



A LARGE-SCALE COMPETITIVE RESEARCH INFRASTRUCTURE

# **South East European International Institute for Sustainable Technologies (SEEIIST)**

<https://seeiist.eu>

- develop a regional center of excellence in South East Europe
- support socio-economic development
- decrease or even reverse brain drain

**Core of SEEIIST: a state-of-the-art  
'Facility for Tumour Therapy and Biomedical  
Research with Protons and Heavier Ions'**

**SCIENCE FOR DIPLOMACY  
SCIENCE FOR SOCIETY**

## South East European International Institute for Sustainable Technologies (SEEIST) in the spirit of 'Science for Peace'

First official support of such an initiative by the Government of Montenegro in March 2017, following the original proposal by Prof. Herwig Schopper, former Director General of CERN

Positive reception by a number of organizations and institutions



### Summary of the main missions of the SEEIST Project

- Science for Diplomacy
- Scientific Excellence
- International Collaboration
- Sustainable development of society
- Improving health of citizens
- Accelerating knowledge and innovation
- Reversal of brain drain
- Green Infrastructure



**Important first political step:  
Declaration of Intent signed at CERN on October 25, 2017**

Signed by eight parties:  
Albania, Bosnia and Herzegovina,  
Bulgaria, Kosovo\*, Montenegro,  
North Macedonia, Serbia and  
Slovenia.  
Croatia agreed 'ad referendum',  
Greece took an observer status.



SEEIIST Initiative transformed  
into a Regional Project

SEE Ministers of Science /  
Corresponding Ministers or their  
representatives at CERN

**Candidate Members for the South-East European  
International Institute for Sustainable Technologies**

- Republic of Albania
- Bosnia and Herzegovina
- Republic of Bulgaria
- Republic of Croatia
- Hellenic Republic
- Kosovo\*
- Montenegro
- Rep. of North Macedonia
- Republic of Serbia
- Republic of Slovenia



Signed a Declaration of Intent  
Agreed 'ad referendum'  
Observer

\* This designation is without prejudice to positions on status and is in line with UNSC 1244/1999 and the ICJ opinion on the Kosovo Declaration of Independence

**Major milestone in January 2018**

**FORUM on New  
International Research  
Facilities in South East  
Europe**

develop a research excellence nucleus in SEE  
benefit for science and technology, training, investment in young people,  
job creation, reverse of brain drain, knowledge based economy

Two options for the Institute:  
- 4th Generation Synchrotron Light Source  
- Facility for Tumour Therapy and Biomedical  
Research with protons and heavier ions

**SCIENCE FOR SOCIETY**

Organizing Committee:  
Henry Haberer (Chairman, former DG of CERN)  
Fernando Flores (President of INFN)  
Christoph Geilker (Director of DESY, Germany)  
Nikolaus Gehrmann (Deputy Dean, University of Mainz)  
Jana Žigverc (Director of DESY, former DG of GSI)  
Rudolf Van Wazer (President of IAEA)

Local Organizers:  
Nadia Knappi (ICTP)  
Boris Ivanovski (IKM)



25 & 26 January 2018,  
ICTP, Trieste, Italy

Registration to the Forum is free. For a restricted number of participants from the region  
travel subsistence would be possible. Please register at <http://indico.ictp.it/event/8408/>

Forum held at the ICTP/Trieste  
under the auspices of the UNESCO,  
IAEA and EPS

- More that 100 participants
- Representatives from the EC, ESFRI,  
IAEA, EPS, RCC, CERN, FAIR-GSI,  
HIT, CNAO, DESY, SESAME....
- including 40 Users from the Region

**Central goal of the Forum: Scientific Concept Study  
for the Institute presented for the first time to the public**

Executive Summary of the Concept Study  
prepared for the Forum

Main elements of a Business Plan:

