was published, dates of evaluation, number of proposals received, number of proposals funded, as well as a list of all selected proposers and their funding amounts (you may use the model included in Annex 5).
Documentation

Additionally to the summary report you have to keep your internal records on the evaluation as audit trail in case of e.g. contestations by proposers, audits, or checks by the commission. These records comprise as a minimum:

- A listing of proposals received, identifying the proposing organisations involved (name and address).
- All received proposals
- All communications with applicants before call closure and during evaluation
- The names and affiliations of the experts involved in the evaluation;
- For each proposal a copy of the filled forms used in the evaluation;
- A record of all incidents which occurred during the evaluation (e.g. how conflict of interest were handled if they were detected during the evaluation process) and any deviation from standard procedure (e.g if a proposer selected was not the highest scoring one, you must document the objective reasons why the highest scoring one was passed over)

Feedback to proposers

After the evaluation of the proposals, you will get into contact with the successful proposer(s).

You should communicate to the other proposers that their proposal was not successful in the call, and

should enclose to each a summary of the evaluation result of their proposal addressing the respective award criteria.

Annex 1 – Call announcement format

Announcement of an open call for recipients of financial support

Project **acronym:** XXX
Project **grant agreement number:** XXX
Project **full name:** YYY

Project XXX, co-funded from the European Union's Horizon 2020 research and innovation programme under grant agreement No XXX, foresees as an eligible activity the provision of financial support to third parties, as a means to achieve its own objectives.

The types of activities to perform that qualify for receiving financial support are XXX.

Deadline: XXX
Expected duration of participation: XXX
Maximum amount of financial support for each third party: XXX
Call identifier: XXX call
Language in which proposal should be submitted: XXX
Web link for further information (full call text/proposal guidelines/call results) on your official project web site: www.xxx-project.eu/xxx
Email address for further information: XXX@XXX.com

Annex 2 - Acknowledgment of receipt

Acknowledgement of receipt

Dear XXX,

Thank you for submitting your proposal for consideration as recipient of financial support in the frame of project XXX.

The evaluation of all proposals received will take place in the next few weeks. You will be notified as soon as possible after this of whether your proposal has been successful or not.

On behalf of my colleagues in the project I would like to thank you for your interest in our activities.

Yours sincerely,

Annex 3 – Evaluation form

Individual evaluation/Consensus (delete as appropriate)

Proposal No. :	Acronym :

1. Award criterion 1	**Score:** *(Threshold 3/5; Weight)*[1]
2. Award criterion 2	**Score:** *(Threshold 3/5; Weight 1)*

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[1] Thresholds and weights are standard values which can be adapted to the needs of the specific evaluation, if necessary

o The proposal fails to address the criterion under examination or cannot be judged due to missing or incomplete information; 1 Poor The criterion is addressed in an inadequate manner, or there are serious inherent weaknesses; 2 Fair While the proposal broadly addresses the criterion, there are significant weaknesses; 3 Good The proposal addresses the criterion well, although improvements would be necessary; 4 Very good The proposal addresses the criterion very well, although certain improvements are still possible; 5 Excellent The proposal successfully addresses all relevant aspects of the criterion in question. Any shortcomings are minor.

3. Award criterion 3	Score: *(Threshold 3/5; Weight 1)*
Remarks	Overall score: *(Threshold 10/15)*

I declare that, to the best of my knowledge, I have no direct or indirect conflict of interest in the evaluation of this proposal

Name	
Signature	
Date	

Name	
Signature	
Date	

0 The proposal fails to address the criterion under examination or cannot be judged due to missing or incomplete information; 1 Poor The criterion is addressed in an inadequate manner, or there are serious inherent weaknesses; 2 Fair While the proposal broadly addresses the criterion, there are significant weaknesses; 3 Good The proposal addresses the criterion well, although improvements would be necessary; 4 Very good The proposal addresses the criterion very well, although certain improvements are still possible; 5 Excellent The proposal successfully addresses all relevant aspects of the criterion in question. Any shortcomings are minor.

Annex 4 – Confidentiality and conflict of interest declaration

I the undersigned declare that, in participating as an independent expert in the evaluation of proposals received in the open call of project XXX

> I undertake to treat as confidential all information contained in the proposals which I am asked to evaluate, both during the evaluation and afterwards.

> I will not reveal to any third party the identity or any details of the views of my fellow evaluator(s), neither during the evaluation nor afterwards

> I do not, to the best of my knowledge, have any interest in any of the proposals submitted in this call, I have not been involved in their preparation and I do not benefit either directly or indirectly from the eventual selection. Should I discover a conflict of interest during the evaluation, I undertake to declare this and to withdraw from the evaluation.

Name	
Signature	
Date	

Annex 5 - Public evaluation report

Results of open call (call ID ref XXX) for recipients of financial support

Project **acronym:** XXX
Project **grant agreement number:** XXX
Project **full name:** YYY

Project XXX, co-funded from the European Union's Horizon 2020 research and innovation programme under grant agreement No XXX, launched an open call (call ID ref XXX) for recipients of financial support.

The call closed on XXX.

A total of XXX proposals were received for this call. XXX proposals will receive funding for a total amount of XXX EUR.

The evaluation and selection has been completed. All proposers have been informed about the evaluation results for their proposal for financial support.

Call information

The call was published on project XXX's website (URL XXX) and on the Horizon 2020 Participants Portal (URL XXX) on XXX. Full call details were published at: (URL XXX)

Please add any other location where the call was published (if any) or any other relevant information.

Response to the call in detail[7]

	Number of proposals	Funding requested
Proposals received		
Eligible proposals		
Proposals above threshold		
Selected proposals		

List of selected proposals

Organisation	Country	Funding awarded

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[7] If different activities where called for, repeat this table for each activity.