Applicant guide

A sustainable European infrastructure to support novel robotic technologies on their path to market

PUBLIC Version 1.3

Voucher call 2016

Contents

Change control table

Ver 1.0 / 28-4-16	Initial version	SB – T. Ventures
Ver 1.1 /29-4-16	Adjust challenge descriptions & indication of nb of vouchers to accept	MV - DTI
Ver 1.2 / 5-5-16	Revision of spelling and grammar	MT - MTC
Ver 1.3 /01-12-16	Date for communicating results updated, and submission deadline postponed until midnight instead of 17:00.	SB - TEC

1. ROBOTT-NET and the voucher call

The goal of ROBOTT-NET is to accelerate the path to market for new robotics technologies increasing the competitiveness of Europe's manufacturing sector and giving raise to multiple new business opportunities in industrial and service robotics.

Through ROBOTT-NET, four major European Research and Technology Organisations (RTOs) join forces to offer a unique opportunity to develop business ideas to their full potential, based on innovative robot technology. DTI, Tecnalia, Fraunhofer-IPA and the MTC offer their aggregated capabilities in technology, infrastructure, relationships and business development for entrepreneurs, start-ups, SMEs and corporations, being either robot technology developers or end-users.

Crossing the "Valley of Death"

Europe needs a system for overcoming the "Valley of Death" in R&D that actually works, if it is to succeed in pushing promising robot technologies into industry. The "Valley of Death" exists because the goal of university research is normally satisfied (the scientific questions have been answered) once a technology functions well enough to produce measurable results in the lab. However, industry cannot deploy a technology unless it has a convincing business case and it is sufficiently proven, involving criteria such as robustness, reliability under the full range of normal factory conditions, meeting worker safety regulations, usability, ability to integrate with the existing production system, and having known quantitative performance criteria.

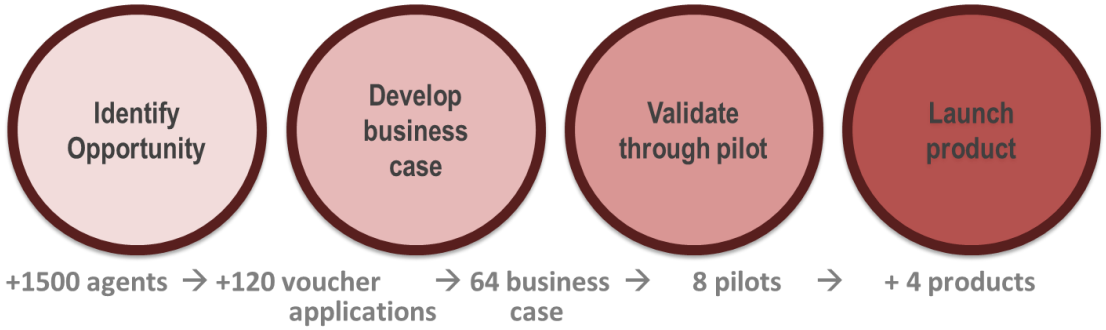
ROBOTT-NET aims to provide and test a set of sustainable Europe-wide structures and mechanisms for crossing the "Valley of Death", primarily by: finding the perfect match between market opportunities and new technology, developing a good business case and putting together a comprehensively-skilled team, and getting the field trial started. The first step to achieve this goal is through voucher work.

- Do you have an entrepreneurial project in a university, research organisation, start-up, SME or big company?
- Is your project bringing innovation in the area of industrial robotics or service robotics?
- Do you have entrepreneurial spirit, willing to solve market needs with innovative robot technology?

If so, continue reading, this call is for YOU.

ROBOTT-NET seeks to accelerate the path to market for new robotic technologies (see Figure below). In the first place this involves identifying and promoting state-of-the-art industrial and professional service robot technologies to over 1,200 robot developers (from industry and academia), and end-users in a bidirectional exchange of views and opinions about robotic research trends, needs and technology developments, and soliciting participation in ROBOTT-NET. The second stage involves developing a business case to assess the feasibility for business opportunities coming from both robot developers and end-users. The third stage consists of pilot validation, implementing first field trials and producing complete robotic automation

solutions at end-user sites. A fourth stage is the completion to a product launch, facilitated within ROBOTT-NET but happening outside project control.



Vouchers

The application process described in this guide is meant to select the most promising business ideas to help you develop or improve your business case, demonstrating its commercialisation potential. The business ideas should be based on innovative technology which has already been developed and validated in labs or controlled environments.

Voucher work is specifically conceived to help you in developing or improving the business case in the direction of technology transfer and commercialisation and it consists of 3 person months of consulting support from the four leading European RTOs.

Voucher work will help you to develop and/or improve your business case in various aspects of your project:

- Your value proposition: validating your technology through tests and prototypes to ensure it is delivering the promise and actually bringing an innovation to solve a relevant customer problem.
- Your market: understanding where your potential market is, how it can be characterised and how big it is.
- Your partners: getting in contact with relevant technological partners, potential customers, team members and investors to complete your project partnership.
- Your solution: proving the value proposition of your project, through proof-of-concept demonstration.

The integrated capabilities of the ROBOTT-NET partners are made available to your entrepreneurial project through voucher work. This work is implemented by working together - ROBOTT-NET partners and the entrepreneurial project team (see Annex 2 for an extensive description of voucher work).

There is no financial support provided as part of voucher work. Financial support will be made available for a selection of projects in the later pilot work stage of ROBOTT-NET that follows the voucher work stage. Only the winning voucher projects can apply for the pilot continuation.

2. Voucher Proposal preparation

The submission of proposals will consist of a single step process. The submission includes the description of an innovative and entrepreneurial project that is being carried out by the applicant. The project may be a business idea for establishing a new company or an intra-entrepreneurship project in a larger company to develop a new business line or improve existing production facilities by introducing innovative robotic solutions. In addition to the description of the project itself, the submitted application should also state what activity is expected to be performed as part of voucher work with the support of ROBOTT-NET.

