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List of acronyms

IP	Intellectual Property
NCCR	National Center of Competence in Research
NDA	Non-Disclosure Agreement
TAP	Trans-National Access Panel
TTTC	TERRINet Technology Transfer Committee
TTO	Technology Transfer Office

Executive Summary

This document describes the role of the TERRINet Technology Transfer Committee (TTTC) to foster the potential for innovation and technology transfer, its role in promoting interactions with industry, and the rules of participation of industrial partners in TERRINet activities. TTTC has taken its decisions, in a democratic manner with one vote per partner, i.e. per corresponding member of TTTC, to setup the rules of participation and the possible application of fees for use of research infrastructures by industrial researchers. To leverage the existing initiatives and programs in each project partner institution, TTTC has collected valuable information from each project partner institution, including startup assistance and grant opportunities, patent preparation, advice, and submission. These valuable information will be reflected on the TERRINet website selectively, to assist and guide interested researchers and attract industrial stakeholders. Furthermore, TTTC has prioritized participation in various academic and industrial events in national and international scales. Some of these events will be in collaboration with EUMarineRobots, H2020 project within infrastructures framework.

Fostering the potential for innovation and technology transfer

Task 4.1: Fostering the potential for innovation and technology transfer.

One of the goals of TTTC is to foster the potential for innovation and technology transfer. With that purpose, the TTTC has collected valuable information from each project partner institution. The collected information from each project partner is divided into four categories:

- Category 1. All the activities related to assistance for startup creation that is already available and established at the partner institution. Activities include, but not limited to, coaching possibilities, review application for spinoffs, and startup grant opportunities.
- Category 2. All the activities related to preparation, advice, and submission of patents. TTTC will direct the interested researchers in Intellectual Property (IP) protection to specialized organizations at institution or national level.
- Category 3. All the local and international events that the project partner is planning to attend. This include local events, workshops, or talks that can be leveraged to promote TERRINet and more importantly to foster innovation and engage with industry. The most important international events are summarized in the last section of this document "Promoting TERRINet at local and international events". Future events will be added to the TERRINet website as soon as they are confirmed.
- Category 4. All the activities related to industrial outreach. For example, through current initiatives such as Technology Transfer Office (TTO) available at each project partner institution.

This valuable information will be reflected on the TERRINet website, in June 2018, and filtered/sorted geographically, chronologically, and categorically. The filtering and sorting is done in such a way that each of the external stakeholders will see only the relevant events or information, and will not be overwhelmed with too much irrelevant information on the website. For example, an academic researcher from France who seeks advice to file a patent will be shown patent assistance, advice, and filing information within France and directed to TTTC members in LAAS-CNRS and CEA for additional needed assistance. Whereas, an Italian researcher looking for startup grant opportunities, will be shown European-wide and Italian startup grant opportunities. In this regards, each TTTC member will be the local contact person for the regional information reflected on the TERRINet website, e.g. to provide further assistance with available startup grants opportunities available at the project partner institution, guidance for patent filing, or get in contact during one of the confirmed events.

Regulations for the access of industrial partners to the TERRINet facilities

Task 4.2: Enhancing the use of research infrastructures by industrial researchers.

One of the goals of TTTC is to promote open infrastructures of TERRINet for attracting researchers from industry, SMEs, and startups. Considering the available budget and with the vision to come up with access rules that make this a sustainable system for long term, TTTC organized a vote to decide on three proposed solutions (depicted in Table 1) for access of industrial partners.

Proposed Solution	Description
Solution 1	No access fees will be imposed for industrial partners. Approved applicants will get financial support from TERRINet for travel and accommodation (i.e. they are treated similarly to academic partners).
Solution 2	No access fees will be imposed for industrial partners. But, approved applicants should provide self-support for travel and accommodation.
Solution 3	Approved applicants should provide self-support for travel and accommodation. Also, access fees for industrial partners will be imposed (amount to be determined).

Table 1: Proposed solutions on the type of industrial partners access to TERRINet infrastructures and facilities.

Each member of the TTTC gave a score (1,2, or 3 from least preferred to most preferred) to each proposed solution, i.e. sorting the solutions from least preferred to most preferred and assigning scores of 1,2, and 3 accordingly. To be fair, voting was limited to one vote per partner institution. Table 2 depicts the result of the voting.

Proposed Solution	Corresponding score of voting
Solution 1	22
Solution 2	26
Solution 3	18

Table 2: Result of the voting on proposed solutions depicted in Table1, with 11 votes out of 13 project partner institutions.

The voting result rules out solution 3, which imposes access fees. Since solution 1 and 2 have the most scores, TTTC decided not to impose any access fees for industrial partners. Consequently, TTTC chooses solution 2 as the final favourable solution for this type of access to TERRINet infrastructures. But, to attract more researchers from industrial partners TTTC considers solution 1 as a complement to support startups and small size SMEs (i.e. including financial support from TERRINet for travel and accommodation). The process and the conditions to choose applications from industrial partners will be the same as academic researchers, but with consideration of the following specific regulations.

