AIMING HIGH - SHOOTING HIGH

COST Project Application “ACT-NET” for SEEIIST

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Why should we believe in SEEIIST?

Initiative proposed by Prof. Herwig Schopper, former Director General of CERN

Chronos

Kairos

Trieste, January 2018, Herwig Schopper told us:

As a walk up this morning, Kairos came to me, and whispered to my ear:

“NOW IT IS A RIGHT TIME TO DO THIS PROJECT FOR SEE”

A silent and invisible string …

Ending of the cold war started at the Geneva Summit 1985

A creative dreamer ...
A Lord of a collider rings ...

- A Tunnel -4 m diameter tunnel of 27 km circumference, with huge underground labs and numerous surface facilities, and set up with a precision of 0.1 mm per kilometer, the Large Electron-Positron Collider (LEP at CERN) was not only the largest but also one of the most sophisticated scientific research instruments ever created by Man.
- Located at CERN, near Geneva, LEP was built during the years 1983 - 1989, was operational until 2000, and corroborated the standard model of particle

Tirana, May 2018, Herwig Schopper told us:

"…Let me dream about this project for SEE …"

"… Please help Sanja with this project.."

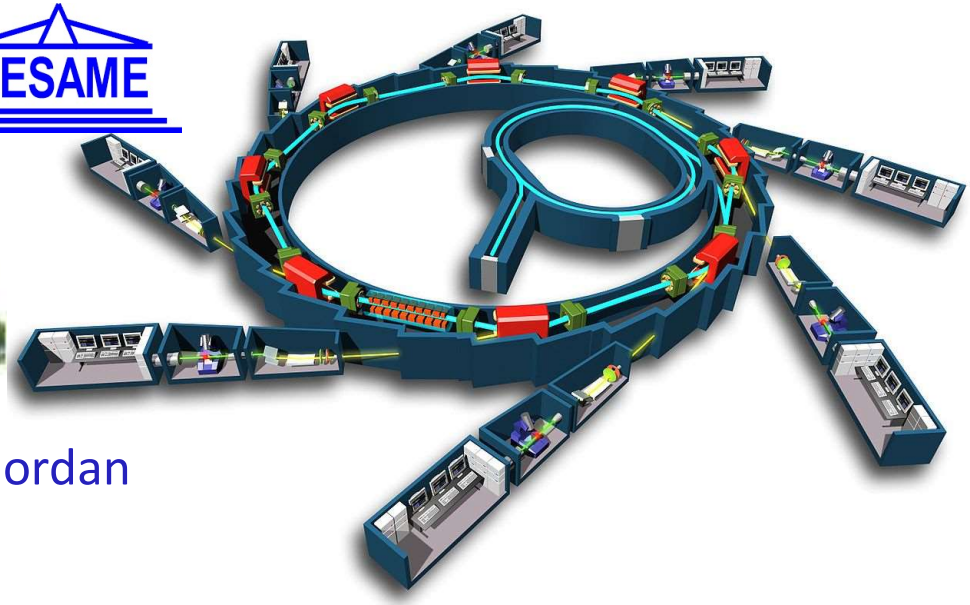
Summary of the mission of the SEEIIT Project

- Science for Peace
- Scientific Excellence
- International Collaboration
- Sustainable development of society
- Education and training
- Technology Transfer and boost of Innovation
- Development of powerful digital network

A SUCCESS STORY

SESAME: 'Synchrotron Light for Experimental Science and Applications in the Middle East'