Addressing ROBOTT-NET challenges

Your innovative entrepreneurial project must be based on robot technology explicitly relating to one of the following two themes:

- Industrial robotics (Robots performing repetitive, dirty or dangerous tasks in an industrial setting)
- Professional service robotics (Typically mobile robots performing logistical, domestic and other non-industrial tasks)

In addition, the project must address one or more of the challenges identified under the selected theme and this must be described in the voucher application. The identified challenges by ROBOTT-NET are:

1. **Industrial robotics challenges:** The following challenges relate to the development and usage of industrial robotics:
    - **Challenge 1.1: Human-robot interaction (HRI).** Human-robot collaboration, co-working, safety in HRI, cognitive and social interaction with robot systems and related topics.
    - **Challenge 1.2: New generation of robotics.** Lightweight robots, cable robots, etc.
    - **Challenge 1.3: Robot sensing and perception.** Sensor development for robot applications, algorithm development for perception, sensor-based robot programming, etc.
    - **Challenge 1.4: Service robots in industrial applications.** Delivery and transportation robots, mobile and unmanned ground vehicles for industrial applications, etc.
    - **Challenge 1.5: Assembly and manufacturing automation.** Mass customisation and reconfigurable robot system integration, new assembly and manufacturing automation systems, etc.
2. **Professional service robotics challenges:** The following challenges relate to the development and usage of professional service robotics:
    - **Challenge 2.1: Human-robot interaction (HRI).** Human-robot collaboration, cognitive and social interaction with robot systems, etc.

- **Challenge 2.2: New generation of service robotics.** Wearable robots, soft and flexible robots, mobile manipulation, etc.
- **Challenge 2.3: Robot sensing and perception.** Navigation, sensor development for robot applications, algorithm development for perception, 3D imaging, etc.
- **Challenge 2.4: Assistive robotics.** Mobile and unmanned ground vehicles for industrial applications, delivery and transportation robots.
- **Challenge 2.5: Specific service robotics applications.** Robots for agriculture applications, robotic waste sorting for recycling.

Participation

Voucher applications must be presented by a single legal entity which, if selected, becomes the only beneficiary of the voucher work. It is an individual application, not by a consortium. In principle, any legal entity that is entitled to participate as a partner in Horizon 2020 Research Programmes may participate in a voucher application.

The legal entity must be established in one of the EU Member States or Associated Countries:

- Member States: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom
- Associated Countries (as of 13 April 2016): Albania, Bosnia and Herzegovina, Croatia, Faroe Islands, FYR Macedonia, Iceland, Israel, Moldova, Montenegro, Norway, Serbia, Switzerland, Ukraine, Tunisia and Turkey.

The legal entity can be one of a variety of different types of organisation, including:

- Universities
- Research organisations
- Incubators
- Start-up companies
- SME
- Large companies

In the administrative part of the application, select the type of organisation that best describes the legal entity.

Applications are expected from both “robot developers” and “end-users”. Robot developers’ applications are assumed to be mainly “technology push”. In other words, the business case is built starting from a technology that solves a problem and making a hypothesis about the markets (applications) for which the technology provides a relevant solution. On the other hand, end-user projects are expected to be mainly “market pull”, meaning that they detect a non-satisfied market need, for which robot technology may provide a solution. In this situation, the business case needs to validate the development, adaptation or combination of the appropriate robot technology to make sure that it addresses the market needs.

Depending on the characteristics of the project, applicants are asked to indicate if their submission is as a “robot-developer” or as an “end-user”. This selection is important since the evaluation criteria have different interpretations, depending on whether the application is classified as “robot developer” or “end-user” (see Annex 3 for details on evaluation criteria).

Presenting your voucher application

A voucher application has three mandatory parts: Part A, Part B and Part C. Part A contains the administrative information about the project and the applicant. Part B is a PDF document that contains a description of the entrepreneurial project. Optionally, Part B may include also a PDF file with a slide presentation of the project and a video showing additional supporting information about the project. Part C consists of another PDF file, containing the objectives, activities and results expected from the proposed voucher work.

Part A of the proposal will contain the administrative information about the proposal and the participants. The information in Part A is entered through a set of online forms in the Electronic Proposal Submission System which is described in Section 3 of this Guide.

Part B of the voucher application is based on a "template", or list of headings, rather than an administrative form (see Annex 1 of this Guide). You should follow this structure when presenting your application. The template is designed to highlight those aspects that will be assessed against the evaluation criteria. It covers the characteristics of the entrepreneurial project or business idea that will be the object of the voucher work and the expected impacts if the business idea finally becomes a reality.

Part C of the voucher application is based on another "template" to describe the actual work that is expected to be done as part of the voucher work (see Annex 1 of this Guide). It covers the indication of the objectives that you want to achieve through the voucher work (linked to the priorities of your entrepreneurial project), a brief description of the activities that you would like to execute within the voucher and the results that are expected in terms of advancing your entrepreneurial project or business idea.

In summary, the voucher application consists of the following elements:

- Part A – Administrative information (online form)
- Part B – Project profile
    - Project description: PDF file following template (maximum length 5 pages, using the font size and margins proposed in the template)
    - Pitch Deck (optional): PDF file with slide presentation of your project (max 10 slides)
    - Pitch Video (optional): Video file with recording of additional project description (maximum duration 8 minutes)
- Part C – Voucher Work: PDF file following template (maximum length 3 pages, using the font size and margins proposed in the template)
-

IMPORTANT NOTE ON APPLICATION LENGTH

A maximum length is specified for the different parts of the voucher application. You must keep your application within these limits. The evaluators will not take into account any part of the applications that exceeds the established limits. However, independently of the limitations, bear in mind that it is in your interest to keep your application concise and right to the point. The maximum lengths established should NOT be interpreted as the desirable length. Overlong proposals are rarely viewed in a positive light by the evaluating experts. For example, Part B - Project description can perfectly have a total length of 3 pages. Take into account that the application does not require that you include all technicalities about the technology.

