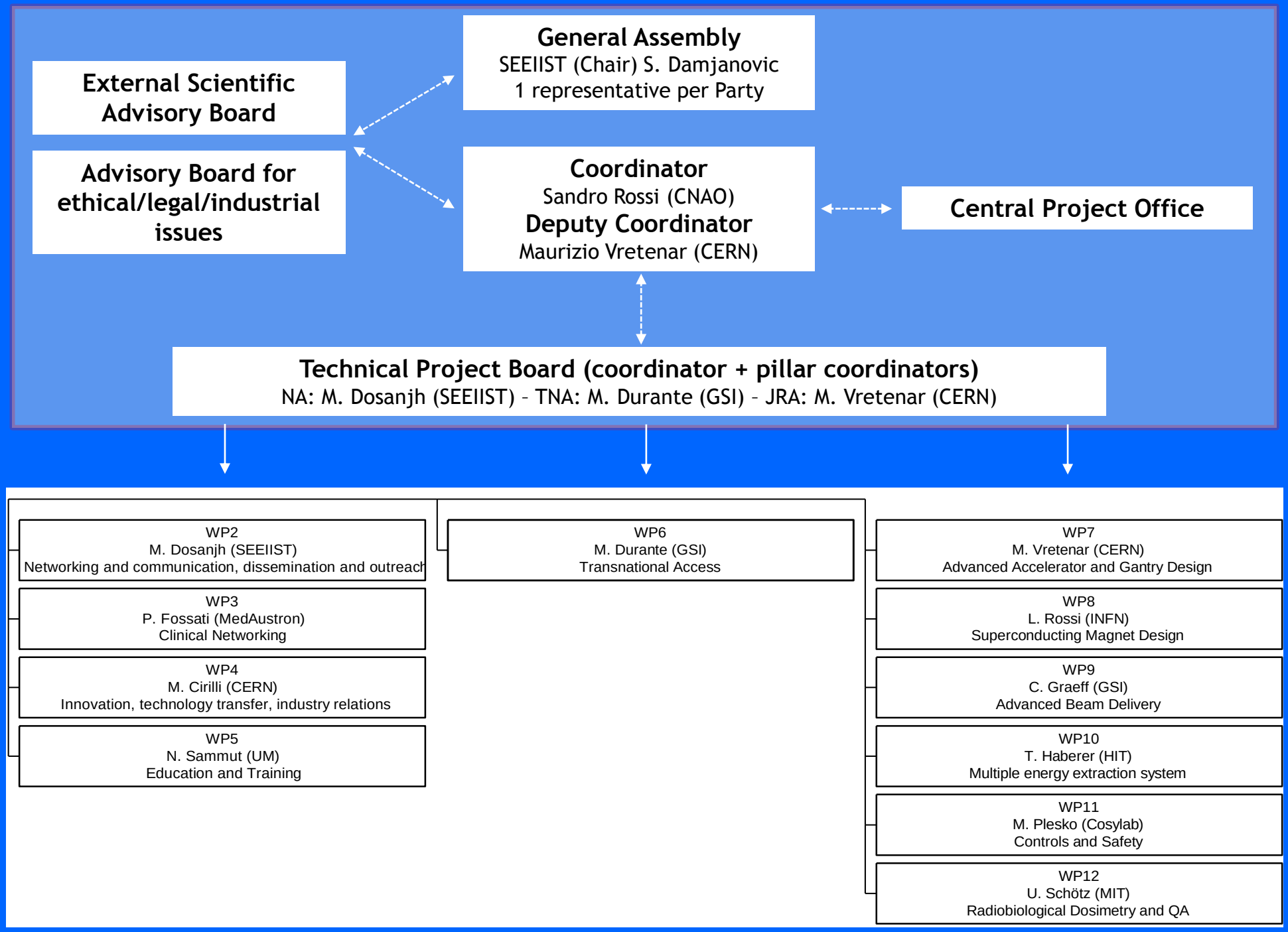
HITRI plus
Heavy Ion Therapy Research Integration

Introduction Networking Pillar Activities

Prof. Manjit Dosanjh (SEEIIST)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101008548