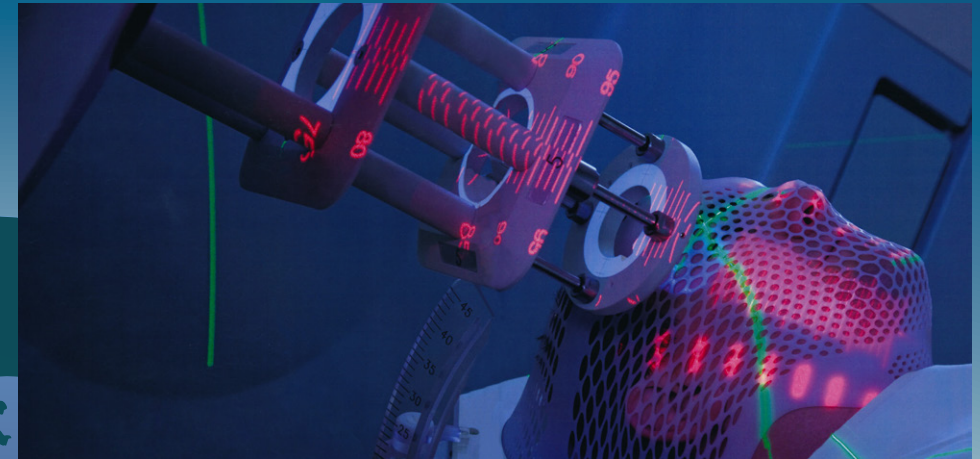
- technical parameters of the facilities
- time schedule
- investment costs
- operation costs

Concept Study published as a CERN  
Yellow Report (available under seeiist.eu)



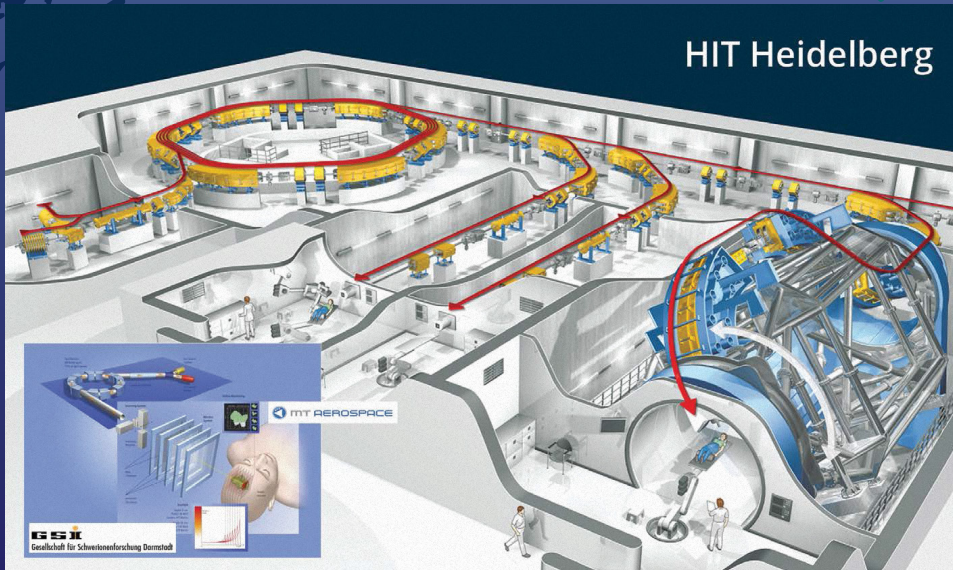


# Facility for Tumour Therapy and Biomedical Research with Protons and Heavier Ions



About 500 patients per year to be treated as needed for a population of 20M. In parallel, 50% of the beam time dedicated to cancer research with a wide range of different ions beyond protons and C-ions as presently used, **making the SEEIIST project unique in the world**. Capacity for about 1000 researchers, including a major number from outside the SEE region.