IMPORTANT NOTE ON CONFIDENTIALITY

The information requested for the application is securely stored on a server and will be treated as CONFIDENTIAL INFORMATION. It will only be accessed by the assigned expert evaluators and a reduced project team in charge or the evaluation process. The ONLY PUBLIC information of the application is the Project Summary, consisting of a maximum of 10 line description that will be used for promotional purposes, as a way to promote cross-fertilisation of ideas among applicants, in particular between academia and industry, which is one of the key objectives of ROBOTT-NET project. Please, make sure that no confidential information is included as part of the project summary.

In addition, take into account that the application need not disclose any details regarding how technology works. The relevant aspect for voucher application concerns the technology features from the perspective of the problem (not the solution).

3. How to apply

Proposals must be submitted electronically, using the Electronic Proposal Submission System (EPSS). Proposals arriving by any other means are regarded as “not submitted”.

The call for submission opens on 29th April 2016 and will remain open until 14th December 2016. Proposals can be submitted any time during this period. However, two cut-off dates are planned for voucher evaluation. All the proposals submitted before the first cut-off date will be evaluated and the evaluation results communicated to the proposers. The approved applications will be able to start their voucher work immediately after the results are announced. The rejected applications will be able to re-submit an improved version before the second cut-off date.

The goal is to select at least 32 winning vouchers at the evaluation after the first cut-off date. However, based on the expert evaluation of voucher applications, the Steering Committee reserves the right to select more or less than 32 vouchers. As a total of 64 vouchers will be selected for the entire call, the number of winning vouchers at each of the two cut-off dates may not be the same. Applicants are therefore encouraged to submit their application before the first cut-off date, rather than waiting until the second cut-off date.

The schedule and deadlines for voucher application submission are as follows:

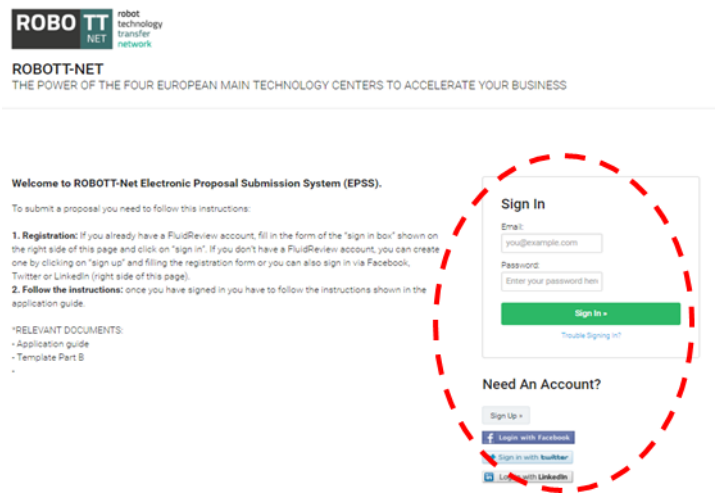
- Call open: 29th April 2016.
- First cut-off date: 13th July 2016, 17h00 Brussels Time
- Communication of results: 15th September 2016
- Second cut-off date (and call closing): 14th December 2016, 24h00 Brussels Time
- Communication of results: 28th February 2017

If your application is successfully submitted, the system will automatically send an acknowledgement of receipt. This acknowledgement of receipt does not imply that the application has been accepted as eligible for evaluation.

You may submit multiple versions of the same application. Only the last submitted version before the cut-off date is taken into account for evaluation.

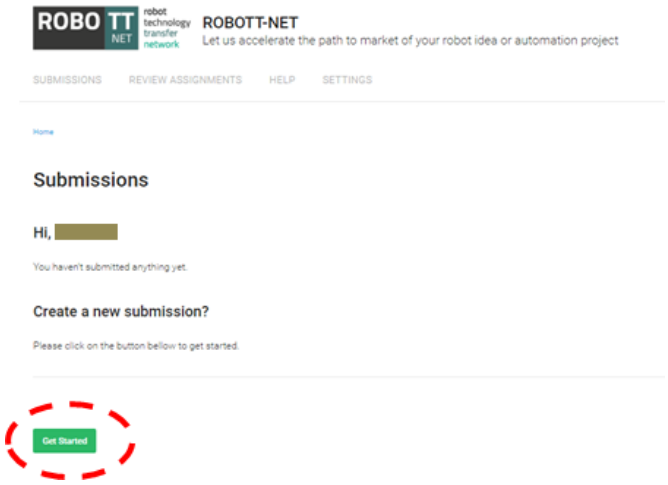
FIRST STEP: Registration

The EPSS allows proposers to submit their proposal completely online. The EPSS service is available via the Internet as a Web based application. By accessing to https://robottnet.fluidreview.com you will arrive to the EPSS start page. If you already have a FluidReview account, fill in the form of the "Sign In" box and click on "Sign In". If you don't have a FluidReview account, you can create one by clicking on "Sign Up" and filling the registration form. You can also sign in via Facebook, Twitter or LinkedIn. Note that if you sign in via Facebook, Twitter or LinkedIn you will have to edit your account settings and add an email address in order to be able to receive notifications regarding the application process:



SECOND STEP: Welcome page

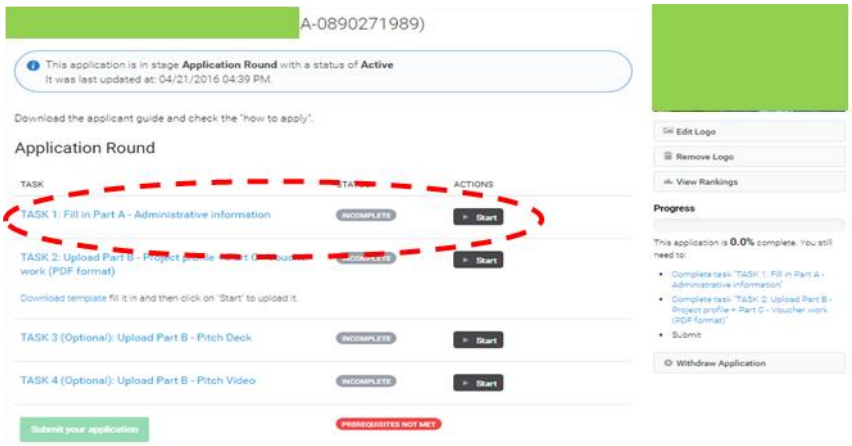
After signing in, you will arrive on the welcome page and have to click on "Get Started" to go to the application round:



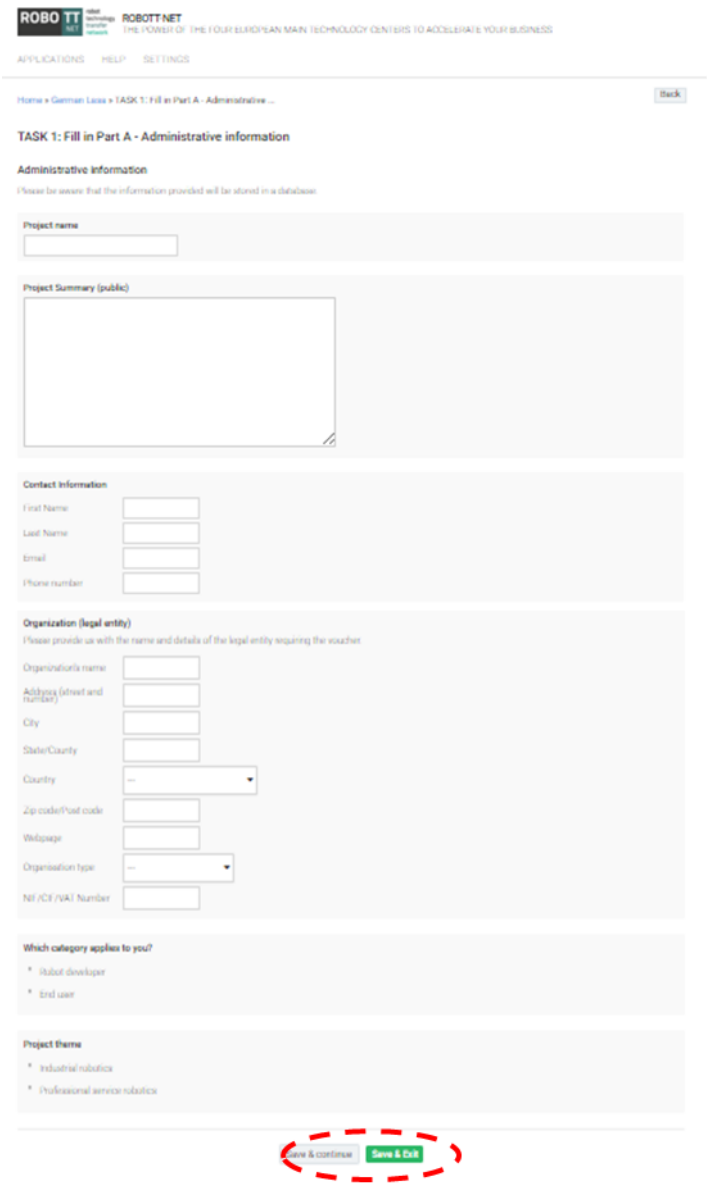
THIRD STEP: Application round

MANDATORY TASKS

Once you are on the Application Round page, you have to complete the first two tasks of the round: "TASK 1: Fill in Part A – Administrative information" and "TASK 2: Upload Part B – Project profile + Part C – Voucher work (PDF format)" by clicking on "Start" in each of the tasks.



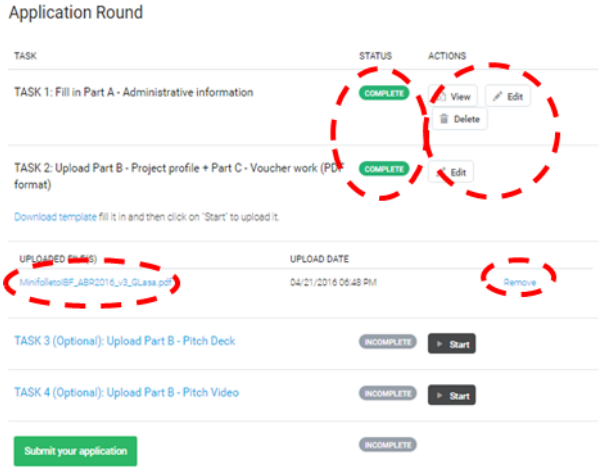
çBy clicking on the first task ("TASK 1: Fill in Part A – Administrative information") you will be taken to the application form that has to be filled out. Once this form is completed, you have to click on "Save & continue" to save and choose another task of the application round to continue editing or on "Save & Exit" go to the homepage:



To complete the second task ("TASK 2: Upload Part B – Project profile + Part C – Voucher work (PDF format)") of the application round, you have to first download the template by clicking on "Download template". After filling it in, you have to upload it by clicking on "Start":