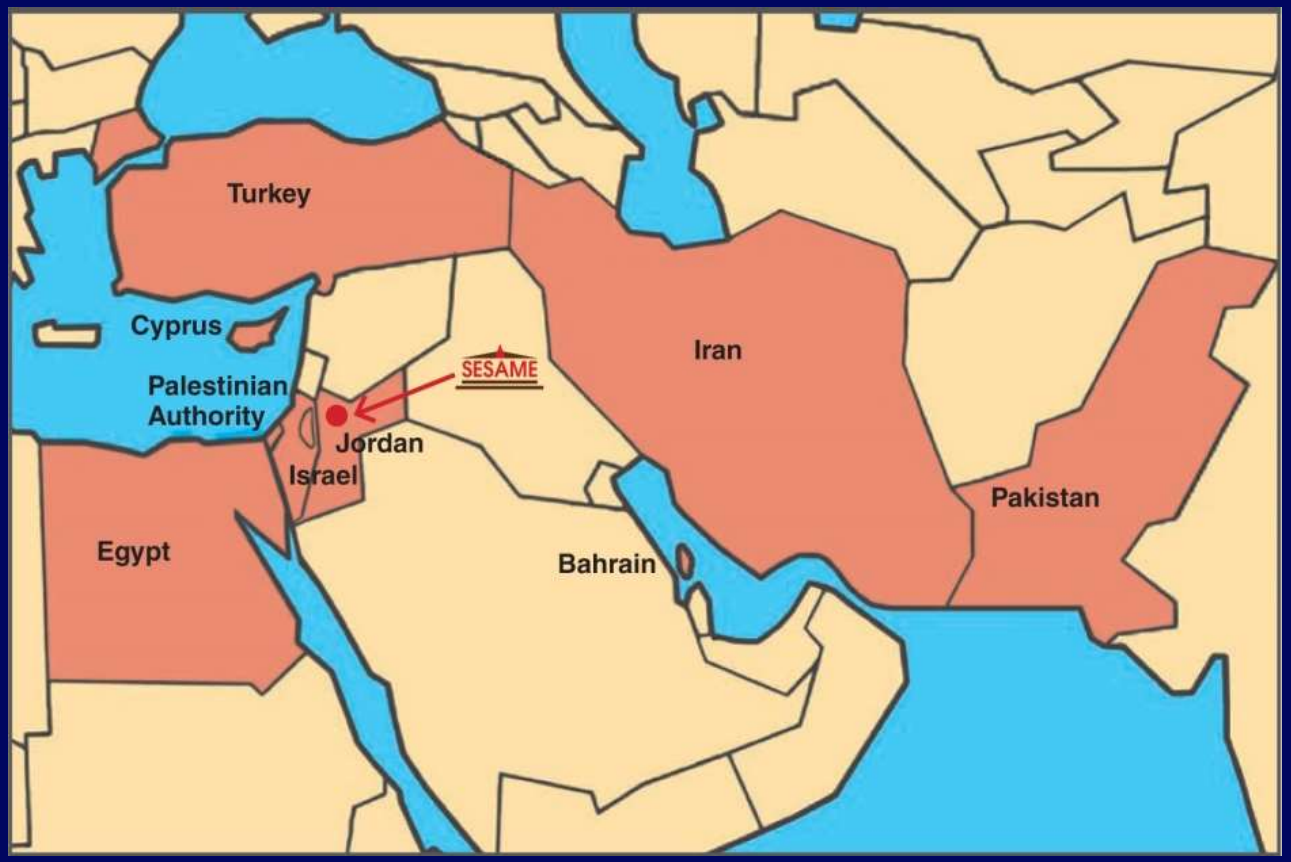
SESAME



Jordan

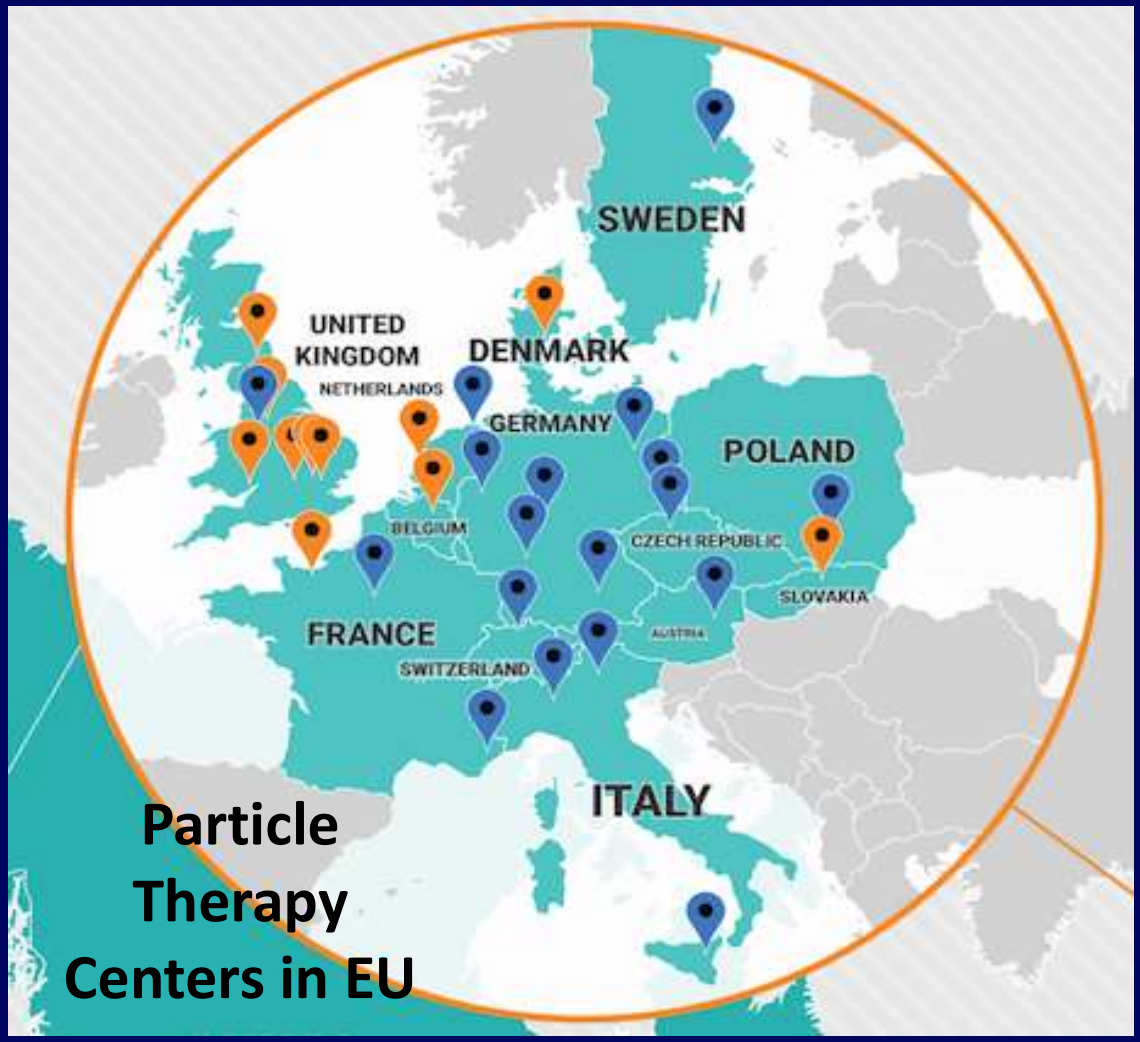
The first President of Council of SESAME - Prof. Herwig Schopper