- Applicants will be asked in open calls to mark if they need financial support for accommodation and travel. Applicants should provide detailed arguments if asking for additional support for travel and accommodation. Providing financial support would then be evaluated case by case by the applications evaluating committee. Notice that requesting for financial support will not affect the application process to grant free access.
- After the call is closed, applications from academia and industry will be reviewed by Trans-National Access Panel (TAP) reviewers and TTTC reviewers, respectively. TTTC will review industrial applications and consider one of the three possible outcomes for each application, rejected, accepted, or accepted with financial support.
- The TERRINet facilities will be provided as they are presented in each call, and there is not much budget and manpower to change and modify them for specific needs.
- If the applicant requests modification to the current facility, only small modifications (including equipments upgrade and man-hour investment) will be included in the free access. But, large modifications should be paid for to the local TERRINet partner that is owning and maintain the facility. The amount and the arrangement of the payment has to be decided between the applicant and the local TERRINet partner. These applications will be handled case by case by applications evaluating committee.
- In the first year of the open calls, we will have feedback forms and monitor the situation to see if there is a need for more modifications or upgrades of infrastructure, within the budget dedicated to maintain the infrastructures.
- If the experiment from the industrial applicant becomes more demanding and turns into a project with a need for more consistent access, local arrangement out of the TERRINet project has to be defined between the two parties (again to be evaluated case by case).
- If higher-level collaboration is requested from applicants (for instance, joint research and development), it will be managed on a case by case basis for each partner within the framework of usual organization process, including fees, joint result Intellectual property rights, and Non-Disclosure Agreements (NDAs) for sensitive data/experiments.

Promoting TERRINet at local and international events

Task 4.3: Promoting and improving interactions and communication to engage the support of a large number of external stakeholders

The TTTC's mission is to create strong, mutually beneficial links between TERRINet and industry, with a particular focus on start-ups and SMEs. In particular, its objectives are (1) to promote technology transfer from academic research to innovation in industry, (2) to support small start-ups and SMEs by offering access to state-of-the-art experimental facilities, and (3) to create links to established relevant robotics industries to benefit from their expertise, their robotics technologies, and possibly their financial sponsorship.

To this end, TTTC tries to keep a right balance between academic, big industrial, SME, and startup researchers. Researchers within each group are present in some specific events. Accordingly, TTTC diversifies its presence in local and international events to reach a larger group of researchers coming from all above research entities. These efforts will be reflected on the TERRINet website, in June 2018, and filtered/sorted geographically, chronologically, and categorically. The filtering and sorting is done in such a way that each of the external stakeholders will see only the relevant (e.g. within a country or dedicated to industry or academia) events or information, and will not be overwhelmed with too much irrelevant information on the website. For example, a robotic SME from Spain willing to meet with TERRINet will be shown events where TERRINet participates in Spain. TTTC initiatives are summarized in the following action items.

Leveraging Robotic communities to disseminating TERRINet

- Send out open calls and promotional emails to the robotics community mailing lists, including, Robotics worldwide, EU-Robotics, Netherland regional robotics ecosystem (LEO Center for Service Robotics), and robotic related industry players from the EU-13 region.
- TTTC will contact local innovation hubs and Digital innovation hubs to share TERRINet information with their audience. This will be an influential existing instrument to reach local researchers and SMEs. These hubs include, but not limited to, are:
 - the European Digital Innovation Hub on Healthcare Robotics (DIH-HERO) coordinated by Stefano Stramigioli and Iddo Bante from University of Twente,
 - European digital innovation hub on Robotics for Inspection and Maintenance (DIH-RIMA) coordinated by Christophe Leroux from CEA.
- TTTC will leverage databases of SMEs from ECHORD++, and ESMERA projects to disseminate TERRINet and attract SMEs in open calls to use available infrastructures in TERRINet.

Participating in local and international industrial exhibitions and events

- TTTC wants to participate in events where small SMEs are attending and try to promote TERRINet more to small players like startups and SMEs and not only at big events where only big players and companies might be attending. Thus, TERRINet focuses on reaching SMEs at local events, which are more affordable and tangible for them. TERRINet wants to leverage these local events not only to highlight local infrastructures available in the same country, but also to promote that there are more TERRINet infrastructures available across Europe without any access fees (within the program framework of TERRINet). Events targeted at the moment, but not limited to, are:
 - Swiss robotics industry day, November 1, 2018, at EPFL, Swiss Tech Convention Center, Lausanne, Switzerland. As part of collaboration with NCCR robotics switzerland. TERRINet will have a booth at the event to promote the project and get in contact with swiss SMEs, startups and industrial players.
 - Entrepreneurial Day, June 21, 2018, at University of Twente, Twente, Netherlands.
 - The TERRINet project has been promoted through the French Group of Research GDR to invite academic partners to apply for working stays in the sites of the different partners.
 - The TERRINet project will be a part of the communication of the head of the Contracts and Partnership service of LAAS-CNRS during the LAAS-CNRS 50 years anniversary days (June 2018) where industrial partners will be invited.
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- TERRINet was present at Hannover Messe, April 2018 through joint booths with Dutch booth, University of Twente, and Swiss innovation booth, Swiss National Center of Competence in Research (NCCR) Robotics.
- TERRINet, through KIT, will be present at Automatica and CeBIT, in June 2018. TERRINet will contact exhibitors through the shared mailing list, and give a 5-10 minutes presentation at the exhibition to promote what TERRINet has to offer.

Participating in international robotics conferences and forums

- TERRINet will be present at the top two main robotics conferences ICRA 2018, Brisbane, Australia, and IROS 2018, Madrid, Spain. At IROS 2018, TERRINet will participate in a session organized by Cécile Huet , promoting EU Projects offering services.
- TERRINet was present at ERF 2018 in two sessions.
 - H2020 new Robotics projects: To officially present the TERRINet Project to the EURobotics community.
 - EU Projects offering services to the Robotics community.
- TERRINet aims to participate in ERF 2019 too, to promote and disseminate the project to the EURobotics community.

Synergies with H2020 infrastructures framework projects

- TERRINet and EUMarineRobots, both H2020 projects within infrastructures framework, are collaborating to promote free access to European research infrastructures network. The first synergy started in May 18, 2018, by sending an application to have a shared booth and networking session for ESMERA, TERRINET, and EUMarineRobots projects at ICT 2018, which will be in Vienna, 4-6 December 2018. The common point of these projects is to share their infrastructures with the other researchers from the academia and the industry.
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