Particle therapy centers in Europe  
Big hole in South East Europe





## Important further Political step Formation

## of an Intergovernmental Steering Committee

### 1<sup>st</sup> Meeting January 2018, Sofia

- Election of Chairperson: Dr. S. Damjanovic, Minister of Science of Montenegro



### 2<sup>nd</sup> Meeting March 2018, Tirana

- Project selection: Facility for Tumour Therapy and Biomedical Research with Protons and Heavier Ions; Draft Memorandum of Cooperation approved



### 5<sup>th</sup> Meeting June 2019, Sarajevo

- Distribution of tasks for the Preparatory Phase



### 6<sup>th</sup> Meeting September 2019, Budva

- SEEIIST obtained a legal status as a Swiss Association



### 3<sup>rd</sup> Meeting July 2018, Skopje

- Distribution of tasks for the next Preparatory Phase of the Project



### 4<sup>th</sup> Meeting November 2018, IAEA, Vienna

- Coordinator of the Preparatory Group elected



### 7<sup>th</sup> Meeting January 2020, Ljubljana

- Preparation of Convention for the establishment of SEEIIST



- 8<sup>th</sup> Meeting will be held in Switzerland under the patronage of the Swiss Federal Department of Foreign Affairs - FDFA



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

## Preparatory Group for the SEEIIST Design Study Phase set up



European Commission – Directorate General for Research and Innovation (EC DG-RTD)

- First direct financial support of 1 MEUR for the SEEIIST Design Study Phase



CERN – European Organization for Nuclear Research

- To host the Working Group 1 – Accelerator Design – part of the SEEIIST Design Study Phase
- Great benefit from long experience in the design of medical accelerators



GSI-FAIR – Facility for Antiproton and Ion Research

- To host the Working Group 2 – R&D and Scientific Aspects of the SEEIIST Design Study Phase
- Great benefit from long experience in Bio- and Medical Physics



IAEA – International Atomic Energy Agency

- Support by the IAEA for the Capacity building program
- Open Call for the first IAEA Fellowships

## Setting up the Preparatory Group for the SEEIIST Design Study Phase

Overall Responsibility:  
SEEIIST Steering Committee

Overall coordinator of the Preparatory Group  
Dr. Horst Wenninger

Working Group 1  
Accelerator Design  
at CERN

Working Group 2  
R&D/Scientific  
Aspects  
at FAIR-GSI

Working Group 3  
Legal Aspects  
+ Business Plan  
SEEIIST SC

## No matter where SEEIIST will be located – National Benefits across the whole Region –

**Treatment of patients:** all participating parties will have their share for treatment of patients

**Involving the local industry:** the construction of the Facility would require more than 200 companies. The production of many different components can preferentially be assigned to our local industry.

**Powerful digital networks and big data handling** - to reach the clinical and scientific goals two Networks will be set up, a **Clinical Network** and a **Scientific Network**, to be located in different parts of the region.

**Building innovative capacities in the SEE region in a cutting edge field such as Hadron Therapy:** - funding from IAEA (TC-RER Project 0.5 MEUR approved); -H2020 EU (COST and MC-ITN -‘TREASURE for Fighting Cancer’ submitted)



# Timeline of the SEEIST Project

For SEEIST up to 200 MEUR required, guaranteeing competitiveness in Europe. Multiple sources of financing necessary: EU Structural and cohesion funds, IPA funds, some contributions from member-states, other funds. We also hope for the support by the Berlin Process.



**2017-2018**  
Concept Study

**2019**  
• Start of the Design Study Phase at CERN  
• Set-up of a legal entity

**2020**  
• Selection of the site  
• Application for the ESFRI Road Map

**2022**  
Start construction of the Facility

**2028**  
First patient treatments



## Another Milestone for SEEIIST: Memorandum of Cooperation signed by six Prime Ministers of the Region



Signature at the 6th **Summit of the Berlin Process** on 5 July, 2019 in Poznan Poland. Memorandum signed by six Prime Ministers: Albania, Bosnia and Herzegovina, Bulgaria, Kosovo\*, Montenegro and North Macedonia.