Success story demonstrated in SESAME project:



9 member states of different political systems and religions in the Middle East: Bahrain, Cyprus, Egypt, Israel, Iran, Jordan, Pakistan, Palestine Authority, Turkey;
all of them to peacefully working together for the good of the humanity

A reason why we should endeavor the SEEIIST



Another reason to embrace the initiative

Number of patients from the Republic of Macedonia consuming PT in all times = 3

R. Macedonia has 2 000 000 habitants.

COST Project Proposal ACT NET, credits to:

Prof. Manjit Dosanjh,
Staff at CERN

… and to the members of

ENLIGHT

The European Network for Light Ion Hadron Therapy

MONTENEGRO
Ministry of Science

Marijeta Bajraktarevic et al.

COST Open Call Proposal
Reference OC-2018-1-22865

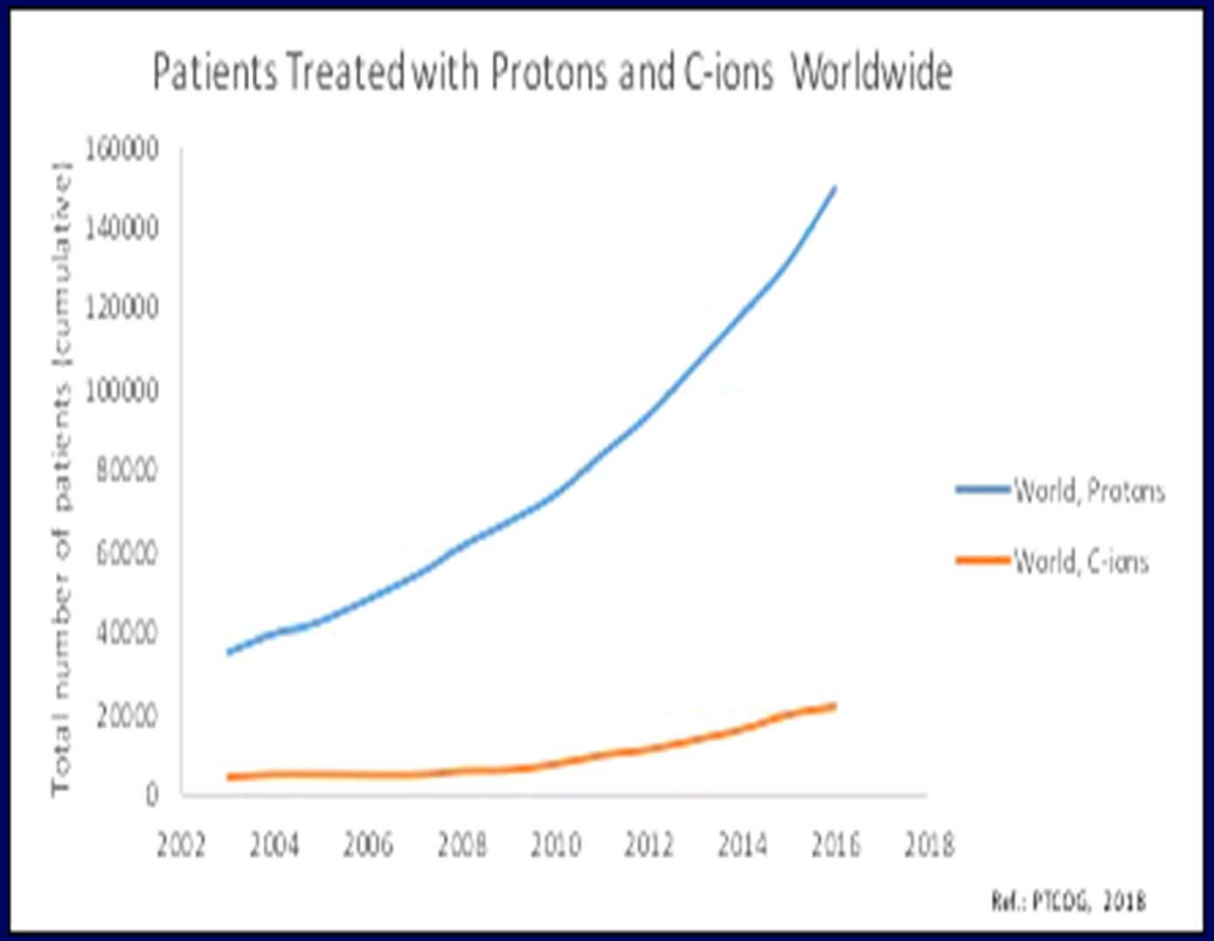