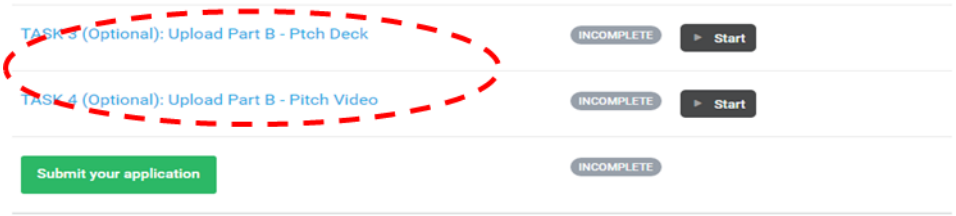
Note that once you have uploaded the PDF file, a preview will automatically come up and you will have to click on “Back” to continue:

After completing the first two tasks of the application round, make sure that both are marked as “Completed” in green and check that the uploaded file is the correct one. If not, you can always edit, delete or remove your work:



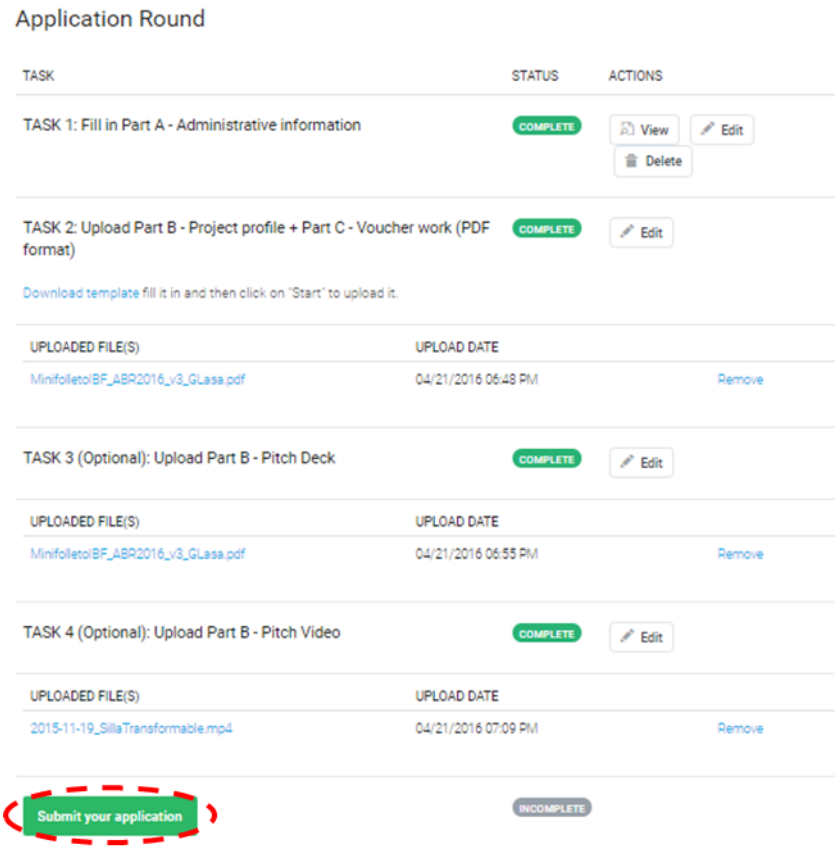
OPTIONAL TASKS

There are two more optional tasks to complete if you consider them necessary (suggested): “Upload pitch deck/slide presentation” and “Upload pitch video”. By clicking on them, you will be able to upload both the pitch deck (in pdf format) and the video. Video file types supported are AVI (preferred), Quicktime (.mov), MPEG (.mpg, .mpeg, .mp4), Windows Media (.wmv), Flash Video (.flv, .f4v). Videos uploaded must be smaller than 1000MB in size. If you get an error while uploading, please try uploading a different file format.

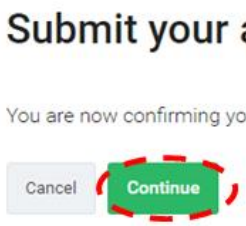


SUBMISSION

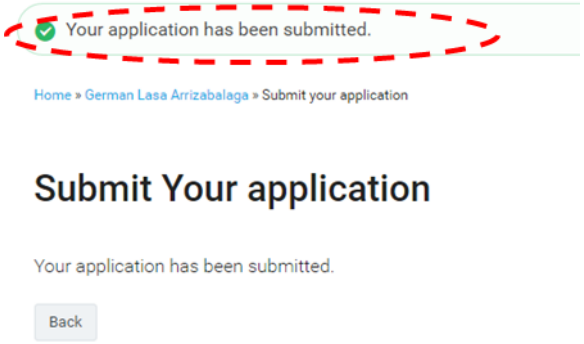
Once you consider that you have completed all of the application round tasks, click on "Submit your application". Note that even if you submit your application, you will always be able to edit, delete or withdraw it by accessing "My applications" from the main menu:



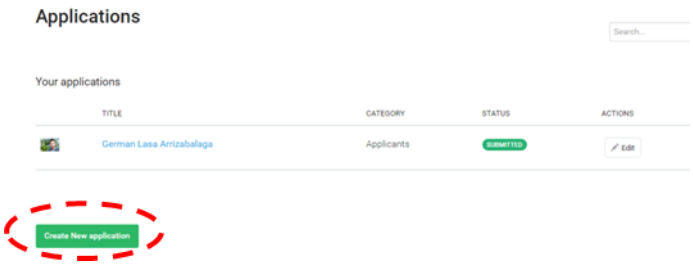
After clicking on "Submit your application" you will have to reconfirm that you definitely want to submit it by clicking on "Continue":



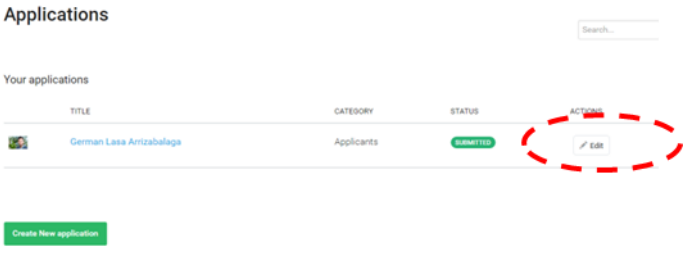
After clicking on “Continue” a message will confirm the submission:



If you want to submit a new application, you have to access to https://robottnet.fluidreview.com, click on “Create New application” and repeat the entire process:



Remember, you will always be able to edit, delete or withdraw the submitted applications accessing to “My applications” of the main menu and clicking on “Edit”:



4. Getting support

For additional support and answers to any questions which have not been answered in this guide, applicants are encouraged to participate in the ROBOTT-NET Open Lab events.

