

Concept note: Technology Transfer Alliance Collaboration Platform

Introduction to the Technology Transfer Alliance (TTA)

The TTA is a non-for-profit network of universities interested in:

- Having an impact on development of the societies in which they exist;
- Problem-oriented, project-driven learning with a focus on innovation and entrepreneurship;
- Offering students and faculty members opportunities to contribute to important projects for academic credit.

The TTA supports members in:

- Internal Academic development of pedagogical models and examination methods for problem-oriented, project-driven learning (Guidelines to Challenge Driven education);
- External networking with external stakeholders to define, fund and implement projects.

Motivation of the proposal

The TTA Collaboration Platform is intended to be a web-based platform containing an integrated set of tools, applications, data repositories that are accessed via a portal: the TTA Portal. The motivation of developing this platform is to support collaboration and training and to foster education among the partners, sharing of all sorts of resources and dissemination of results. The platform will allow each partner to submit content such as project proposals, project documents, news update, information sharing via content lists and other kinds of content such as video or other multi-media contents that cover in a secure manner. All collaborating partners will have access to contents through proper authentication mechanisms based on Identity Federations and fine grained access control and will be able to edit contents easily through web pages (content management system). Some of the events will include seminars, webinars and presentations. The platform will also incorporate social media including Twitter, Facebook and LinkedIn links.

The TTA portal serves as an entry point for repository and other partner services that can be used by all the partners. Ultimately, the platform will evolve into a full blown Science Gateway as content and applications will be developed that can be utilized by others beyond the existing partners mentioned in this proposal.

Implementation of the TTA Collaboration Platform

The TTA Collaboration Platform will be implemented according to three logic layers, as described in the figure 1 on the next page.

The 1st layer is a virtualized hardware infrastructure composed by:

- A server installed with the award-winner Liferay (www.liferay.com) enterprise portal framework and the Catania Science Gateway Framework (www.catania-science-gateways.it) which allows to seamlessly interface Distributed Computing Infrastructures (Grid, Clouds, HPC dedicated clusters, etc.), both in Africa and in the rest of the world;
- A server installed with the event management software Indico (<http://indico-software.org/>) which is a web application to schedule and organize events, from simple lectures to complex meetings, workshops and conferences with sessions and contributions; the tool also includes an advanced user delegation mechanism, allow paper reviewing, archival of conference information and electronic proceedings.
- A server installed with the “de facto” standard mailing list manager Mailman (www.list.org).

All the services composing the 1st layer are open source, based on standards and will belong to the

single domain tta-portal.org.

The 2nd layer is composed by the services' administration team.

The 3rd layer is composed by the editorial board of the Portal and by the developers of applications to be integrated in the Science Gateway, both already existing and developed by TTA projects.