ADVAENCED CANCER THERAPY NETWORK

Acronym: ACT-NET

Why ACT-NET?

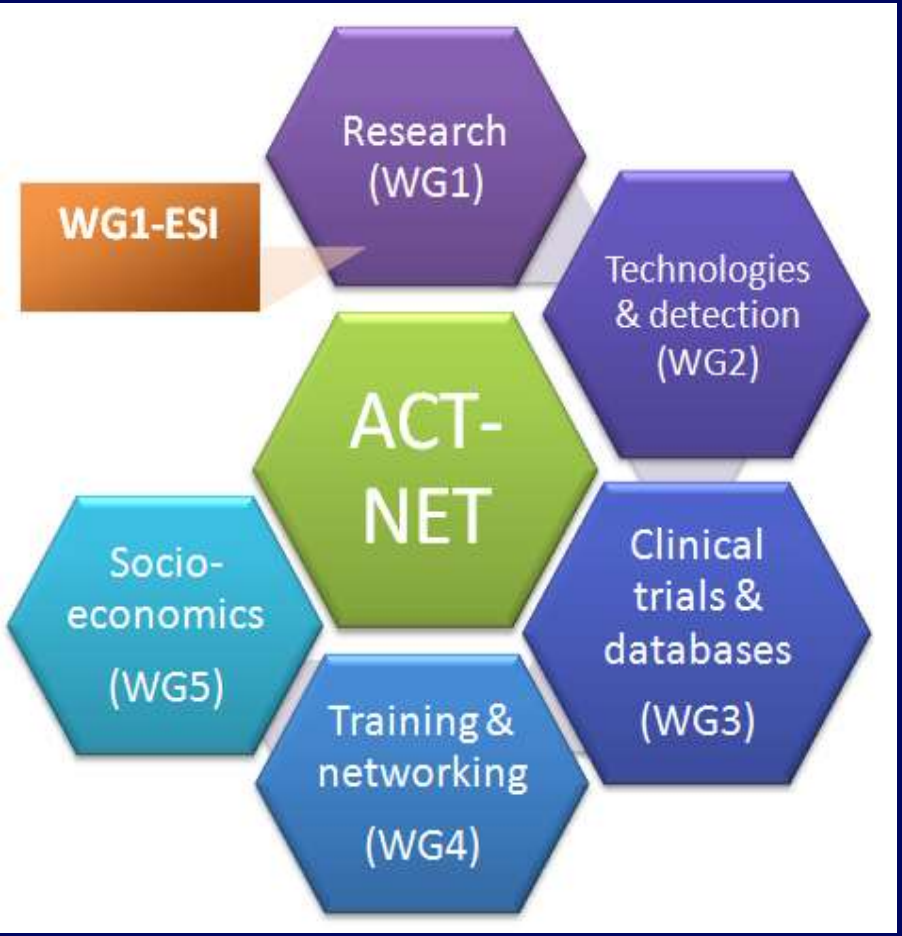
Cancer treatment with particle therapy (PT) is gaining momentum globally.

There is an urgent need for training and research for particles beyond protons to provide personalized treatment to patients.



Number of patients treated with PT globally. Upper curve - protons; lower curve - C-ions (Manjit *et al.)*

ACT-NET IMPLEMENTATION Five Working Groups



ACT-NET IMPLEMENTATION Five Working Groups

WG1:
Bridges across the disciplines (medicine, physics, and radiobiology)

Outcomes:

Improved research skills and competencies in physics (interactions of protons, C-12 and other ion species with living matter) . Scientific partnerships will be created among partners (individuals and /or institutions).