General Assembly
SEEIIST (Chair) S. Damjanovic
1 representative per Party
External Scientific Advisory Board
Advisory Board for ethical/legal/industrial issues
Coordinator
Sandro Rossi (CNAO)
Deputy Coordinator
Maurizio Vretenar (CERN)
Central Project Office
Technical Project Board (coordinator + pillar coordinators)
NA: M. Dosanjh (SEEIIST) – TNA: M. Durante (GSI) – JRA: M. Vretenar (CERN)
WP2
M. Dosanjh (SEEIIST)
Networking and communication, dissemination and outreach
WP3
P. Fossati (MedAustron)
Clinical Networking
WP4
M. Cirilli (CERN)
Innovation, technology transfer, industry relations
WP5
N. Sammut (UM)
Education and Training
WP6
M. Durante (GSI)
Transnational Access
WP7
M. Vretenar (CERN)
Advanced Accelerator and Gantry Design
WP8
L. Rossi (INFN)
Superconducting Magnet Design
WP9
C. Graeff (GSI)
Advanced Beam Delivery
WP10
T. Haberer (HIT)
Multiple energy extraction system
WP11
M. Plesko (Cosylab)
Controls and Safety
WP12
U. Schötz (MIT)
Radiobiological Dosimetry and QA

HITRI plus
Heavy Ion Therapy Research Integration

22 Institutes
(4 HT centres, 10 research institutions, 5 universities, 3 SMEs)

14 European Countries

Participant No *	Participant organisation name	Country
1 (Coordinator)	Fondazione Centro Nazionale di Adroterapia Oncologica (CNAO)	IT
2	Bevatech GmbH (BEVA)	DE
3	Commissariat à l'énergie atomique et aux énergies alternatives (CEA)	FR
4	European Organisation for Nuclear Research (CERN)	IEIO
5	Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT)	ES
6	Cosylab Laboratorij za kontrolne systeme dd (CSL)	SI
7	GSI Helmholtzzentrum für Schwerionenforschung GmbH (GSI)	DE
8	Universitätsklinikum Heidelberg (UKHD/HIT)	DE
9	Istituto Nazionale di Fisica Nucleare (INFN)	IT
10	EBG MedAustron GmbH (MEDA)	AT
11	Marburger Ionenstrahl-Therapie Betreibergesellschaft mbH (MIT)	DE
12	Paul Scherrer Institut (PSI)	CH
13	South East European International Institute for Sustainable Technologies (SEEIIST)	CH
14	Universita ta Malta (UM)	MT
15	Philipps-University Marburg (UMR)	DE
16	Uppsala University (UU)	SE
17	Wigner Research Centre for Physics (Wigner RCP)	HU
18	Riga Technical University (RTU)	LV

Third party participation linked to SEEIIST		
Participant No *	**Participant organisation name**	**Country**
19	Ss, Cyril and Methodius University in Skopje, Republic of North Macedonia (UKIM)	MK
20	Clinical Centre of Montenegro (CMSM)	ME
21	Sentronis a.d. (SEN)	RS
22	Jožef Stefan Institute (IJS)	SI

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- Fondazione Centro Nazionale di Adroterapia Oncologica (CNAO)
- Bevatech GmbH (BEVA)
- Commissariat à l'énergie atomique et aux énergies alternatives (CEA)
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- UniversitatsKlinikum Giessen und Marburg gmbh (UKGM)
- Paul Scherrer Institut (PSI)
- South East European International Institute for Sustainable Technologies (SEEIIST)
- Universita ta Malta (UM)
- Philipps-University Marburg (UMR)
- Uppsala University (UU)
- Wigner Research Centre for Physics (Wigner RCP)
- Riga Technical University (RTU)
  - *Ss, Cyril and Methodius University in Skopje, Republic of North Macedonia (UKIM)*
  - *Clinical Centre of Montenegro (CMSM)*
  - *Sentronis a.d. (SEN)*
  - *Jožef Stefan Institute (IJS)*

