



**UNIVERSITÀ
DEGLI STUDI
DI TRIESTE**

TAXONOMY CATEGORIES TO BE OUTLINED IN THE FACTSHEETS

HIGHER EDUCATION AND INSTITUTIONAL CAPACITY BUILDING

- Scholarships
- Support to local universities
- Transnational education
- Capacity building

RESEARCH FOR LOCAL DEVELOPMENT

- Rural development, land management, agrifood and food supply chains
- Health, water and hygiene, One Health
- Sustainable Energy, environment and natural resource management
- Entrepreneurial and industrial development for local prosperity
- Cultural heritage and sustainable tourism
- Social Sciences
- Other

SCIENCE DIPLOMACY AND TERRITORIAL COOPERATION

- National networks
- International networks

SDGs TO COPY AND PASTE





**UNIVERSITÀ
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DESCRIPTION OF THE EXPERTISE OF THE UNIVERSITY ON JOINT PROJECTS AND RELATIONSHIPS WITH AFRICA

The University of Trieste is member of two important joint projects which imply specific investments in terms of scholarships, support to local universities, transnational education and capacity building, namely the PFK (Partnership for Knowledge) initiative funded by AICS and the program devoted to the support of the Somali National University.

Concerning the former, the University of Trieste is part of the platform focused on Water, Sanitation and Good Hygiene (WASH) with its Department of Mathematics and Geoscience in the frontline.

As for the latter, the Department which is most involved is that of Economics, Statistics and Mathematics.

In addition, the University of Trieste is also member of a number of national and international networks focused on cooperation and science diplomacy, namely CUCS (Comitato Universitario per la Cooperazione allo Sviluppo), SAR (Scholars at Risk); RUS (Rete delle Università per lo sviluppo sostenibile) and RUNIPACE (Rete delle Università per la pace).

Finally, the University of Trieste is member of the T4EU (Transfer for Europe) University Alliance, which has transnational education as one of its main objectives, also in terms of North-South cooperation ([Transform4Europe \(units.it\)](https://units.it/transform4europe))



**UNIVERSITÀ
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Category:

HIGHER EDUCATION
SUPPORT TO LOCAL
UNIVERSITIES



UNS - Supporting the Somali National University

Department of Economic sciences, Business,
Mathematics and Statistics "Guido de Finetti"

Geographical area:
Africa – Somalia

Donor(s):
AICS

Project duration:
2012 - ongoing

BRIEF PROJECT DESCRIPTION The University of Trieste has been engaged in various programs to support the Somali National University since 2012 in partnership with several other Italian universities, with Milan Polytechnic being currently the lead partner. Over the years, there have been several interventions that have followed different phases that included: 1) the production of digital materials to enable the formation of a database of courses in English; 2) the training in Italy of the directors of the different faculties of the Somali National University and some heads of the technical administrative apparatus; and 3) the training of students who in the intentions should constitute the class of future teachers. Within this framework, the University of Trieste took charge of the whole part relating to the Faculty of Economics. The project leader at UNITS is Prof. Giuseppe Borruso.



Proff. Borruso, Zecchini and Daniel's with the four students

PARTNERS

A network of Italian
Universities
AICS
MAECI

RESULTS

The first two phases of the program were successfully completed. In addition to sending digital course materials required in the first phase, in A.Y. 2018/19 the department hosted the director of the Faculty of Economics of Somali National University for a period of 3 months.

The department hosted four students, three of whom have successfully completed their Master's Degree in Economics of Production Sectors and International Markets. Currently UNITS is member of the scientific council of the 5th phase of the project, led by Milan Polytechnic.