## Start of the SEEIIST Design Phase marked by the Kick-off event held in Budva



Prime Minister of Montenegro opened the event

Purpose of the event - to inform the public about the advancement of SEEIIST which has moved from its Conceptual to the Design Phase



More than 120 people met to discuss the further developments of the SEEIIST Project

## Special Event - "Start of the SEEIIST Design Phase" on 18 September 2019 in Budva, Montenegro

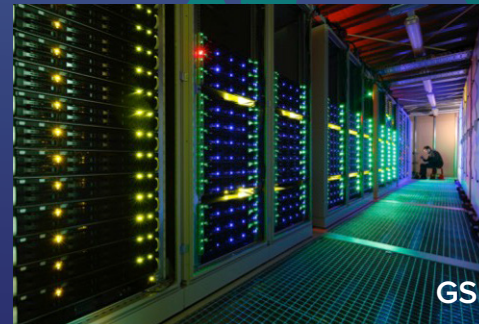




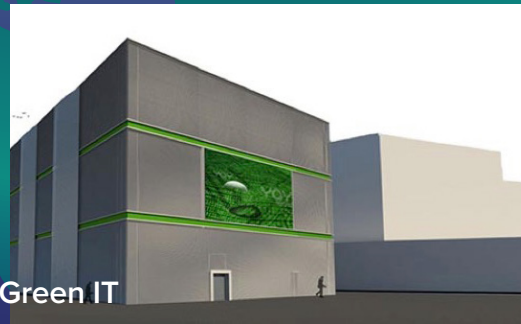


**SEEIIST**  
will be  
**First Green Particle**  
**Therapy**

## SEEIIST First Green Particle Cancer Therapy and Research



GSI-Green IT



Action in Place – preparing a convincing concept of SEEIIST as a Green Infrastructure: Green Energy – Green IT ...

**Special event 'SEEIIST meets Industry' on 1-3 April 2020  
in Sarajevo, B&H**

# SEEIIST

## meets industry

LOCATION: Sarajevo, Bosnia and Herzegovina  
VENUE: City Hall  
DATES: 1-3 April 2020

### CONFERENCE TOPICS

- Modern ion facilities for cancer research and therapy
- Technological and industrial opportunities
- SEE industrial capacity
- Perspectives in SEE

SEEIIST South East European International Institute for Sustainable Technologies  
this event is co-financed by the CEI Cooperation Fund <https://indico.cern.ch/e/seeiistmeetsindustry>

ORGANIZATION	International Advisory Committee:	Programme Committee:	Organizing Committee:	Assistants:
ORGANIZATION	U. Amaldi (TERA, Italy)	M. Bauer (HEPTech)	D. Husremović (UNSA, BiH)	A. Avdić (UNSA, BiH)
	F. Bordry (CERN, Switzerland)	J. Burgar (COSYLAB, Slovenia)	A. Gazibegović-Busuladžić (UNSA, BiH)	A. Čaušević (UNSA, BiH)
	S. Damjanović (SEEIIST Association)	M. Gillin (CERN, Switzerland)	S. Odžak (UNSA, BiH)	A. Džaferović (UNSA, BiH)
	M. Durante (GSI & FAIR, Germany)	M. Dusanjic (ENLIGHT, UK & CERN, Switzerland)	M. Čohodarić (UNSA, BiH)	E. Džaferović (UNSA, BiH)
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	U. Wienrich (GSI & FAIR, Germany)		M. Vretenar (CERN, Switzerland)	
	A. Zens (MedAustron, Austria)		P. Urschuetz (MedAustron, Austria)	
			Y. Foka (GSI & FAIR, Germany)	
			E. Offermann	

One of the Important SEEIIST missions - to involve the local industry  
All details about the event available under: <https://indico.cern.ch/event/839930/>



# SCIENCE FOR DIPLOMACY SCIENCE FOR SOCIETY



This Brochure has been produced under the auspices of the Ministry of Science, Montenegro