

Proposal for a Large-Scale Research Facility in South East Europe

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Western Balkans Platforms on Education and Training & Research
and Innovation, 7th Ministerial Meeting, 25-26 June 2018, Brussels

Joint South-East European International Institute for Sustainable Technologies (SEEIIST) in the spirit of 'Science for Peace'



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

positive reception by a number of organizations and institutions



The main objectives of the Project

- ❖ To promote collaboration between science, technology and industry, but also to provide platforms for the development of the education of young scientists and engineers based on knowledge and technology transfer from European laboratories like CERN and others
- ❖ To mitigate tensions between countries in the region

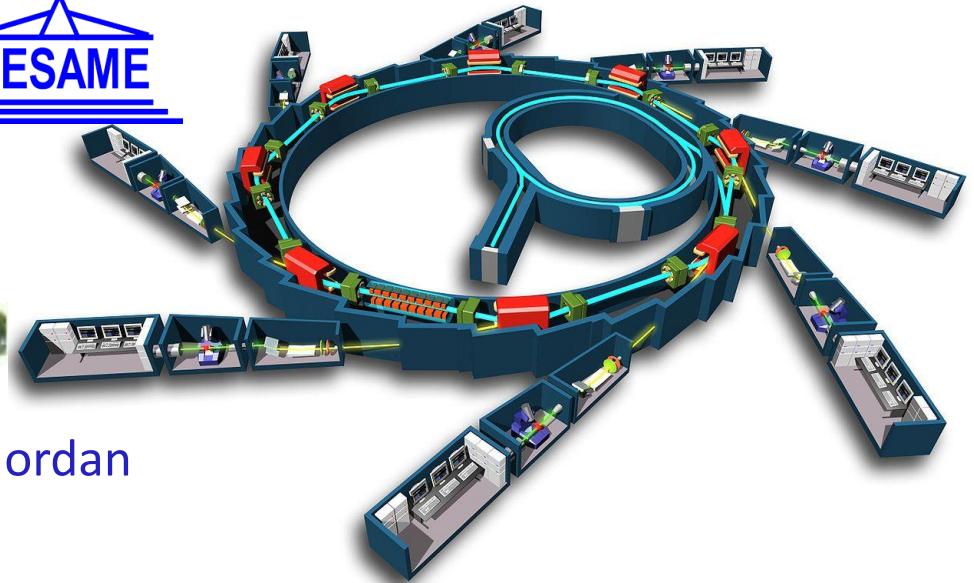
The combination of these tasks would imply another case of the 'CERN model' of 'Science for Peace'

The goals can only be achieved with a Large Scale Facility based on the latest technologies to enable 'first class research' and thereby strongly revert brain drain and assure high competitiveness

The project would be unique in the region and could contribute to

- ❖ develop the economic situation
- ❖ improve the standard of living
- ❖ reduce unemployment
- ❖ trigger complementary technologies

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



Jordan



The success of such an initiative is being demonstrated by the SESAME project:

built in Jordan, unifies 9 member states of different political systems and religions in the Middle East: Bahrain, Cyprus, Egypt, Israel, Iran, Jordan, Pakistan, Palestinian Authority, Turkey; has achieved all of them to peacefully work together

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

Preparatory steps during 2017 towards the realization of the SEEIST Project

2016	2017							
November	March	April	May	June	July	August	September	October
WAAS meeting, Dubrovnik, proposal H. Schopper for a joint SEE International Institute	Official support by the Government of Montenegro		Visit of all Science/Corresp. Ministers of the region			First joint discussion, Budva		Ministerial meeting at CERN – Signature of Declaration of Intent
	Political steps		Initiative presented to the EC, incl. Commissioner C. Moedas			Initiative presented to the IAEA, incl. DG Y. Amano		