ACT-NET IMPLEMENTATION Five Working Groups

WG2:
Technologies, Treatment Planning, Simulations, Dosimetry

Outcomes:

The networking will result in joint studies, increased awareness for the shortcomings in the existing dosimetry technologies, improvements in the treatment planning for each patient, and the challenges in the clinical environment.

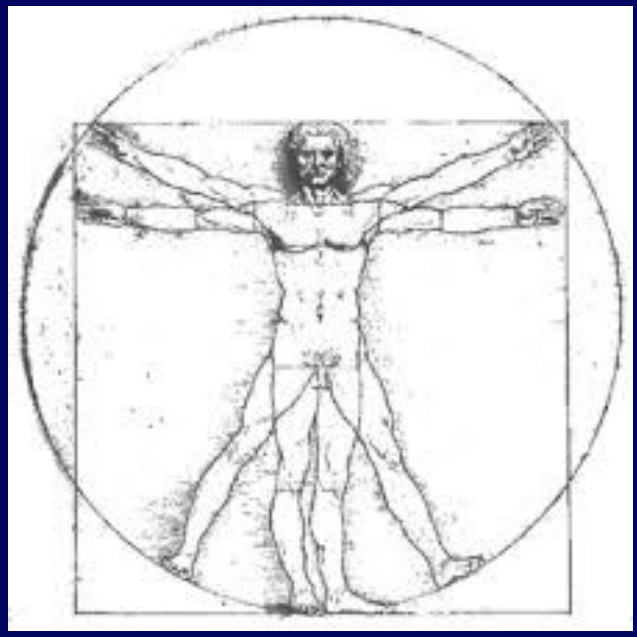
Scientists from SEE will gain expert knowledge in treatment planning for PT and dosimetry, improving the opportunities for innovation development.

Outcomes: Improved research skills and competencies in physics, as far as interactions of protons, C-12, and other ion species are concerned. Scientific partners

ACT-NET IMPLEMENTATION Five Working Groups

WG3:

Clinical studies, protocols, databases, IT technologies



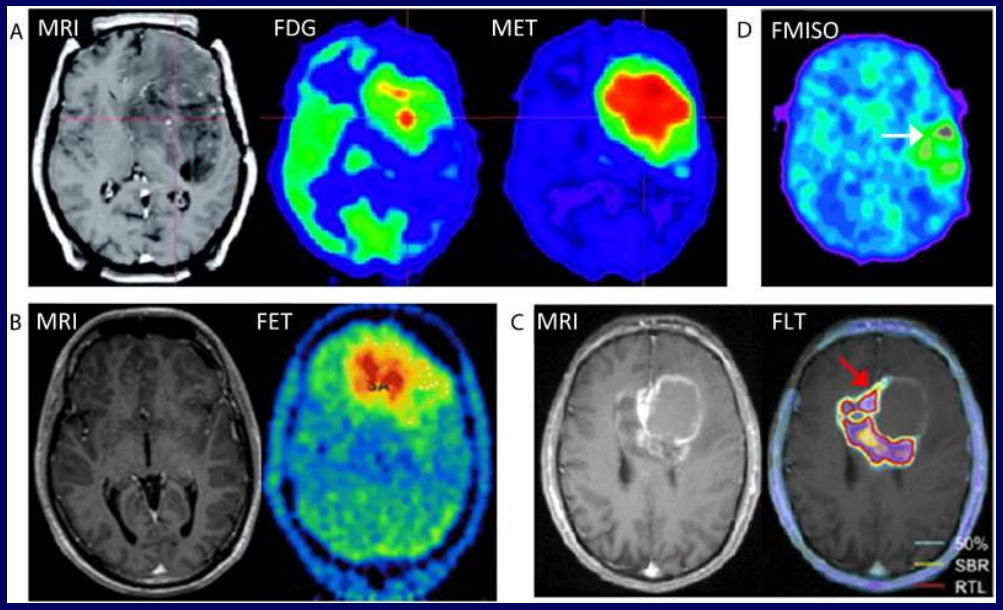
Outcomes:

Easy access to the patient histories will be facilitated with the portal of shared clinical data of the partners.

ACT-NET IMPLEMENTATION Five Working Groups

WG4:

Imaging for PT



Outcomes:

Imaging improvements required to identify the tumours with improved precision, defining the target volumes and the respective dose, in-vivo guide and monitor the dose delivery, measuring the integrated dose.

