



Project title: Implementing verifiable oncological imaging by quality assurance and optimisation

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Deliverable D2.1 Project information on partners' websites

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Disclaimer

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Health and Digital Executive Agency (HaDEA). Neither the European Union nor the granting authority can be held responsible for them.

Abbreviations

EU European Union

HaDEA European Health and Digital Executive Agency

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1. Introduction

This deliverable presents the implementation of one of the dissemination activities under work package 2, Task 2.2 – publication of project related information on partners' websites.

The webpage created by EIBIR (Project Coordinator) on its own website (www.eibir.org) will serve throughout the lifetime of the project as the main webpage of the i-Violin project where all the relevant updates will be published. Detailed information about the webpage and its content is presented in “Chapter 2 – i-Violin main webpage”.

In addition, each project partner has created on their institution's website, a page dedicated to the project. Details about the respective webpages are presented in “Chapter 3 – i-Violin project information on project partners' websites”.

2. i-Violin main webpage

The i-Violin main webpage has been created as a sub-page on the Project Coordinator's website. This will serve as the main information hub about any results and dissemination activities throughout the lifetime of the project.

The following sections have been created:

- main page with a short description of the project, including a short “facts and figures”
- links to secondary pages:
 - partners – list of project partners
 - objectives – present the objectives of the project as laid out in the Grant Agreement
 - work packages – list of the work packages
 - deliverables – public deliverables will be uploaded here after formal approval by the funding agency, HaDEA
 - press releases – a page dedicated to press releases; the first press release announcing the kick-off of the project has already been published

Screenshots of the page are included in Annex 1 to this report.

3. i-Violin project information on project partners' websites

In addition to the main webpage of the project available on the Project Coordinator's website, each project partner has created on their institution's website, a page dedicated to the project. In Table 1 the links to the respective webpages are provided. In addition, screenshots of these pages are presented in Annex 2.

The information on these webpages is available in both English and the respective national language, and includes the following elements:

- Project's logo
- Project's objectives

- Disclaimer
- EU (co-funding) logo + funding statement
- Details about the role in the project of the respective institution
- Link to the main webpage of project hosted on EIBIR's website: <https://www.eibir.org/projects/i-violin/>
- Links to any dissemination activity of the respective institution (press releases, conference participation, etc.) that will be carried out throughout the lifetime of the project

Table 1. Links to the webpages hosted on project partners' websites

No.	Institution	Acronym	Link to i-Violin webpage
1	EIBIR Gemeinnützige GmbH zur Förderung der Erforschung der Biomedizinischen Bildgebung	EIBIR	https://www.eibir.org/projects/i-violin/ (English language)
2	Otto-Von-Guericke-Universität Magdeburg	OvGU	https://www.lms.ovgu.de/lms/en/Research/CURRENT+projects/i_Violin+%7C+Oncological+Imaging+Quality+assurance+_+optimisation-p-364.html (English language)
3	Universitätsmedizin der Johannes Gutenberg-Universität Mainz	UMC-Mainz	https://www.unimedizin-mainz.de/radiologie/forschung/drittmittelprojekte/eu-projekt-i-violin.html#c260561 (English and German language)
4	Instituto Politecnico de Coimbra	IPC	https://www.estesc.ipc.pt/index.php/escola/id/i-violin/i-violin-en/ (English language); https://www.estesc.ipc.pt/index.php/escola/id/i-violin/ (Portuguese language)
5	Panepistimio Kritis	UoC	http://www.english.med.uoc.gr/?q=node/230 (English language) https://med.uoc.gr/researchprojects-i-violin-gr/ (Greek language)
6	Klinička Bolnica Dubrava Zagreb	UCHD	https://www.kbd.hr/en/departments/clinical-department-of-diagnostic-and-interventional-radiology/projects/i-violin-2/ (English language); https://www.kbd.hr/odjeli-zavodi-klinike/klinicki-zavod-za-dijagnosticku-i-intervencijsku-radiologiju/projekti/i-violin/ (Croatian language)
7	Univerzitetni Klinični Center Ljubljana	UMCL	https://www.kclj.si/index.php?dir=/about_us/news_from_us/i-violin (English language); https://www.kclj.si/index.php?dir=/strokovna_javnost/izobrazevanje_in_raziskovanje/evropski_projekti/i-violin (Slovenian language)
8	Katholieke Universiteit Leuven	KUL	https://gbiomed.kuleuven.be/english/research/50000677/i-Violin (English language)
9	University College Dublin, National University of Ireland, Dublin	UCD	https://www.ucd.ie/medicine/research/i-violin/ (English language)
10	Sateilyturvakeskus	STUK	https://stuk.fi/en/iviolin-guidance-for-optimization-of-oncological-imaging (English language);