2017							2018		
Jun	July	August	Septemb.	October	November	Decemb.	January	February	March
Two international committees of experts for each of the two project options formed	Editor committee meeting at CERN	Editor committees work on Concept Studies			Editor committee meeting in Budva	Editor committee meeting at CERN	Scientific Forum ICTP, Trieste	1 st Intergovernmental Steering Committee meeting, Sofia	2 nd SC meeting, Tirana
	Scientific steps					Executive Summary of the results prepared			

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*

FYR of Macedonia

Montenegro

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 option on the Kosovo Declaration of Independence

Culmination of the political development so far: Declaration of Intent signed at CERN on October 25, 2017



Signed by eight parties:
Albania, Bosnian and Herzegovina,
Bulgaria, Kosovo*, The FYR of
Macedonia, Montenegro, Serbia
and Slovenia.
Croatia agreed 'ad referendum',
Greece is presently an observer



SEE Initiative now transformed
into a Project with Regional
character

Further result:
Intergovernmental Steering
Committee formed for the
further steps

How the common central facility would look like?

Originally two complementary options proposed, both based on most advanced technologies

Option I: Facility for Tumour Therapy and Biomedical Research with protons and heavier ions

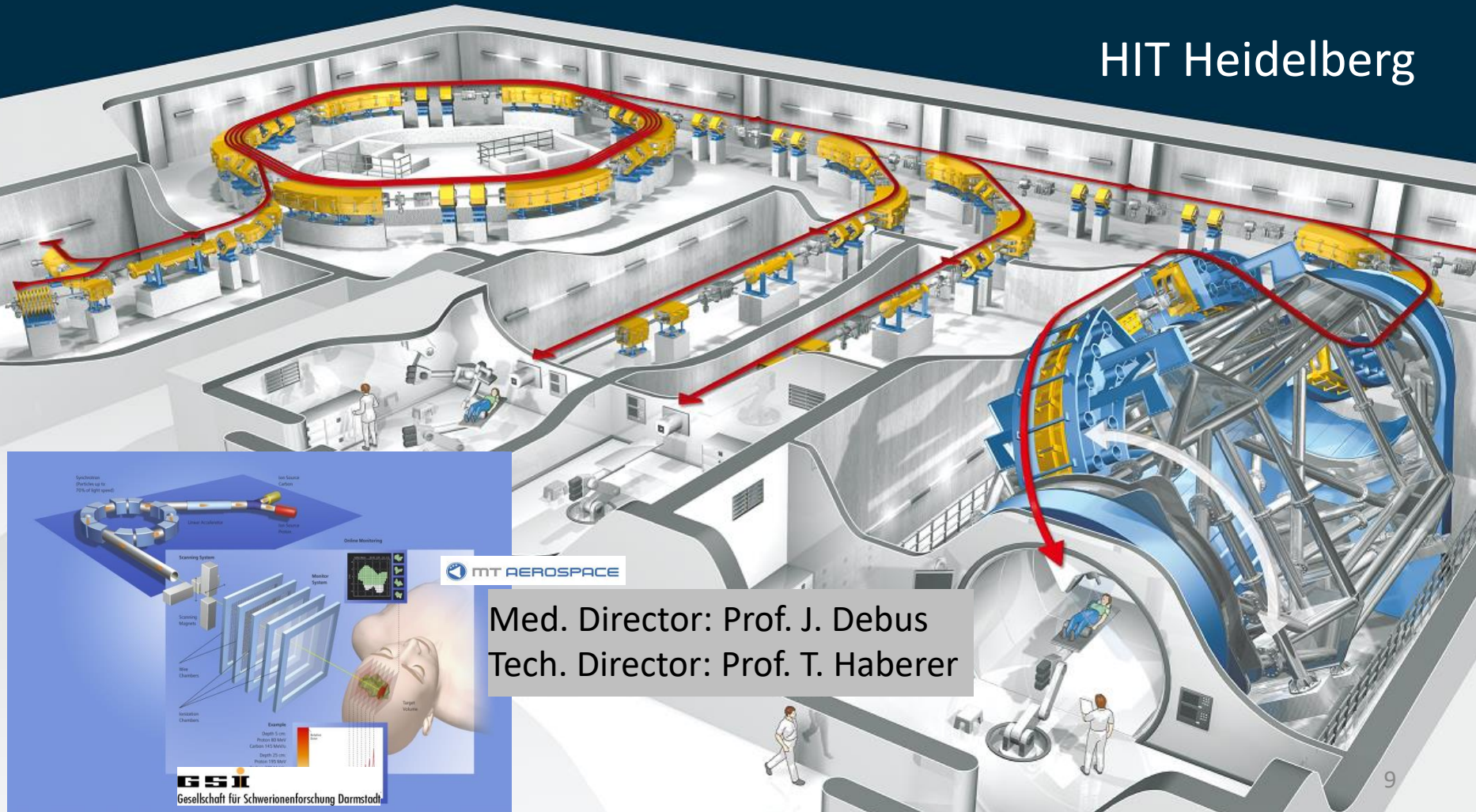
Option II: 4th Generation Synchrotron Light Source with the latest technique

