

Primary standards and traceable measurement methods
for X-ray emitting electronic brachytherapy devices



Creating Impact

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Goal and summary

- The primary aim of this WP is to deliver project results outside the project consortium to relevant stakeholders, end-user communities, and interested parties;
- Therefore, contrary to technical WPs, all partners are involved in most of the activities.
- All contributions to this workpackage should be recorded into the „**Output and impact report**“ which is an Excel sheet;
 - Available on the SharePoint (Work_Packages/WP5)
 - I maintain this report;
 - **Please keep me informed by email about all your relevant impact activities!**
 - Standards and regulatory activities; peer reviewed open access scientific publications; conference presentations and posters; training; other dissemination; follow-on collaborations; end user uptake and exploitation; applications for patents, trademarks, registered designs, exploitable results, future events, open research data.

MSU meeting

- September 2021 – online meeting with Euramet MSU „Understanding 18NRM02 PRISM-eBT stakeholder interactions and generating impact“
- Need to work more on:
 - Peer-reviewed papers
 - *(most of them near the end of the project)*
 - Newsletter and periodical info to various interested groups, e.g. medical physicists societies
 - Interactions with stakeholders – know their needs and presentation of project results
 - *(most important stakeholders already as project collaborators)*
 - Think more about the exploitation of the results after the end of the project.
 - *(exploitation plan)*

Tasks

- Task 5.1: Knowledge transfer
- Task 5.2: Training
- Task 5.3: Uptake and exploitation

List of activities

Activity	Description	Status	Involved partners
5.1.3	Development and maintenance of open access project web site	<p>The website is finalized, maintained and periodically updated.</p> <p>finished, periodically updated</p>	CMI

www.ebt-empir.eu

- It includes:
 - Project overview with a list of partners and stakeholders;
 - Information about former and upcoming project meetings and workshops;
 - **Impact section with links to publishable results** (e.g., conference presentations, posters, papers, catalogue of eBT spectra);
 - Contact form for stakeholder registration.

List of activities

Activity	Description	Status	Involved partners
5.1.4	Development and maintenance of restricted access project web site	The restricted access site (NPL SharePoint) is finalized, maintained and periodically updated. finished, periodically updated	NPL

npluk.sharepoint.com

- NPL SharePoint is used to store restricted documents like project documents, presentations from project meetings, internal project reports, data sets etc.

List of activities

Activity	Description	Status	Involved partners
5.1.5	Development and maintenance of mailing list	Mailing list developed and maintained by PTB finished, periodically updated	PTB, all

- PTB, with support from all partners, will contact eBT source manufacturers, regulators and standardisation bodies and professional organisations of medical physicists, inviting them to join a mailing list to receive information on the progress of the project, and to become formal collaborators.
- Throughout the project, PTB with support from all partners will email the stakeholders in this list to update them on the project.

List of activities

Activity Description	Status	Involved partners
5.1.6 Conference contributions	Relevant during the whole duration of the project. Ongoing.	CMI, all

- 11 entries in the Impact Report
- Presentations or poster contributions to relevant international conferences;
 - **Including online conferences;**
- **Please always inform me about any of your conference contribution!**
- **All contributions must:**
 - Display the EMPIR logo and the EU emblem;
 - Available on the project web site;
 - Acknowledge the funding as follows:
 - ***This project 18NRM02 PRISM-eBT has received funding from the EMPIR programme co-financed by the Participating States and from the European Union’s Horizon 2020 research and innovation programme.***



The EMPIR initiative is co-funded by the European Union's Horizon 2020 research and innovation programme and the EMPIR Participating States

List of activities

Activity Description	Status	Involved partners
5.1.7 Peer-reviewed papers	Relevant during the whole duration of the project. Ongoing.	CMI, all

- 2 entries in the Impact Report;
- The total of at least 6 such paper has to be submitted, including the ones mentioned in technical WPs (we have two currently);
- Most of such publications should be **the result of a collaborative effort from partners from different countries;**
- Must be submitted to peer-reviewed journals;
- Journals do not have to have an impact factor;
- **Acknowledge the funding** with the same phrase as on posters;
- **Must be open access no later than 6 months from publication;**
 - non-open access peer-reviewed papers cannot be counted in the projects' or programme's statistics, cannot be accepted in project reports or as project outputs;
- Must have clickable links (persistent identifiers e.g. DOIs);
- Must be uploaded into the EURAMET repository;
 - Contact me and I will upload the paper by myself.
- **Please always inform me about all your planned, submitted and accepted papers!**

List of activities

Activity	Description	Status	Involved partners
5.1.8	Dissemination of two Good Practice Guides	Relevant when the GPGs will be prepared. not started	CMI, all

- The two Good Practice Guides (GPGs) prepared in A1.2.5 and A3.3.6 will be uploaded to the project website by CMI. The GPGs will be further disseminated to manufacturers of eBT devices, organisations for standardisation and quality assurance in radiotherapy via email and presentations at standardisation meetings.