		https://stuk.fi/iviolin-ohjeistusta-syopapotilaiden-kuvantamisen-optimointiin (Finish language)
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Annexes

Annex 1

Project partner 1 (EIBIR) - EIBIR Gemeinnützige GmbH zur Förderung der Erforschung der Biomedizinischen Bildung (DE) / European Institute for Biomedical Imaging Research (EN)

The screenshot shows the main webpage for the i-Violin project. At the top, there is a navigation menu with links for HOME, ABOUT, SERVICES, NEWS, INITIATIVES, OPEN FUNDING CALLS, PROJECTS, and MEMBERS. The iVIOLIN logo is prominently displayed, along with the tagline: "Implementing verifiable oncological imaging by quality assurance and optimisation".

The main content area is divided into two columns. The left column contains introductory text about the project's duration (September 2022 – August 2024), its funding (EU4Health programme 2021-2027, EU4H-2021-PJ-03 Action grants), and its objectives. It also mentions that the project brings together 10 partners from 9 countries. The right column, titled "Facts and figures", lists the coordinator (European Institute for Biomedical Imaging Research (EIBIR)), the number of partners (10), the start date (September 1, 2022), the end date (August 31, 2024), and the total funding (€ 1,172,487.81). Below this, there is a disclaimer stating that the project is co-funded under the EU4Health Programme 2021-2027 under grant agreement no. 101056832, and that the views expressed are those of the author(s) only.

At the bottom of the page, there is a "Co-funded by the European Union" logo. Below the main content, there are several green buttons for navigation: Partners, Objectives, Work Packages, Deliverables, and Press releases. The footer contains contact information for the European Society of Radiology (ESR) and various legal notices.

Figure 1. i-Violin main webpage (www.eibir.org/projects/i-violin/)

EUROPEAN INSTITUTE
FOR BIOMEDICAL
IMAGING RESEARCH

HOME ABOUT SERVICES NEWS INITIATIVES OPEN FUNDING CALLS PROJECTS MEMBERS

LOGIN

i-Violin project launched on 1 September 2022

Several ongoing projects and recent surveys have demonstrated disparities in oncological imaging procedures across Europe. The two-year i-Violin project under the EU4Health program aims to address these and improve optimisation and harmonisation of oncological imaging procedures in Europe and to ensure their broad adoption to improve the quality and safety of cancer care for Europe's patients.

In recent years, several EU-funded projects have advanced the understanding of imaging and their effects, on which i-Violin will build upon; mainly the Horizon 2020 MEDIRAD project (no. 755523, www.medirad-project.eu) completed in February 2022 and the ongoing SINFONIA project (no. 945196, www.sinfonia-appraisal.eu), both related to dose determination in three-dimensional imaging as well as image quality assessment.

i-Violin aims to disseminate the image quality assessment tool developed in MEDIRAD for chest CT in hospitals throughout Europe and adjust it for imaging procedures in the abdominal and pelvic regions, for which no satisfactory tool exists. The outcome of available commercial software for evaluating patient-specific dose indicators will be cross-validated against more sophisticated dose-evaluation tools for determining organ doses dependent on patient parameters and image settings as developed for chest CT. Furthermore, only a combination of image-quality assessment and dose evaluation on the same patient images can allow patient- and indication-specific optimisation with respect to patient radiation protection. A European database will be established for CT images resulting from different imaging parameters, corresponding patient dose indicators and image quality indicators, and recommendations will be given for these approaches.