Outcomes: Improved research skills and competencies in physics, as far as interactions of protons, C-12, and other ion species are concerned. Scientific partners

ACT-NET IMPLEMENTATION Five Working Groups

WG5:
Training, Knowledge transfer, and socio-economic challenges

Outcomes:
Creation of the critical mass of the trained researchers with multidisciplinary expertise in PT. Creation of the multidisciplinary network of the scientists, researchers, medical doctors, engineers, the business community, and other relevant experts as a platform for knowledge exchange.

Who are the ACT-NET proposers?

The proposal conjoins participants from 20 countries who are wishing to promote interdisciplinary networking for excellence, fostering collaboration of countries that **possess PT facilities** and those that are in the **process of acquiring them**, with a specific focus on South East Europe region (SEE).

ACT-NET will **generate innovations**, allow **knowledge/technology transfer** for the advanced design of the future PT facilities, provide a sustainable platform for **knowledge exchange** among the multi-faceted stakeholders (researchers, doctors, engineers, technicians, IT engineers, industrial partners and policymakers).

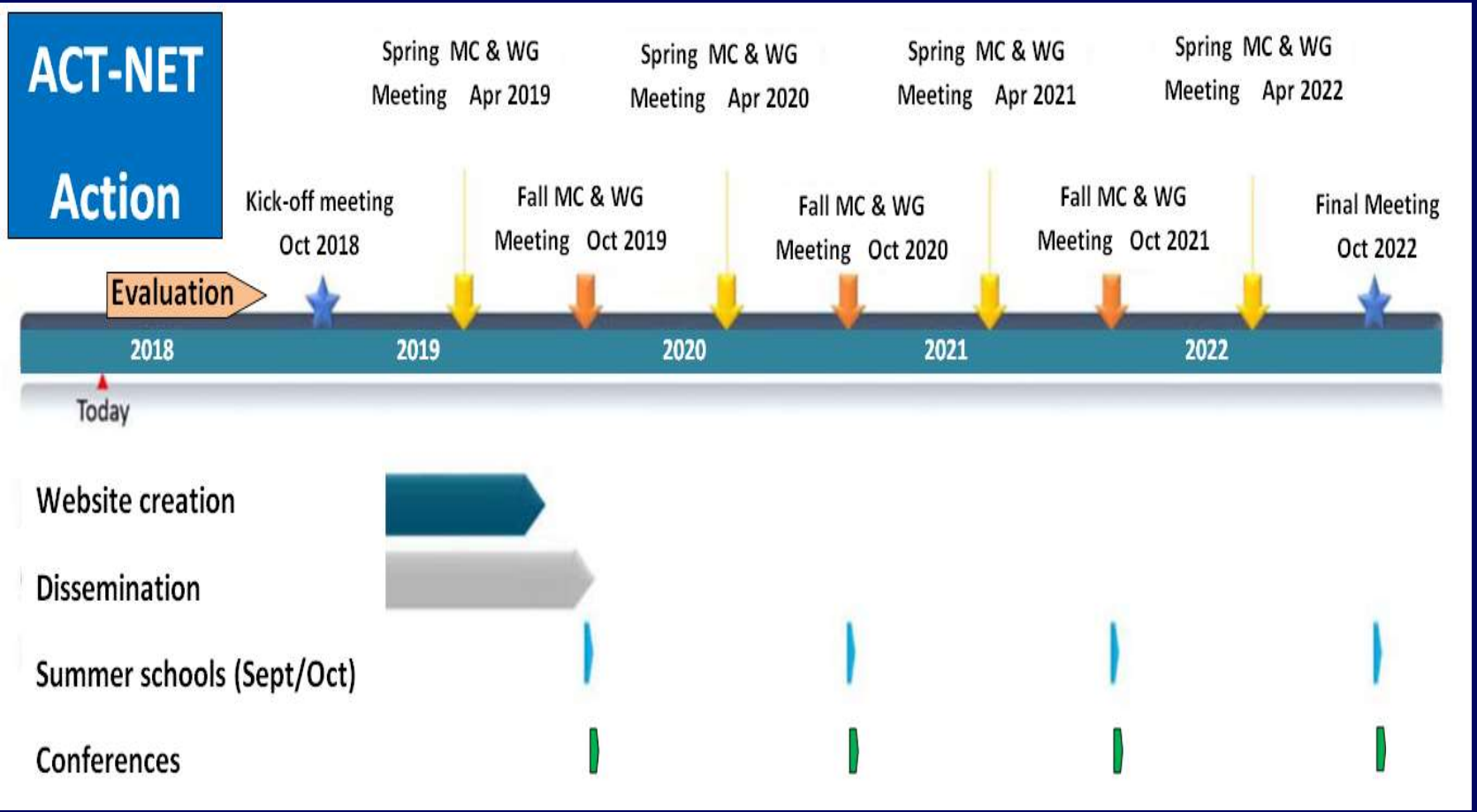
What will be the outcome of ACT-NET?