FUTURE PROSPECTS

Potential replicability of the project: **(yes)**

Other potential partner countries: All low income country identified by AICS

Academic coordinator
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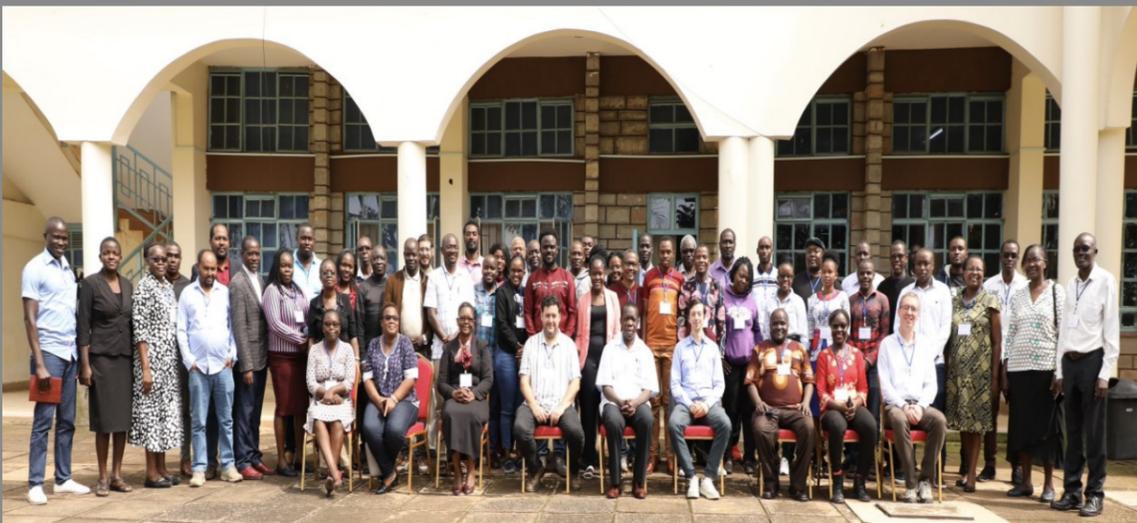
HIGHER EDUCATION
- Transnational education
- Capacity building



KNOWLEDGE IS POWER PROMOTING SCIENTIFIC HIGHER EDUCATION IN AFRICA VIA STACK

Geographical area:
Africa - Kenya
Donor(s):
Swiss National Science
Foundation; IDEMS
International; SAMI
Project duration:
2021-2023

BRIEF PROJECT DESCRIPTION In Africa the teaching of Mathematics and its recent applications are particularly problematic and far from the standards required. In Kenya, university classes are composed of 500-1200 students assigned to a single teacher. Lessons, exercises and examination, feedback to students, must be adapted to each situation at the expense of the quality of education. The workload keeps faculty staff away from research and increases the gap with developed countries. The Project uses the STACK technology within Moodle environment for enhancing interactive learning that fits well in large classes. Exercises are randomized by the software and students receive targeted feedback throughout the semester so they can better focus on their studies. New contents are co-developed by a team composed by the University of Trieste, a Kenyan developers' enterprise (InnoDEMS) and an external team (IDEMS international): materials are tested and improved by a selected team of teachers from the University of Trieste.



in the front row the Rector and the Head of Department of Mathematics of Masinde Muliro - University for Science and Technology, the STACK author (Edinburgh University), the IDEMS International Director and the Scientific Supervisor of the University of Trieste, (Danilo Lewański)

PARTNERS

- Swiss National Science Foundation,
- Université de Genève, IDEMS International,
- INNODEMS,
- Supporting African Maths Initiatives,
- African Maths Initiatives

RESULTS

The first African STACK Conference for Undergraduate Mathematics took place at Masinde Muliro University of Science and Technology (MMUST), Kenya, from 19 to 23 June 2023 with workshops for African teaching staff for the transformation of African Undergraduate Mathematics education through STACK. A total of 66 individuals from 16 institutions participated in the conference. To date dozens of thousands students enjoy education through STACK in different African countries.