European adoption of optimisation measures for image quality assessment and dose evaluation in member states must be fostered through dissemination of i-Violin's deliverables among hospitals, policy makers, societies and other stakeholders and implementation of education and training activities. i-Violin will contribute to establishing a harmonised and standardised oncological imaging approach, and a targeted education and training programme for radiologists, radiographers and medical physicists will accompany dissemination and foster uptake. Education and training programmes and the standardisation efforts of the EC tender project EUCLID, the EUTEMPE-RX project and the Horizon 2020 EURAMED rocc-n-roll project (no. 899995) (<https://roccnroll.euramed.eu/>) will be taken into account.

Prof. Christoph Hoeschen, i-Violin's Scientific Coordinator from Otto-von-Guericke University Magdeburg, Germany, declared: "i-Violin is an opportunity to implement in clinical practice standardised approaches in oncological imaging which include tools for quantifiable image quality assessment and software solutions for patient dose determination. We will take advantage of the latest scientific developments produced within relevant EC-funded projects to the benefit of Europe's cancer patients".

The project started on 1st of September 2022 and consists of the following partners:

1. European Institute for Biomedical Imaging Research (Project Coordinator), Austria
2. Otto-von-Guericke University Magdeburg (Scientific Coordinator), Germany
3. University Medicine Mainz (of the Johannes Gutenberg University of Mainz), Germany
4. Polytechnic Institute of Coimbra, Portugal
5. University of Crete, Greece
6. Clinical Hospital Dubrava (KB Dubrava), Croatia
7. University Medical Centre Ljubljana, Slovenia
8. KU Leuven, Belgium
9. University College Dublin, National University of Ireland, Dublin, Ireland
10. Finnish Radiation and Nuclear Safety Authority, Finland

The project is co-funded under the EU4Health Health Programme 2021-2027 (grant agreement no. 101056832). It fully supports the Europe's Beating Cancer Plan objective to ensure high standards in cancer care, the SAMIRA action plan and the EU4Health Programme's general objective of improving and fostering health in the European Union. The project is also in line with the ESR EuroSafe Imaging and the EURAMED strategic research agendas.

Visit www.eibir.org/projects/i-violin/ for regular project updates.

For any enquiries contact the EIBIR office at office@eibir.org or abucur@eibir.org.

Figure 2. i-Violin first press release (www.eibir.org/projects/i-violin/press-releases/launched/)

Annex 2

Project partner 2 (OvGU) - Otto-Von-Guericke-Universitaet Magdeburg (DE) / Otto-von-Guericke University Magdeburg (EN)

**OTTO VON GUERICKE
UNIVERSITÄT
MAGDEBURG**

**CHAIR OF MEDICAL
SYSTEMS TECHNOLOGY**

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[DIRECTLINKS](#)

Home > Research > Current projects > i-Violin | Oncological imaging: Quality assurance & optimisation

i-Violin | Oncological Imaging: Quality assurance & optimisation

i-Violin (Implementing verifiable oncological imaging by quality assurance and optimisation) is a 24-month project (September 2022 – August 2024) co-funded by the EU under the EU4Health programme 2021-2027, EU4H-2021-PJ-03 Action grants for a project on the quality and safety of radiation technology in diagnosis and treatment of cancer which brings together 10 partners from 9 countries.

i-Violin Objectives

The objectives of i-Violin are to satisfy the clearly identified need to optimise and harmonise oncological imaging procedures in Europe and ensure their broad adoption.

The main objectives of i-Violin are:

1. To implement a standardised way of optimisation in oncological imaging approaches in clinical practice by adapting and deploying tools for quantifiable image quality assessment as well as by validating commercially available software solutions for patient dose determination in imaging procedures, using the output of the MEDIRAD and other EC-funded projects.
2. To implement such tools and the proposed optimised procedures in (university) hospitals throughout Europe that are members of the i-Violin consortium,
3. To disseminate these tools and optimised procedures to interested hospitals and healthcare providers in Europe to contribute towards a harmonised and standardised oncological imaging approach.
4. To provide a suitable education and training programme for radiologists, radiographers and medical physicists to be able to use the harmonisation tools.
5. To disseminate the results to policymakers, the medical societies and other relevant stakeholders to foster uptake and implementation.