ACT-NET will open new research areas, but also strengthen capacities through training.

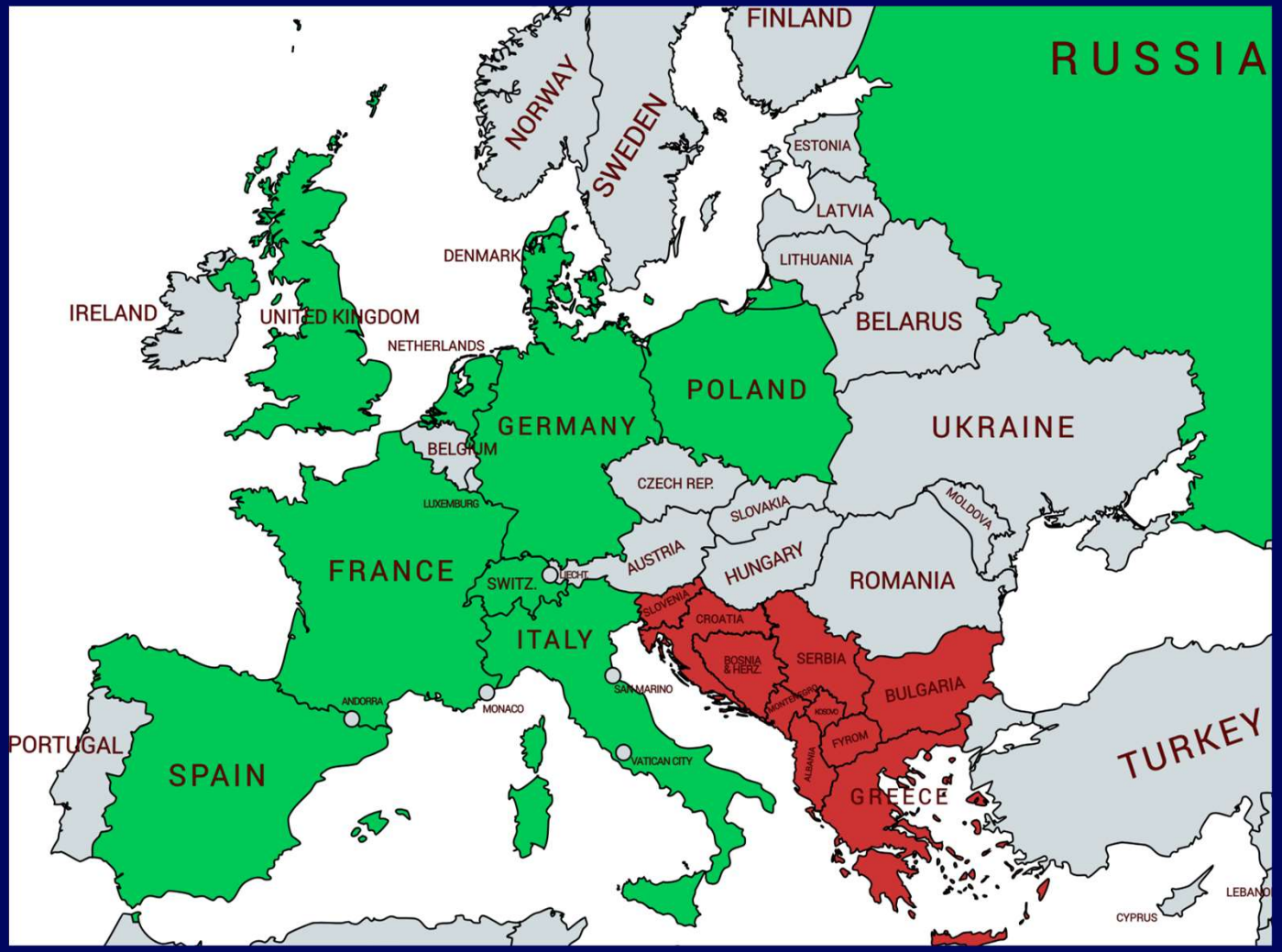
ACT-NET will provide a networking instrument for collaboration for Peace, developing new technologies for the future cost-effective PT centres, for a better health of citizens of Europe.

ACT-NET will serve to SEEIIST human capacity building, and to any other future centre of excellence for research, training, and capacity building in the field of PT for the countries of Europe and beyond.