FUTURE PROSPECTS

Potential replicability of the project: **yes**

Other potential partner countries: All emerging countries

Academic coordinator
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https://stack-assessment.org/CaseStudies/2023/African_STACK_Conference_2023/
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**UNIVERSITÀ
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HIGHER EDUCATION

- Support to local universities
- Transnational education
- Capacity building



Geographical area:

Africa – Kenya, Ethiopia, Ghana, Togo, Benin, Tanzania, Rwanda, Uganda, Cameroon

Donor(s):

Swiss National Science Foundation; IDEMS International; SAMI

Project duration:

2021-2023

**MATHSCAMPS
MATHS CAMPS TO PROMOTE COMMUNITY AND
ACCESSIBLE EDUCATION AT THE HIGHSCHOOL
LEVEL**

BRIEF PROJECT DESCRIPTION There is a great gap in terms of quality and access to education between many African Countries and the global North. In Africa, Mathematics in particular is a problem both for teachers and for students; it is often considered one of the most difficult and frustrating subjects at school, while in the African world an increasing number of professional careers require mathematical skills and knowledge. Maths camp aim to demonstrate students how maths concerns essentially critical and analytical thinking, problem solving and deep understanding, as opposed to pure calculating and memorizing formulas. It also points to show, in a funny way how everyone could be good at maths and how the mathematical way of thinking can be useful in many areas of science and in everyday life. The principles that guide the camps are maths, education, empowerment, research and development of new educational resources, the use of technology, community, sustainability, and scalability.



Math camps' people

PARTNERS

- Swiss National Science Foundation,
- Université de Genève,
- IDEMS International (Innovation in Development, Education and the Mathematical Science),
- INNODEMS (Innovation In Development, Education and The Mathematical Sciences),
- Supporting African Maths Initiatives,
- African Maths Initiatives

RESULTS

During the summer residential two-week maths camps which were organized in collaboration with partners of 9 African Countries, about 40-70 high school students were involved in activities aimed at changing the negative approach of students towards mathematics.

FUTURE PROSPECTS

Potential replicability of the project: **yes**

Other potential partner countries: **All emerging countries**

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**UNIVERSITÀ
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HIGHER EDUCATION
- Support to local universities
- Transnational education
- Capacity building



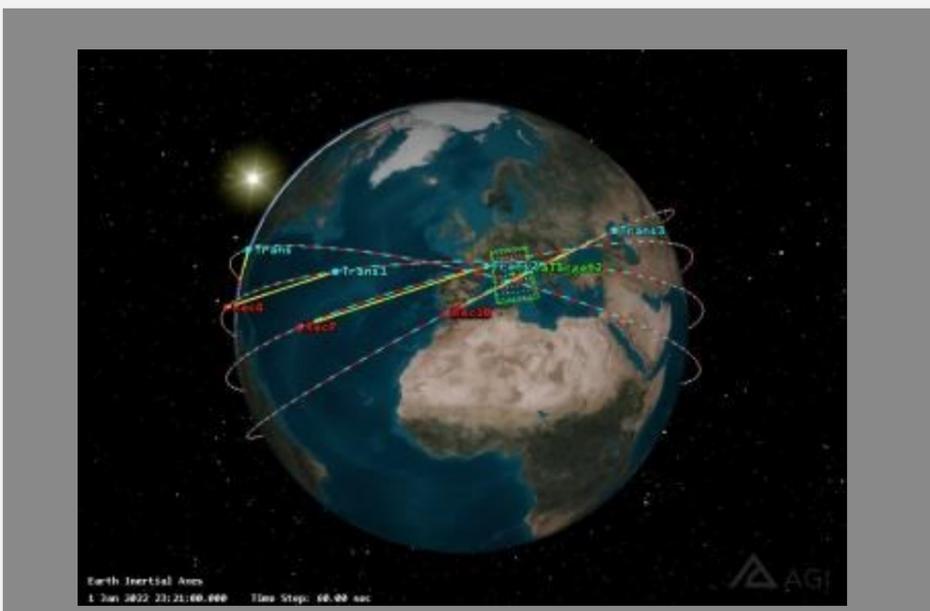
Geographical area:
East Africa – Rwanda, Kenya, Somalia

Donor(s):

Project duration:
2025-2026

SUPPORTING EDUCATION IN PHYSICS

BRIEF PROJECT DESCRIPTION In East Africa, with some exceptions apart, physics education is generally underdeveloped, also in higher education. Physics education requires laboratories and teachings that are not immediately usable in ordinary life. So, this project aimed at supporting teaching activities at INES-Ruhengeri, Rwanda. Furthermore, a group of students has been created to work on the developing of physics laboratories for African universities: the design of such laboratories has been conceived to follow three main principles: affordability, modularity, flexibility. The same team has worked on design and implementation of physics exercises for a neuroscientific survey: such survey is aimed at observing differences in physics comprehension among different methods of teaching. Physics didactics has involved an extended network of East African universities, also addressing other advanced topics such as space physics