All Open Labs will be provide further details of the project opportunity with expert advisors to assist by answering questions related to the call and voucher applications. Each potential voucher application will be reviewed impartiality on its merits.

ROBOTT-NET Open Labs to be held at each of the four RTOs.

- DTI, Denmark 11th May 2016
- MTC, UK 26th May 2016
- Fraunhofer IPA, Germany 1st June 2016
- Tecnalia, Spain 9th June 2016

All the details for attending the above Open Labs are detailed in the attached links: http://robott-net.eu/open-labs and ROBOTT-NET LinkedIn page

ROBOTT-NET will provide the following support opportunities at each Open Lab, to all potential voucher applicants:

- Case examples with robotic solutions to serve as inspiration for voucher applications.
- General help desk, to initially assess the voucher opportunity.
- Interactive workshop with both technical and business consultants from the host RTO.
- Face to face meetings directly with RTO technical & business mentors to aid as inspiration for applications.

If you are not able to participate in an Open Lab event, we encourage you to see if your question has already been answered on our FAQ: http://robott-net.eu/faq

General questions, which are not answered in the FAQ or at the Open Labs, can be sent to info@robott-net.eu, but expect a response time of several business days. Note that individual feedback on project ideas and voucher proposal drafts is only available during the Open Lab events. The e-mail service is for general questions only.

5. What happens next

ROBOTT-NET Innovation Action Panel (IAP) will first check the eligibility criteria for applications. All eligible applications will be evaluated by independent experts. The evaluation criteria and procedure are described in Annex 3 of this Guide.

The ranked applications are then reviewed by the IAP, which is responsible for verifying that all applications have received a fair evaluation and ensuring that the final collection of applications due to become voucher winners, fulfil the diversity in topic and applicant location

required by ROBOTT-NET. The final decision on which applications are accepted for voucher work, is taken by the Steering Committee (SC) with the support of the Advisory Board (AB), based on the recommendations provided by the IAP.

Once this process is completed, official notice will be sent to all individual applicants, containing information on the results of the evaluation, including the Evaluation Summary Report (ESR) with the opinion of the experts on the application and any other information decided by the entities taking part in the selection process.

Voucher work preparation

If your application is successful and a voucher is granted, ROBOTT-NET will assign one or more RTOs that will be actively involved in further planning and carrying out voucher work. Typically, this will be the local ROBOTT-NET RTO which is the best match geographically, and at least one of the other ROBOTT-NET RTOs that has the capabilities required to address the challenges described in the voucher application.

Before the actual voucher work can start, an Agreement between the voucher winning applicant and the individual ROBOTT-NET RTOs involved in the specific voucher has to be signed. The Agreement regulates the execution of voucher work, its financing, the allocation of rights, confidentiality, and dissemination obligations. The Parties agree to collaborate on the execution of the project, subject to the terms and conditions set out in the Agreement.

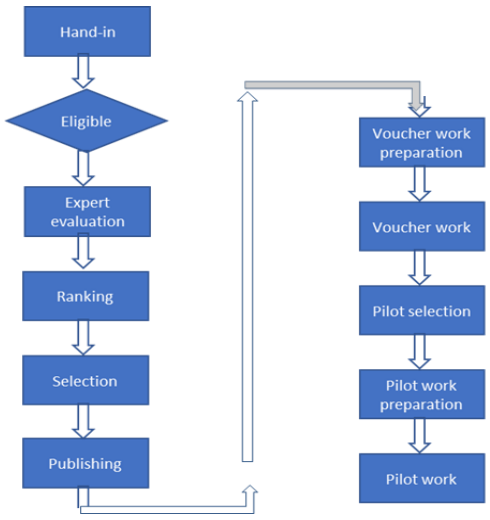
As part of the Agreement, the project tasks and responsibilities of the parties, and a plan for the execution of the tasks will be defined.

Each Party has ownership of the knowledge it generates in the course of the collaboration on the project, and knowledge generated jointly by the Parties is jointly owned by the Parties in accordance with the Parties' intellectual contribution to the knowledge.

The Parties must treat as strictly confidential all confidential information received before, during or in connection with the project so that no confidential information is disclosed or in danger of being disclosed to a third party.

It is crucial for the ROBOTT-NET consortium that results are made available to the general public, to ensure technology transfer and impact in the industry, though at all times subject to the duty of confidentiality defined in the Agreement. Company secrets and other sensitive information will be kept strictly confidential, and only general information about the new concepts introduced through voucher work should be available for public communication of the ROBOTT-NET project activities.

The process on the open call contains the following steps:



6. Glossary of terms

Entrepreneurial project --a project to develop a new technology-based business idea. It can materialise by establishing a new start-up company (entrepreneurship project) or by creating a business line within an existing SME or large company (intra-entrepreneurship project).

Voucher work --the work that you plan to do to develop and/or improve your entrepreneurial project business case. Voucher work is implemented by the entrepreneurial project team with the integrated capabilities and support of ROBOTT-NET partners (see Annex 2 for an extensive description of voucher work).

Voucher application --the application presented by a legal entity for ROBOTT-NET support through voucher work. It is composed of three parts: Part A – Administrative information; Part B – Project profile and Part C – Voucher Work.