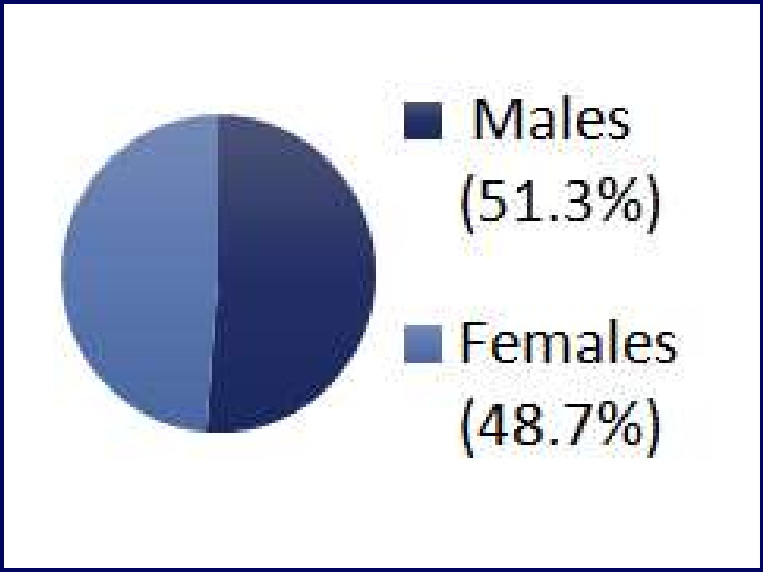
GANTT CHART of ACT-NET

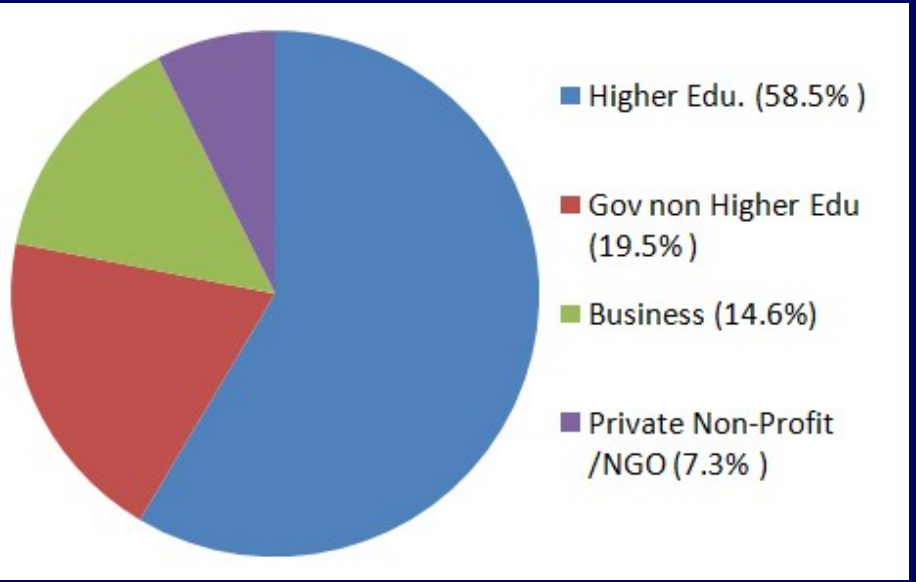


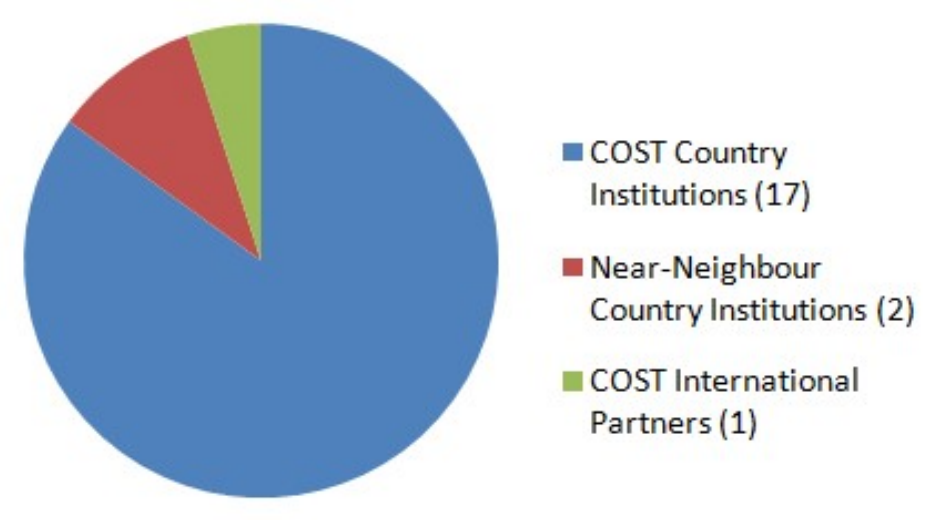
ACT- NET Geographical Distribution: 20 ACT-NET proposing countries. **Green** - Countries with PT facilities (10), and **Red** - all SEE Countries with no PT (10) facilities.



ACT-NET Statistics








It is a right TIME for all of us to cordially embrace the SEEIIST Initiative and make it happen