Photo

PARTNERS

- INES-Ruhengeri, Rwanda
- Somali National University, Somalia
- some universities (Kenyatta, Masinde Muliro, Maseno) and INNODEMS, Kenya

RESULTS

The main outcome of this project consists of the networks and expertise that have been created: starting from the visiting teaching, that has been confirmed for a second year from the host university. This network of universities has made the achievement of a 70 000 EUR ERASMUS KA171 project be possible. On the inner side, a team of students and a master thesis (in collaboration with University of Bologna, Italy, and M.I.T., U.S.A.) have been developing around the effective realization of the project: thus, a first set of low-cost physics experiments has been established and the preparation of the physics exercises for the neuroscientific survey is completed.

FUTURE PROSPECTS

The next steps will move forward with the implementation of both the physics experiments and survey on the ground. In parallel, around the contacts and networks that have been created, a couple of concepts for a couple of ERASMUS+ Capacity Building (Strand 2) projects emerged, and their preparation is currently underway.

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**UNIVERSITÀ
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HIGHER EDUCATION
- Support to local universities
- Transnational education
- Capacity building



Geographical area:
Horn of Africa –
Ethiopia, Kenya,
Somalia, Somaliland

Donor(s):
University of Trieste

Project duration:
2025-2026

Climate Change, Conflicts, and Migration: The Ethiopian–Somali Corridor and the Potential Implications of Infrastructure Development

BRIEF PROJECT DESCRIPTION The Horn of Africa is highly vulnerable to the effects of climate change, where environmental phenomena such as droughts and floods act as multipliers of existing social and economic tensions. In fragile institutional contexts, these dynamics can fuel instability, localized conflict, and increased migration. However, infrastructure development—especially in transport and connectivity—may serve as a stabilizing force by enhancing access to resources and promoting resilience. Focusing on the Ethiopia–Somalia corridor, one of the region’s most fragile areas, the project explores the dual impact of climate change and infrastructure development on regional stability. While new transport and trade routes offer opportunities for connectivity and growth, they also carry risks of political tensions, exemplified by the Ethiopia–Somaliland MoU and the broader Red Sea insecurity.



Photo

PARTNERS

- Academy for Peace and Development (Somaliland), Addis Ababa University (Ethiopia), Hargeysa Cultural Center (Somaliland), Somali National University (Somalia)

RESULTS

The project led to the organization of three thematic workshops in the region: one in Hargeisa, one in Addis Ababa, and one in Mogadishu (Spring 2025). Additionally, an early-career scholars’ conference was held, bringing together PhD students from the University of Trieste and its partner institutions. Institutional agreements were also formalized with key academic partners: an Erasmus+ agreement with Addis Ababa University, a Memorandum of Understanding (MoU) with Somali National University, and ongoing negotiations for an MoU with the University of Hargeisa and an Erasmus+ partnership with the University of Nairobi.

FUTURE PROSPECTS

The next phase of the project will focus on consolidating institutional partnerships and creating a stable consortium capable of participating in both European and non-European research and capacity-building calls. Particular emphasis will be placed on promoting academic exchanges between faculty members, with the goal of decolonizing knowledge production—both in terms of the political and social issues relevant to the Global South and in relation to bottom-up climate change mitigation strategies.