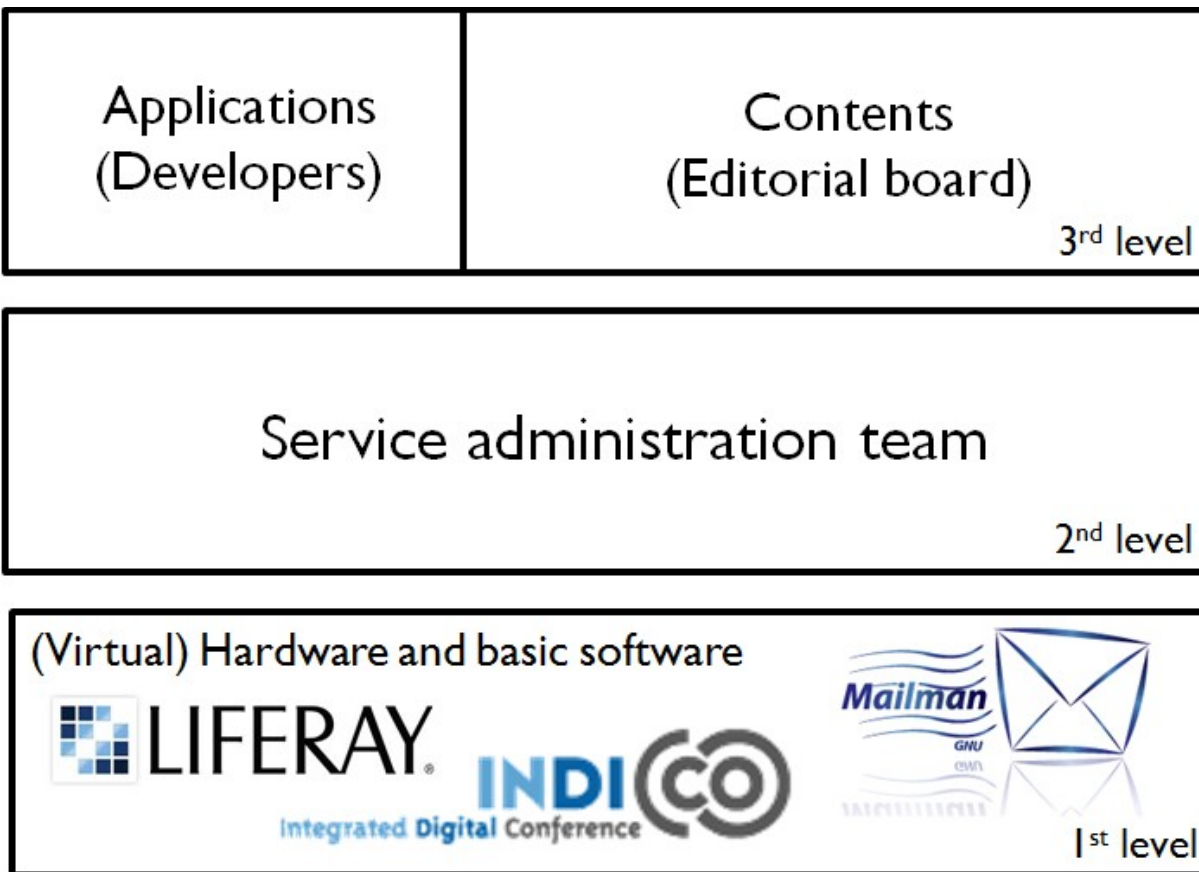


Figure 1. Logical schema of the TTA collaboration platform

Indicative budget

A budget for the cost of implementing the three layers of TTA portal. For the initial couple of years, KTH covers the cost of hosting the virtual machine. Two half time developers at distributed location, preferably from African universities. The initial estimate of the cost is 800USD per month. In addition, volunteers from participating universities help in the development and maintaining of the portal.

Applying organization

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Collaborating partners and their roles in the project (max 10 lines each)

The partners commit to nominating a member of the editorial board, a resource responsible for updating own content on-line on a regular basis, and a member of the service administration team that can contribute both to the maintenance and development of the tta portal platform on a fraction of a full time equivalent.

Aalto University

Aalto University was established in 2010 following a merger of the Helsinki University of Technology, the Helsinki School of Economics, and the University of Art and Design Helsinki.

To that end, Aalto University is considered to be a place of learning and research where science and arts meet technology and business. The mission of Aalto University is to strive towards a better world through top-quality research, interdisciplinary collaboration, pioneering education, surpassing traditional boundaries, and enabling renewal. At a national level, the mission of the University is to support Finland's success and contribute to Finnish society, its internationalization and competitiveness, and to promote the welfare of its people. Currently the university constitutes of six schools with over 20,000 students and 5,000 staff members. There are a wide variety of Bachelor and Masters level degrees awarded at Aalto University. There are also doctoral programmes in all the relevant fields of study at Aalto.

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Addis Ababa Institute of Technology (AAiT) (tentative)

Addis Ababa Institute of Technology (AAiT), former Faculty of Technology in Addis Ababa University, is one of the top level engineering institutes in Ethiopia. The AAiT currently consists of four Schools: Electrical and Computer Engineering, Mechanical Engineering, Chemical Engineering and Civil Engineering with a student body of about 6000 students; and three Centers of Energy Technology, Biomedical Engineering, Railway Engineering. Within the Schools, we conduct 4 undergraduate programs with 10 different areas of specialization. The AAiT is also complemented by three Centers of Excellence related to water, energy and logistics. We currently have 33 postgraduate programs with more than 500 enrolled students. Several of the Master's programs are also available within our extension program and 5 of these are delivered via video links from the IIT Delhi in India and KTH in Sweden. Recently, the AAiT selected as Leader university of Electrical & IT cluster in Home grown PG Program supported by Ethiopian government, and Organizing institution of IEEE AFRICON 2015 Conference at Addis Ababa. The AAiT is also proposing institution of the next TTA project on Model Curricula for African University Entrepreneurship.