Following a proposal by the EC to choose during 2018: Option I unanimously selected in the meantime

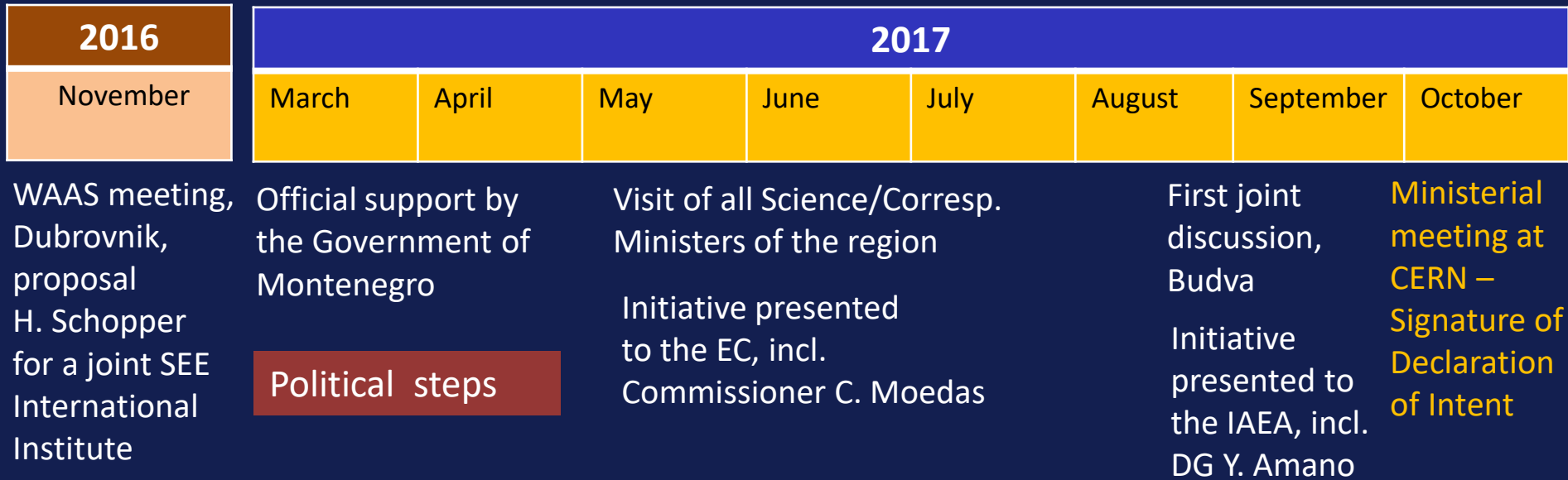
Option I: Facility for Tumour Therapy and Biomedical Research with protons and heavier ions

About 500 patients per year to be treated as needed for a population of 20M. In parallel, 50% of the beam time dedicated to biomedical research. About 1000 researchers, including a major number from outside the SEE region. **Unique.**