Academic coordinator
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Category:

**RESEARCH FOR LOCAL
DEVELOPMENT**

- Health, water and hygiene,
One Health



RENAISSANCE PATHS FOR THE SOCIAL REINTEGRATION OF PEOPLE WITH MENTAL DISORDER

Geographical area:
Africa – Burkina Faso

Donor(s):
AICS

Project duration:
2019-2022

BRIEF PROJECT DESCRIPTION One of the most demanding challenges in developing countries is mental health. In Africa, where psychiatric services are structurally lacking and social cohesion dramatically decreasing, it is of utmost importance that due attention be paid to the issue. This project aimed at supporting and implementing the activities of the Centre Notre Dame de l'Espérance in Bobo Dioulasso, pointing at the social reintegration of people with mental disorder in the catchment area. In the framework of the project, the University of Trieste was in charge of two applied research: 1) an ethnolinguistic and anthropological investigation on the local taxonomy and epistemology regarding mental disorder, 2) the conduction of a survey on defense mechanisms, using different tools commonly used in Western countries and still to be tested in Africa (DSQ40; WHODAS; WHQOL). Aim of these research was to provide local stakeholders with a comprehensive analysis of the social context in which the Centre is based in order to let them envisage proper solutions.



View of the structures of the Centre Notre Dame de l'Espérance – Bobo Dioulasso

PARTNERS

- CVCS Gorizia
- Centre Notre Dame de L'Espérance (Bobo Dioulasso)

RESULTS

The project led to the implementation of good practices and better services for people with mental disorders in Bobo Dioulasso and, in general, in the vast catchment area of the Centre Notre Dame de l'Espérance. In particular, the ethnolinguistic and anthropological research, along with the conduction of the survey in Djula, a local language, that required an attentive translation process, and which reached more than 1000 people enabled the local stakeholders to better understand the social context and design appropriate intervention plans for the future.

FUTURE PROSPECTS

Potential replicability of the project: **yes**

Other potential partner countries: **All**

Academic coordinator
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**UNIVERSITÀ
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Category:

RESEARCH FOR LOCAL
DEVELOPMENT
- Social sciences



HAPPY CLASSROOMS PAINTING WALLS WITH EDUCATIONAL RESOURCES IN KENYA

Geographical area:
Africa – kENYA

Donor(s):
Swiss National Science
Foundation; IDEMS
International; SAMI

Project duration:
2021-2023

BRIEF PROJECT DESCRIPTION The project aims to fill the gaps in literacy and basic numeracy within the educational space of sub-Saharan Africa, by creating a supportive learning environment in primary schools, designing brighter classrooms with more resources for teaching and learning, and training teachers to deliver stimulating classes. The goal is to improve students' skills, particularly in schools that must face challenges as poor infrastructure, lack of quality educational materials, well trained teachers, and effective teaching methods, which have led to low levels of literacy and numeracy among students. Implementation of a curriculum based on skills is demanding in Kenya, in particular in schools with largely limited resources and capacity. Materials are constantly developed, and technology is used to support teaching and learning while the curriculum is gradually introduced in junior high schools. The Happy Classrooms are accompanied by a tailor-made app that teachers use to propose lessons that involve the resources available on the walls.



A HAPPY CLASSROOM

PARTNERS

- Swiss National Science Foundation,
- Université de Genève,
- IDEMS International,
- INNODEMS,
- Supporting African Maths Initiatives,
- African Maths Initiatives

RESULTS

More than 40 school rooms in Western Kenya are today Happy Classrooms. Classrooms are painted with educational resources mainly of geometry, algebra, references to everyday life and the passing of time.

FUTURE PROSPECTS

Potential replicability of the project: **yes**

Other potential partner countries: **All**

Academic coordinator
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**UNIVERSITÀ
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DI TRIESTE**

Category:

RESEARCH FOR LOCAL
DEVELOPMENT
Rural development,
land management



Operational definition of seismic risk and intervention techniques for strategic buildings: an integrated system on HPC platform

Department of Engineering and Architecture

Geographical area:
Asia - India

Donor(s):
Regione autonoma FVG

Project duration:
36 months

BRIEF PROJECT DESCRIPTION The project aimed at developing a methodology for seismic vulnerability assessment of buildings and at proposing of new regulations for seismic risk mitigation in Gujarat, India. The main objectives were the development of an advanced seismological, engineering and computational knowledge system, the implementation and adoption of best practices for seismic risk mitigation in the area, and the rehabilitation of public and strategic buildings. The reliability of seismic input was evaluated, using the integrated scientific technology service of access to specialized computational codes and implemented on HPC computational infrastructure (NDSHA methodology). The formalization of the applied methodologies and in general the approach used could serve as guidelines for the creation of a protocol to be applied also in other areas of the world.