Innovation Action Panel (IAP) --a group of experts within ROBOTT-NET, who have an understanding of both market and technical problems. The panel members are selected primarily from consortium staff alongside invited experts from external collaborators. IAP is responsible for the evaluation of vouchers and pilots (both for selection and for feedback).

Steering Committee (SC) -- has a mission to ensure that ROBOTT-NET is executed in accordance with the agreed work plans, of high scientific quality and that the results will be useful to the European robotics community from both academia and industry. The SC consists of one selected member from each of the partners.

Advisory Board (AB) --comprises a group of experts and key stakeholders (academia representatives, investors, etc.) related to ROBOTT-NET. It provides qualitative advice to the SC in various project aspects, particularly in voucher selection.

7. Annexes

Annex 1: Voucher Application template

The application is made up of the following elements:

- Part A – Administrative information (online form)
- Part B – Project profile
    - Project description: PDF file following template (maximum length 5 pages, using the font size and margins proposed in the template)
    - Pitch Deck (optional): PDF file with slide presentation of your project (max 10 slides)
    - Pitch Video (optional): Video file with recording of additional project description (maximum duration 8 minutes)
- Part C – Voucher Work: PDF file following template (maximum length 3 pages, using the font size and margins proposed in the template)

The template file can be downloaded from the ROBOTT-NET website, for the text of Parts B and C. Please, use the template:
http://robott-net.eu/files/Template_for_voucher_application_PART_B_and_C.docx

Annex 2: Voucher work

Voucher work to consolidate your business case

The first step in developing an entrepreneurial project or business idea is to have a convincing business case that captures the motivations, reasoning and justification to carry it out. The business case is not a static document or presentation. On the contrary, it evolves with your project as it matures and you dissipate uncertainty or risks from it.

The objective of voucher work in ROBOTT-NET is to help you to develop and/or improve your project business case. To do so, ROBOTT-NET makes available to your project the aggregated capabilities of four leading European RTOs to advance it in the direction of market exploitation.

Part B of voucher application tells us about your project. In fact, Part B constitutes the current status of your business case. It tells us what problems you are addressing (customer problem), who has the problem (market) and how you are proposing to solve them (value proposition). It also tells us why the customers should choose your solution (competitive advantage), how you plan to make the business profitable and sustainable (profitability and business model) and about you and your partners capabilities to face the project (team).

All this is what you know already about your project… but looking into the future the important part is what you still do not know. In other words, what are the assumptions or hypothesis that you are making and that you need to validate to advance with your business idea? These not-yet-validated hypotheses constitute your project risks.

We also ask you to tell us about the identified risks in Part B (Risks section), but most important is what you plan to do about them. In Part C we ask you to capture the plan to create value in your entrepreneurial project, reducing risk. The value creation roadmap is a work-plan to address those risks, giving more priority to those that are at the basis of your project. ROBOTT-NET helps you to carry out this work-plan through voucher work.

How can ROBOTT-NET help you with voucher work?

Voucher work helps you to dissipate risks and validate your hypothesis by considering issues related to the value proposition (product / technology), the market and the partnership to advance your entrepreneurial project:

Value proposition

- Technological due diligence: developing small experiments with (part of) the technology to validate that it actually fulfils the performance claims, assessing functional advantage with respect to competing technologies and their evolution.
- Proof-of-concept mock up: Developing a minimum prototype to check viability of key aspects of the technology.
- Use case: Designing and documenting of the process flow, showing the usage of the technology/product and the role of actors involved.

Market

- Market analysis: market segmentation, market evolution foresight and market sizing to develop a well-founded and convincing market strategy.
- Competitive position analysis: Assessing competitive advantage, market positioning with respect to competition. Strategy to develop and sustain competitive advantage (patenting and other forms of protection).
- Market validation: Developing opportunities to meet with sectorial representatives, potential customers and collaborators, with the objective to explore applications and assess the value perceived by the market.

Partnership

- Investors and funding: Developing investor pitch and providing opportunities to present and discuss the project and generate synergies with business angels and venture capital or corporate venture investors.
- Collaborators (integrators, providers): Developing opportunities to find and interact with potential collaborating companies as providers or integrators.
- Partners and team members. Developing opportunities to meet with participants from other projects, potential partners and team members to share views and engage them in your project initiative.

Aggregated ROBOTT-NET capabilities

The four ROBOTT-NET partners join their technological, sectorial market knowledge and infrastructure capabilities to create a unique pan-European offering for your project. These capabilities include:

Technological capabilities:

- Systems Development (systems engineering, system architecture, system design, modelling & knowledge eng., system integration, systems of systems)
- Human Robot Interaction (human-machine interface, safety, human-robot collaboration, robot co-working, ensuring productivity profit gains)
- Mechatronics (actuators, control, sensors, communications, materials, power supply and management, mechanical systems)
- Perception (sensing, interpretation)
- Navigation (motion planning, mapping, localisation) and Human robot interaction & navigation
- Cognition (natural interaction, cognitive architectures, action planning, knowledge representation & reasoning, learning, development & adaptation)
- Mobile robotics
- Flexible robotics (making de-palletising easy)
- Robot automatisation (with rewards in lean, quality and profitable processes)

Sectorial market applications capabilities

- Aerospace industry
- Automotive industry (body in white, trim & final, powertrain)
- Food industries (incl. bakery)
- End of line systems (packaging/palletising)
- Recycling industry
- Agricultural industry
- General industry
- Process control systems (chemical/pharma/oil & gas)
- Logistics systems (warehouse/post/airports)

Infrastructure capabilities

- Large workshops suitable for testing industrial lines and machining processes both in Donostia-San Sebastian (Spain) 2400m^2 and in Montpelier (France) 1000m^2.
- Collaborative robotics lab: workshop for special robotic implementations (340m^2) suitable for programming, testing and validation trialling of vision systems and the collaborative robots before further trials.
- ScanLab, Sensor Technology Lab: Computer vision development and experimentation within material characterisation, object recognition and classification with sensor fusion. ScanLab is highly useful for initial evaluation of potential projects in development (both research and industrial). ScanLab is a platform for future sorting, handling and object recognition technologies.

