MedAustron: Medical facility

Ramona Mayer
EBG MedAustron Ltd. Wiener Neustadt, Austria
• Overview on the Medical facility and planning status

• MedAustron and European Projects

• Implementation strategy
Entrance hall
Ground floor – functional design
Horizontal and vertical fixed beam
  - Protons and carbon ions
Horizontal fixed beam
  - Protons and carbon ions
Gantry \((-30/+180)\)
- Protons
Ground floor – functional design

Medical facility

- CT, MRI, Ultrasound
- 3 treatment rooms
- 2-3 pre-immobilisation rooms per treatment room
- Offline PET verification
Offline PET
verifikation
Anaesthesia concept
Status – tendering medical devices

**Medical technical equipment**
- Patient positioning system (PPS)
- Patient positioning verification system (PPVS)

Part of Tendering documentation for Gantry Package
Tendering process ongoing

**Medical imaging devices (MRI, CT, PET-CT, ..)**
Tendering documents ready
Tendering process will start soon
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MedAustron and European projects

• **FP 7: PEOPLE MARIE CURIE ACTIONS**
  **PARTNER**
  Marie Curie Initial Training Networks (ITN)

• **FP 7: RESEARCH INFRASTRUCTURE CURIE PROJECT**
  **ULICE**
  The **Union of Light Ions Centres in Europe** involving all the major Infrastructures and skills in the field of hadron-therapy for cancer treatment in Europe

• **INTERREG**
  **RegIonCo (Regional Ion-therapy Co-operation)**
  Austrian-Hungarian Cross-border Project
MedAustron and European projects

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• **FP 7: PEOPLE MARIE CURIE ACTIONS**

**PARTNER**

Marie Curie Initial Training Networks (ITN)

4-year Marie Curie Training project funded by the European Commission with 5.6 million Euros which is aimed at the creation of the next generation of experts. Ten Academic Institutes and Research Centres and two leading companies are participating in PARTNER, forming a unique multidisciplinary and multinational European network.

(Coordinator: M. Dosanjh)

• In strong cooperation with Medical University Vienna

• 2 Phd students *(Supervisor: D. Georg, W. Birkfellner)*

Topic: Treatment planning
MedAustron and European projects

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  **ULICE**
  The **U**nion of **L**ight **I**ons **C**entres in **E**urope involving all the major Infrastructures and skills in the field of hadron-therapy for cancer treatment in Europe

• **INTERREG**
  **RegIonCo** (Regional **I**on-therapy **C**o-operation)
  Austrian-Hungarian Cross-border Project
MedAustron and European projects

• **FP 7: RESEARCH INFRASTRUCTURE CURIE PROJECT ULICE**
  4-year project set up by 20 European research organisations, including 2 European industrial partners (Siemens and IBA), to respond to the need for greater access to hadron-therapy facilities for particle therapy research.

  (Project coordinator: R. Orrecchia)

• Joint Research Activities (JRA) (Pillar coordinator R. Pötter)

• Networking (Pillar coordinator: M. Dosanjh)

• Transnational access (Pillar coordinator J. Debus)

MedAustron involved in WP 2: Concepts and terms for dose volume parameters and for outcome assessment in hadron-therapy integrating applied biology, medical physics and clinical medicine
MedAustron and European projects

- INTERREG
  RegIonCo (Regional Ion-therapy Co-operation)
  Austrian-Hungarian Cross-border
  EBG MedAustron Lead Partner

Also strong cooperation with Medical University Vienna
1 PhD student (Supervisor: D. Georg) (H ions)
MedAustron and European projects

- INTERREG
  RegIonCo (Regional Ion-therapy Co-operation)

![Work-packages diagram]

- Transnational image management for ion therapy and IT network
- Joint utilisation of MedAustron-Research
- Principles of treatment planning with helium ions
- Epidemiological survey in Hungary
- Molecular imaging
- Logistics of patients' management
- Project management
- Regional development
- Communication and dissemination
Transnational image management for ion therapy and IT network
(WP Leader: Austrian Institute of Technology)
Scenario I
Patient referral **without** pre-irradiation

**Possible data input from referring hospital**
- Patient base data
- Medical relevant data
  - Histological data
  - Surgical report
  - Other findings
- CT/MRI/PET-CT/US

**Available data output from MedAustron**
- RT planning documents
  - Applied dose
- Medical report
Scenario II
Patient referral with pre-irradiation

Possible data input from referring hospital

- Patient base data
- Medical relevant data
  - Histological data
  - Surgical report
  - Other findings
- CT/MRI/PET-CT/US
- RT plan + applied dose

Available data output from MedAustron

- RT planning documents
  - Applied dose
  - Sum dose
- Medical report
Scenario III
Patient referral with pre-irradiation

Possible data input from referring hospital
- Patient base data
- Medical relevant data
  - Histological data
  - Surgical report
  - Other findings
- CT/MRI/PET-CT/US
- RT plan + applied dose

Electronic Health Record

Available data output from MedAustron
- RT planning documents
  - Applied dose
  - Sum dose
- Medical report
Centres for Therapeutic Radiology and Oncology in Austria
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• **Implementation strategy**
Implementation strategy

• Collaborations with European partners
  – CERN (Geneva, Switzerland)
  – CNAO (Pavia, Italy)
  – PSI (Villigen, Switzerland)

• Building up an EBG MedAustron core team
  – Accelerator physics etc. (at CERN ~ 35 employees)
Implementation strategy

- **Collaborations with European partners**
  - CERN (Geneva, Switzerland)
  - CNAO (Pavia, Italy)
  - PSI (Villigen, Switzerland) i.e. Training, Gantry design...

- **Building up an EBG MedAustron medical team**
  - **Medicine, medical physics,**
    - Cooperations with Austrian Universities and Hospitals
    - Training of radiation oncologists and medical physicists in Austria paid by EBG MedAustron

- **MedTech Master's Degree programme**
  Functional Imaging, Conventional and Ion Radiotherapy
  (Univ. of Applied Sciences Wiener Neustadt)
ULICE

Regional level
National level
International level

Universities

MedAustron Wiener Neustadt

ÖGRO

Hospitals

Austria

Europe