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WP1: Management

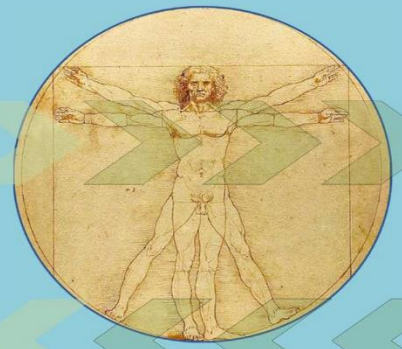
WP2: Networking and Communication, Dissemination and Outreach

WP3: Clinical networking

WP4: Innovation, technology transfer, industry relation

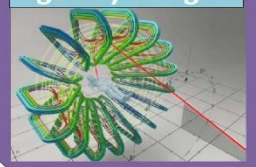
WP5: Education and Training

JRA Joint Research Activities

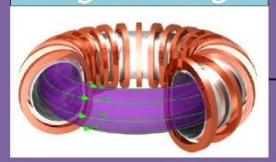


TNA WP6 Transnational Access

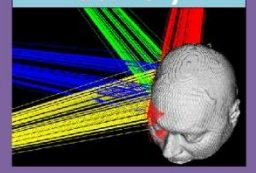
WP7: Advanced accelerator and gantry design



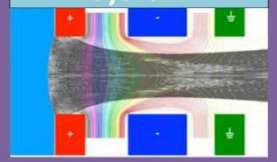
WP8: Superconducting magnets design



WP9: Advanced beam delivery

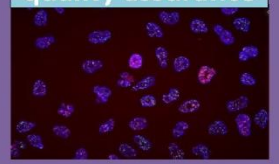


WP10: Multiple energy extraction system



WP11: Controls and safety

WP12: Radiobiology and quality assurance



HITRI*plus* Overall Objectives

Starting from its basic motivations, the HITRI*plus* Consortium has identified five strategic objectives to be achieved within the Project, aimed at the advancement of ion therapy research with ions heavier than protons.

1. To **integrate, open up** and **broaden** the leading European Research Infrastructure for the treatment of cancer with **beams of ions,** ranging from helium to carbon and to heavier ions.

2. To **coordinate and strengthen** the research programmes on heavy ion therapy of different European institutions, by promoting synergies, collaborations, innovation, knowledge transfer, new initiatives and sharing of tools and data.

3. To develop in a joint and coordinated way **novel technologies** to improve the accelerators and their ancillary systems that provide particle beams to this scientific community. These technologies will **improve the present generation** of facilities and will be the **foundation for a next generation** European design for ion therapy facilities.

4. To establish a **European multidisciplinary community** for heavy ion therapy research, aiming at improving treatment strategies and modalities by connecting physics and engineering with medicine, biology and biophysics, and to **extend this community** towards emerging European regions, addressing in particular **new initiatives in South East Europe**.

5. To define the main technical features and the scientific programme of a future **pan-European Research Infrastructure** for medical and radiobiological research with heavy ion beams, to be built in South East Europe or in another European region.

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NA (Networking Pillar): Manjit Dosanjh, SEEIIST

- To promote and communicate **outcome of research activities** among all HITRI*plus* partners
- To catalyse the **collaboration between the different scientific communities** (oncologists, physicists, radiobiologists, biomedical engineers…..), necessary for successful development and improvements in hadrontherapy at the project and European level
- To promote hadron-therapy to the **research community all over Europe and beyond**
- To increase the **awareness** of HT to general public and the research and medical communities
- To highlight **new possibility** for cancer patients of this treatment
- To promote **transnational access** and **access to beam time** from HITRIplus
- To develop **training courses** for student, personnel working at the facilities and training of "end-users" (researchers that want to use the facility)

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Networking Activities: WP2-WP5 Coordinators

- **WP2:** Communication and Networking: Manjit Dosanjh, SEEIIST
- **WP3:** Clinical Network: Piero Fossati, MedAustron
- **WP4:** Innovation, Technology, Industry: Manuela Cirilli, CERN
- **WP5:** Education and Training: Nicholas Sammut, Uni of Malta

L-Università ta' Malta

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