Annex 3: Evaluation criteria and evaluation process

Expert evaluators

The voucher applications will be assessed by expert evaluators. These evaluators will have expertise in both robot application business and in robot technology. Each voucher application will be assessed by at least two different evaluators.

The assignment of evaluators to applications is done on the basis of the field of expertise, so that the evaluator gets applications that lie in his/her field of expertise. (The evaluator may decide to indicate whether he/she finds him/herself eligible to review the proposal at hand, after skimming through it).

The whole evaluation process follows these principles:

- Independence: The evaluation must be done with impartiality on its merits, irrespective of the origin or identity of the applicants. Evaluators sign a declaration of conflict of interest saying that they do not have any interest or benefit in the evaluated applications.
- Confidentiality: Evaluators are kept anonymous (their identity is kept unknown to the applicants) and they also sign a confidentiality declaration with the commitment of not revealing to any third party any details of the application, neither during the evaluation, nor afterwards.
- Fairness: Each application is evaluated by at least two different evaluators to bring more fairness to the process.

Eligibility criteria

Once the call is closed, the ROBOTT-NET Innovation Action Panel will first check the eligibility criteria for applications.

Eligibility criteria assess that all compulsory requirements are fulfilled by the application, such as:

1. Place of establishment of legal entity: The legal entity requiring the voucher shall be established in a Member State or an Associated Country. There is no limit on the size or nature of legal entity.
2. Application within deadline: The application must be submitted within the deadline established. No applications will be accepted after the deadline has expired.
3. Relevance to the call: The application addresses at least one of the challenges published in the call.

Non eligible applications are not evaluated and this circumstance is communicated to the applicants.

Evaluation form

Each application is evaluated according to the following seven criteria. Note that specific explanations for robot developers and end-users are provided for criteria 1 to 4.

	Criteria	Explanation	Relevant VA section
1	Market	Is the problem clearly described and quantified? Is the market properly characterised? Are channels to reach the market identified? Are market risks understood? *For robot developers: How are market trends addressed?* *For end-users: Is evidence of market need provided?*	Part B, Sections 1, 3, 6
2	Technology	To what extent the proposed technological solution / value proposition addressed the customer problem? Is there evidence? Are technology risks understood? *For robot developers: Is the technology mature enough?* *For end-users: Are required technologies validations/ adaptations / integration properly identified?*	Part B, Sections 2, 6
3	Profitability	Is it clearly stated how to economically sustain and grow the business? Is there evidence that the business is a profitable one (income higher than costs)? Are profitability risks understood? *For robot developers: Are maturation and production costs properly considered?* *For end-users: Is there evidence of the price that the market is ready to pay?*	Part B, Sections 4, 8, 6
4	Competitive advantage	Is the innovation providing a competitive advantage w.r.t competitors? Can it be sustained (e.g. through protecting technology)? Are risks related to competition understood? *For robot developers: Is technology patented / protected to create entry barriers?* *For end-users: How relevant is the competitive advantage?*	Part B, Sections 5, 6 Innovation, protection,
5	Team	Are there the necessary competencies, capabilities and commitment level in the promoter team? Have they established the appropriate partnerships to develop the business? Are risks related to the team understood?	Part B, Sections Points 7, 6
6	Work implementation	Are the identified priorities and roadmap milestones sound with respect to the risk mitigation/avoidance to create value? Is the voucher work proposed coherent with the objectives? What is the level of European collaboration in voucher work?	Part C Section 1, 2, 3,
7	Impact	To what extent the impact is achievable? What level of impact in terms of return of investment and economic value creation? What level of impact in terms of European / global dimension of the business?	Part C Section 1, 2, 4

Criteria 1 to 5 refer to Part B of the proposal (the project profile) and account for 50% of the overall score weight. Criteria 6 and 7 refer to Part C of the proposal (the voucher work) and account for another 50% of the overall score weight.

For each criterion, the evaluator provides a score based on the following scale:

- ***0 Fail*** *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.*

For a proposal to be considered for selection, the score has to pass a threshold of 3 out of 5 in both criteria 6 and 7 (the voucher work). There is no threshold for criteria 1 to 5, since no minimum score is required for the project profile. Any project is potentially good for selection as long as the voucher work is sound and demonstrates high impact.

Although the criteria for evaluation are the same for all applications (independently of application type "robot developer" or "end user"), different thresholds and weights apply, as the following scoring table shows:

	Criteria	Threshold	Weight	Weighted score
1	Market	-	10%	WS1 = S1*W1
2	Technology	-	10%	WS2 = S2*W2
3	Profitability	-	10%	WS3 = S3*W3
4	Competitive advantage	-	10%	WS4 = S4*W4
5	Team	-	10%	WS5 = S5*W5
6	Work implementation	3	15%	WS6 = S6*W6
7	Impact	3	35%	WS7 = S7*W7
	Overall score	-		WS1+WS2+WS3+WS4+WS5+WS6+WS7

Application ranking and selection

Once all the applications have been evaluated, those that are above the threshold are ranked according to their overall score. If there are doubts with the ranking of any specific application, additional reviews by independent experts can be required.

This ranking is then analysed, taking into account additional criteria to ensure a portfolio of vouchers covering as complete a range as possible of diverse challenges, type of applications, and best representation of the most significant needs in European regions, maximising European impact. In particular, the following balancing criteria used:

- Balance across European countries/regions
- Balance among challenges
- Balance among developers and users
- Favouring SMEs and start-ups whenever two applications are in the same conditions.

The panel's final selection of a satisfactory application line-up, together with the expert evaluations and any additional comments, is presented to the Steering Committee, which has the final decision on winning voucher applications, as the deciding entity of ROBOTT-NET.