HIT Heidelberg



Preparatory steps during 2017 towards the realization of a SEE Project



Central goal of the Forum: Concept Studies for the two options of the Institute created by the Editor Committees and presented for the first time to the public

Executive Summary
of the Concept
Studies prepared
for the Forum

Basic concepts for a SOUTH-EAST EUROPE INTERNATIONAL INSTITUTE FOR SUSTAINABLE TECHNOLOGIES (SEEIIST)



January 15, 2018

Main elements of
a **Business Plan**:

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

Culmination of the large effort invested over the year 2017

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:

Herwig Schopper (Chairman, former DG of CERN)
Fernando Ferroni (President of INFN)
Christoph Quitmann (Director of MAXIV, Sweden)
Nicholas Sammut (Deputy Dean, University of Malta)
Hans J. Specht (Heidelberg Univ., former DG of GSI)
Ruediger Voss (President of EPS)

Local Organizers:

Nadia Binggeli (ICTP)
Saša Ivanović (MNA)

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/>

ICTP and Ministry of Science Montenegro



**25 & 26 January 2018,
ICTP, Trieste, Italy**



Forum on New International Research Facilities for South East Europe, held at the ICTP/Trieste on January 25-26, 2018

More than 100 participants, among them representatives from the EC (DG for Research and Innovation at that time - Robert Jan Smits), Chair of the ESFRI (Giorgio Rossi), representatives of the IAEA, Secretary General of the EPS, RCC, ... representatives of the SEE Steering Committee, but also high-level representatives from the scientific community: the Medical and Technical Directors of HIT Heidelberg, the Director of CNAO, Administrative Director of SESAME. From the major European laboratories five representatives from CERN including the Director of Accelerator and Technology, and the deputy Director of DESY and the Research Director of GSI-FAIR.

Thanks to the financial help of the IAEA and some help from the EPS, more than 40 Users from the Region could participate in the Forum.

Forum on New International Research Facilities in South East Europe, ICTP, Trieste 25-26 January 2018



Formation of a Steering Committee for the SEEIIST Project

1st Meeting held on 30 January 2018 in Sofia

Rules of Procedure, Election of Chairperson: S. Damjanovic

2nd Meeting held on 30 March 2018 in Tirana

Unanimous decision: Tumour Therapy and Biomedical Research with Protons and Heavier Ions as the core of the SEEIIST Project

3rd Meeting will be held on 13 July 2018 in Skopje



Capacity Building

- Support from the IAEA for Capacity Building – first 0.5 MEUR offered during the Forum to start the Training Program – Application to the IAEA submitted on May 31 2018
- Dedicated COST project proposal ‘Advanced Cancer Therapy NETwork’ (ACT-NET) prepared by ENLIGHT partners and partners from our Region; proposal submitted in April 2018
- Dedicated Multibeneficiary IPA 2019 project ‘Western Balkan Regional Network for Radiotherapy and Oncology’ proposed (The JRC hosted European Network of Cancer Registers, so we asked the JRC for advice on how to realize the same in the SEE region)
- Prepare applications for future ‘Marie Curie’ and other suitable calls within the new EU Framework Program Horizon Europe

Prepare the ground for the next 'Preparatory phase'

- **Form an International Association** as a legal entity (if required)
- **Officially ask CERN to be the headquarter** for the SEEIIST Association until the site for the Project is selected
- **Prepare application for Design-Study-Call INFRADEV-01-2019-2020** (work on Technical Design Report, Business plan, Conditions for the site, future network communities)
- **Two Networks to be set-up:** Clinical network (to connect Hospitals and Oncological Institutes), Scientific network (to connect Universities, Research Institutes, Hospitals)
Also the Hub of Networks should be settled

Europe needs to further advance in ion therapy
'A multiple-ion tumour therapy and research facility'
based on innovative accelerator technologies

Politically widely accepted that the SEE region
needs economic help and further stabilization

Multiple-ion tumour therapy with a large fraction
of beam time dedicated to biomedical research in
South East Europe will be a benefit for all EUROPE