Effects of a Earthquake in Gujarat

PARTNERS

OGS
CNR
In Gujarat:
Institute of Seismological
Research
International Institute of
Information Technology

RESULTS

Enhancement of scientific collaboration between UNITS and partner universities.
Creation of a knowledge transfer network that is not only intergenerational, but also interdisciplinary and cross-cultural.
Contribution to the growth of partner countries' science programs.

FUTURE PROSPECTS

Potential replicability of the project: **(yes)**

Other potential partner countries: where needed





**UNIVERSITÀ
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Category:

SCIENCE DIPLOMACY AND
TERRITORIAL COOPERATION

National Networks



CUCS, ECS CUCS, RUnIPACE and RUS

Geographical area:
Italy

Italian Networks recognized by CRUI and MUR

BRIEF PROJECT DESCRIPTION UNITS has been part of the CUCS network since its founding in the year 2007. The CUCS (University Committee for Development Cooperation) network constitutes a permanent working table on international cooperation issues, both academic and applied, and also provides opportunities for discussion with the world of cooperation outside the academy at the conferences it organizes every two years. Since 2022, the network has been joined by a group of young academics who have formed the ECS CUCS. Regarding the network Network of Italian Universities for Peace (RUnIPace), UNITS has been a member since 2021. The network promotes reflection on social responsibility in all disciplines, supports Peace Studies, as an interdisciplinary academic discipline, the focus on peacebuilding by peaceful means as the center of research, teaching, training and third mission activities. The RUS network, on the other hand, deals with sustainable development and has as its first goal to raise the awareness of the entire academic population on sustainability issues. It has working tables dedicated to various issues that are extremely topical.



CUCS congress - Trento 2019

PARTNERS

CRUI
MAECI

RESULTS

Thanks to the active participation in the networks' activity, UNITS strengthens its diplomatic partnerships and catches opportunities of participating in big joint initiatives, keeping a constant dialogue with MAECI, MUR and other key stakeholders.

FUTURE PROSPECTS

Potential replicability of the project: **(yes)**

- 1) <https://retecucs.it>
- 2) <https://www.runipace.org>
- 3) <https://reterus.it>

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3) Gianluigi Gallenti

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**UNIVERSITÀ
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Category:

SCIENCE DIPLOMACY AND
TERRITORIAL COOPERATION

International networks



**SAR (Scholars at Risk)
Network TWAS-SISSA-ICTP-OGS-ICGEB-UNIVERSITY OF
TRIESTE
UNHCR
UNIADRION**

Geographical area:
Non pertinent

BRIEF PROJECT DESCRIPTION Due to its border location, Trieste has always been a city open to diplomacy and international dialogue. From the scientific point of view, the territory hosts a very large number of international research centers (TWAS, ICTP; ICGEB; SISSA; OGS), with which the University constitutes a very solid network made of mutual support and scientific collaboration. Together with these entities an agreement has been signed regarding international cooperation and hosting researchers from areas of high geopolitical risk. UNITS is also a member of several international networks, including SAR (Scholars at Risk), UNHCR, UNIADRION. Finally, UNITS is a member of the European alliance T4EU - Transform for Europe - along with the universities of Saarland (Germany) Alicante (Spain) Estonian Academy of Art (Estonia); Silesia (Poland); Sofia University St Kliment Ohridski (Bulgaria); Vytautas Magnus (Lithuania); Catholic University of Portugal (Portugal); Primorska (Slovenia); Jean Monnet (France)



Founders of the SAR Italy branch of SAR International with prof. Altin for UNITS - 2019

RESULTS

(MAX 600 characters including spaces) Thanks to the active participation in the networks' activity, UNITS strengthens its diplomatic partnerships and catches opportunities of participating in big joint initiatives, keeping a constant dialogue with international stakeholders

FUTURE PROSPECTS

Potential replicability of the project: (yes)

Academic coordinators

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