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Ardhi University

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Brunel University (tentative)

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Dar es Salaam Institute of Technology (DIT)

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Eko-Konnect:

Eko-Konnect is a sub-cluster of the Nigerian Research and Education Network (ngREN). Its aims to support network connectivity and collaboration between education and research organisations in the Lagos area of Nigeria as part of wider efforts to establish a functional and sustainable National Research and Education Network (NREN). It was established in December 2009 in an initiative led by the University of Lagos to exploit the geographical proximity to sea cables and telecommunication companies to secure high speed and affordable Internet connectivity for the research and education

community. Eko-Konnect can leverage its student and academic staff resources to participate in the service administration and content and application creation of the TTA Portal (Science Gateway).

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INFN Catania:

The Italian National Institute of Nuclear Physics (INFN - www.infn.it) was founded in 1951 and is a governmental research organisation which promotes, co-ordinates and funds nuclear, particle and high-energy physics research. INFN also runs a country wide Distributed Computing Infrastructure for e-Science and, since the year 2000, takes part as stakeholder (often as coordinator) in many EC co-funded e-Infrastructure projects.

INFN Catania is one of the Divisions of INFN and it has a long experience in software services development for e-Infrastructures and in e-Infrastructure training and education delivery.

INFN Catania is the home of the GILDA t-Infrastructure (<http://gilda.ct.infn.it>) and of the Catania Science Gateway Framework (www.catania-science-gateways.it).

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Karolinska Institutet (tentative)

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KTH

KTH is a Technical University with a longstanding experience of problem-oriented, project-driven learning based on real projects with external project owners and is also the initiator of TTA. KTH has organized two TTA workshops, February 2013 and June 2014, with support from SPIDER, authored a book containing guidelines for Challenge Driven Learning and started the development of a Science Gateway based portal for collaboration supported by INFN Catania, currently available at <http://tta-portal.misc.kth.se>.

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Makerere University

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Muhumbili University of Health and Allied Sciences (MUHAS)

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Obafemi Awolowo University - OsunREN

OsunREN is the Research and Education Network in Osun State, Nigeria. It is managed by the Information Technology and Communication Unit (INTECU) of Obafemi Awolowo University Ile-Ife, Nigeria. OsunREN is a subset and regional research and education network operating under the Nigeria Research and education network (NREN). It is responsible on a regional basis for the provision of data communications networks and services to the research and education community of its University, its state, neighboring states and the country at large. So many Intra and inter-disciplinary professions/fields are being brought together under one umbrella to provide solutions to societal problems in the country through OsunREN. OsunREN can render services in the areas of service administration and contents (editorial board).

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SomaliREN (tentative)

SomaliREN is a non-profit organization whose primary goal is to promote research and quality higher

education among Somalis. It is a network whose members include the major Somali higher education institutions and exists for the sole purpose of bringing them together to collaborate on issues that matter not only to them but to the Somali community at large.

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University of Lagos

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University of Rwanda (tentative)

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University of Turku

University of Turku is one of the oldest and second largest universities in Finland. It has 7 faculties and 11 independent units. There are over 20,000 students and 3,300 staff members. The University of Turku cooperates globally through numerous university networks, programmes and projects. Department of Information Technology (IT) is a scientific research and education unit in University of Turku covering the ICT field. IT department does basic and applied research and gives higher research based education while working in active co-operation with the society. Our computer science and bioinformatics research focuses on solving computationally complex problems and developing computational methods for such problems. Computer science has a strong algorithmic research tradition, which is applied to emerging bio and health informatics as well as computation intelligence related to big data problems. Our research in engineering is based on a body of wide-ranging studies in software engineering, communications technology and embedded electronics. The research in information technology focuses especially on developing methods, technological infrastructure and cybersecurity required for providing services for the information society. Engineering education does not only provide students with a broad technical competence but also with a professional profile based on the strengths of the multi-disciplinary University of Turku and good working life readiness. Internationality and know-how in the future's multicultural project environments is emphasized in engineering education. In the department, technical competence is supported by business, innovation and entrepreneurial knowledge as well as studies in productization and worklife readiness. The IT department is committed to participate actively in the development of Entrepreneurship curricula targeted for African environment.

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