List of activities

Activity Description	Status	Involved partners
5.1.9 Dissemination to standards bodies and committees	Relevant during the whole duration of the project. ongoing	PTB, all

- 9 entries in the Impact Report;
- The representatives on the corresponding committee or working group (WG) from the partners will jointly ask the chairperson to include a point in the agenda to briefly present the outputs of the project related to the WG activities and ask for comments. Where appropriate a written report will be submitted for consideration by the committee or WG;
 - Specifically written in the protocol:
EURAMET-TC-IR, IAEA, BIPM CCRI(I), NCS (MAASTRO, UH, VSL), ISO TC85 SC2/WG2 (CEA), BNEN/AFNOR (CEA), DIN6803-3.
 - Bold – no entry in the Impact Report so far
- As this is a normative project, we should focus on this activity and inform appropriate committees.

List of activities

Activity Description	Status	Involved partners
5.1.10 Organization of a workshop	Planned for 2022. not started	CEA, all

- This is one of the two planned workshops.
- CEA, with support from the project partners, will organise a conference/workshop that will be held in the last months of the project. This will aim to disseminate the results of the project among the clinical, manufacturing and scientific community and to get feedback from final users to allow the best traceability to primary standards;
- Possibly an online event.

Task 5.2: Training

Activity Description	Status	Involved partners
5.2.1 Workshop for stakeholders	Planned for 2022. not started	PTB, all

- This is the other of the two planned workshops.
- The workshop will present the progress of the project to stakeholders from the clinical, scientific, and manufacturing sector, standardisation bodies, and other interested parties. Outside experts will be invited to give presentations.
- Planned for the end of the project, possibly at PTB.

Task 5.2: Training

Activity Description	Status	Involved partners
5.2.2 Technical visits	Relevant during the whole duration of the project. ongoing	CMI, all

- At least three technical visits between project partners will be organised to ensure good collaboration and training within the consortium. In addition, scientific visits will be organised in connection with project meetings.
- **Please keep me informed if you plan to visit (or already visited) a project partner for the project purposes;**
- Please note that a **written summary** of the visit will be required. One short paragraph is sufficient.

Task 5.3: Uptake and exploitation

Activity Description	Status	Involved partners
5.3.1 Exploitation plan	<p>Relevant during the whole duration of the project.</p> <p>finished, periodically updated</p>	PTB, all

- Description how the results of the project will be further spread among interested groups after the end of the project. Typically:
 - Calibration service, some database made public, updated CMCs, international comparison, IP protection.

A5.3.1: Exploitation plan (cont.)

- **Absorbed dose to water at 1 cm water depth (Task 1.1);**
 - New “eBT equivalent” X-ray qualities will be adopted at several project partners NMI resulting in new calibration services for eBT devices.
 - A Good Practice Guide on the establishment of a calibration procedure using secondary transfer standards for the measurement of absorbed dose rate to water at 1 cm depth will be provided to Standards Developing Organisations for the dissemination of the methodology.
- **Absorbed dose to water at the surface (Task 2.1) and Conversion of absorbed dose to water at the surface to a depth of 1 cm (Task 2.2);**
 - A protocol for calibration and recommended best practice will be developed and documented.
- **Radiation detectors for the measurement of 3D dose distributions (WP3 + WP4).**
 - The most suitable detector systems and measurement phantoms could be developed into a commercial product which could be sold to the end users of eBT devices in radiotherapy departments.
- **Catalogue of spectra (A5.3.2)**
 - The catalogue is available online.
 - The catalogue is used as an input for realisation of "equivalent eBT" spectra" with common X-ray generators for measurements in laboratory conditions.
- **Preparation for future guides of practice and preparations towards the future establishment of a new calibration service in terms of D_w**
 - In the IAEA-Brachytherapy Code of Practice, which is currently in preparation, it was decided to include aspects of dosimetry for eBT derived from this project in the Annex.
 - In Germany, it was decided to start an ad hoc DIN-Working group regarding dosimetry for eBT.

Task 5.3: Uptake and exploitation

Activity	Description	Status	Involved partners
5.3.2	Catalogue of eBT X-ray spectra	<p>Some spectra obtained from manufacturers, project partners, and by measurements; the compilation of the catalogue is ongoing.</p> <p>finished</p>	CMI

- Available on the project website.

Task 5.3: Uptake and exploitation

Activity	Description	Status	Involved partners
5.3.3	Preparations towards the future establishment of a new calibration service	Relevant at the later stage of the project not started	PTB

- PTB will initiate the preparations towards the future establishment of a new calibration service in terms of D_w for each of the specific devices investigated in the project.

Thank you for your attention!

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