The current disparities in oncological imaging procedures in Europe are evident from several projects and surveys conducted by the EuroSafe Imaging campaign, which i-Violin can address at the European level to improve cancer care for Europe's patients.

Against the multiple hurdles preventing optimisation of oncological imaging approaches, i-Violin aims to disseminate the image quality assessment tool developed in MEDIRAD for chest CT in hospitals throughout Europe and adjust it for imaging procedures in the abdominal and pelvic regions, for which no satisfactory tool exists. The outcome of available commercial software for evaluating patient-specific dose indicators will be cross-validated against more sophisticated dose-evaluation tools for determining organ doses dependent on patient parameters and image settings as developed for chest CT. Furthermore, only a combination of image-quality assessment and dose evaluation on the same patient images can allow patient- and indication-specific optimisation with respect to patient radiation protection.

A European database will be established for CT images resulting from different imaging parameters, corresponding patient dose indicators and image quality indicators, and recommendations will be given for these approaches.

European adoption of optimisation measures for image quality assessment and dose evaluation in member states must be fostered through dissemination of i-Violin's deliverables among hospitals, policy makers, societies and other stakeholders and implementation of education and training activities. i-Violin will contribute to establishing a harmonised and standardised oncological imaging approach, and a targeted education and training programme for radiologists, radiographers and medical physicists will accompany dissemination and foster uptake.

EIBIR project page
[Click here for project details and updates on www.eibir.org](#)

Conducting Scientists

Prof. Christoph Hoeschen

M.Sc. Kunal Kumar

Last Modification: 19.12.2022 - Contact Person: Webmaster

Project partner 3 (UMC-Mainz) - Universitaetsmedizin der Johannes Gutenberg-Universitaet Mainz (DE) / University Medicine Mainz (of the Johannes Gutenberg University of Mainz) (EN)

Implementing verifiable oncological imaging by quality assurance and optimisation

The Department of Diagnostic and Interventional Radiology is a partner in the EU project i-Violin, which is funded under the "EU4Health Program 2021-2027, EU4H-2021-PJ-03 Action grants for a project on the quality and safety of radiation technology in diagnosis and treatment of cancer" for two years starting in September 2022.

Diagnostic procedures in radiology have made great progress in recent years, especially computed tomography (CT) is an essential component in the care of patients, particularly in oncological diseases. In terms of medically induced radiation exposure, CT has the highest relative share, far ahead of all other methods. Therefore, the optimization of examination protocols and image quality is a particularly important task here. Both are addressed by the EU project i-Violin.

The main goals of i-Violin are:

- To introduce a standardized procedure for optimizing oncology imaging procedures in clinical practice by adapting and deploying tools for quantifiable image quality assessment and by validating commercially available software solutions for determining patient dose in imaging procedures using the results of MEDIRAD and other EU-funded projects.
- Implementation of these tools and the proposed optimized procedures in (university) hospitals across Europe that are members of the i-Violin consortium.
- Disseminate these tools and optimized procedures to interested hospitals and healthcare providers in Europe as a contribution to a harmonized and standardized approach to oncology imaging.
- Provide an appropriate education and training program for radiologists, radiographers, and medical physicists to use the harmonization tools.
- Disseminate results to policy makers, medical societies, and other relevant stakeholders to promote adoption and implementation.

The current disparities in oncology imaging practices in Europe are evident from several projects and surveys conducted by the EuroSafe Imaging campaign. Given the numerous barriers to optimizing oncology imaging procedures, i-Violin aims to disseminate the image quality assessment tool developed in MEDIRAD for chest CT in hospitals across Europe and to adapt it for abdominal and pelvic imaging procedures, for which no satisfactory tool exists.

A European database for CT images with different imaging parameters, corresponding patient dose indicators and image quality indicators will be established and recommendations for these approaches will be given.

- Implementierung dieser Instrumente und der vorgeschlagenen optimierten Verfahren in Universitäts- und Krankenhäusern in ganz Europa, die Mitglieder des i-Violin-Konsortiums sind.
- Verbreitung dieser Instrumente und optimierten Verfahren an interessierte Krankenhäuser und Gesundheitsdienstleister in Europa als Beitrag zu einem harmonisierten und standardisierten Ansatz für die onkologische Bildgebung.
- Bereitstellung eines geeigneten Ausbildungs- und Trainingsprogramms für Radiologen, Radiologen und Medizintechniker, damit sie die Harmonisierungsinstrumente nutzen können.
- Verbreitung der Ergebnisse an politische Entscheidungsträger, medizinische Fachgesellschaften und andere relevante Interessengruppen, um die Akzeptanz und Umsetzung zu fördern.

Die derzeitigen Ungleichheiten bei onkologischen Bildgebungsverfahren in Europa sind aus mehreren Projekten und Erhebungen der EuroSafe Imaging-Kampagne ersichtlich. Angesichts der zahlreichen Hürden, die einer Optimierung onkologischer Bildgebungsverfahren im Wege stehen, zielt i-Violin darauf ab, das in MEDIRAD entwickelte Instrument zur Bewertung der Bildqualität für die Thorax-CT in Krankenhäusern in ganz Europa zu verbreiten und es für Bildgebungsverfahren im Bauch- und Beckenbereich anzupassen, für die es kein zufriedenstellendes Instrument gibt.

Es wird eine europäische Datenbank für CT-Bilder mit verschiedenen Bildgebungsparametern, entsprechenden Patientendosisindikatoren und Bildqualitätsindikatoren aufgebaut und Empfehlungen für diese Ansätze gegeben.

Die europäische Übernahme von Optimierungsmaßnahmen für die Bewertung der Bildqualität und der Dosis in den Mitgliedstaaten muss durch die Verbreitung der Ergebnisse von i-Violin in Krankenhäusern, bei politischen Entscheidungsträgern, Gesellschaften und anderen Interessengruppen sowie durch die Durchführung von Aus- und Weiterbildungsmaßnahmen gefördert werden. i-Violin wird dazu beitragen, ein harmonisiertes und standardisiertes Konzept für die onkologische Bildgebung zu schaffen, und ein gezieltes Aus- und Weiterbildungsprogramm für Radiologen, Röntgenassistenten und Medizintechniker wird die Verbreitung begleiten und die Übernahme der Ergebnisse fördern.

Zur Erreichung der Ziele wurde die Arbeit von i-Violin in 7 Arbeitspakete unterteilt, wobei die Klinik für Radiologie die Leitung von Arbeitspaket 5 übernimmt.

- Arbeitspaket 1: Projektleitung und Koordination
- Arbeitspaket 2: Verbreitung und Kommunikation
- Arbeitspaket 3: Bewertung der Auswirkungen (UCD)
- Arbeitspaket 4: Anpassung bestehender Instrumente zur Bewertung der Bildqualität und Dosisbewertung für die CT-Bildgebung bei Krebspatienten
- Arbeitspaket 5: Implementierung einer klinischen Datenbank und Datenerfassung
- Arbeitspaket 6: Optimierung onkologischer Bildgebungsverfahren (CT) auf der Grundlage von Protokollen für ausgewählte klinische Indikationen
- Arbeitspaket 7: Aus- und Weiterbildung zu Bildqualitätsbewertungsinstrumenten und entsprechende Optimierung

European adoption of optimization measures for image quality and dose assessment in Member States needs to be promoted by disseminating the results of i-Violin to hospitals, policy makers, societies, and other stakeholders, and by conducting education and training activities. i-Violin will help to create a harmonized and standardized approach to oncology imaging, and a targeted education and training program for radiologists, radiographers, and medical physicists will accompany dissemination and promote adoption of the results.

To achieve its goals, the work of i-Violin has been divided into 7 work packages, with the Department of Radiology leading work package 5:

- Work package 1: Project management and coordination
- Work package 2: Dissemination and communication
- Work package 3: Impact evaluation (UCD)
- Work package 4: Adaptation of existing image quality and dose assessment tools for CT imaging in cancer patients
- Work package 5: Implementation of a clinical database and data collection.
- Work package 6: Optimization of oncologic imaging (CT) procedures based on protocols for selected clinical indications.
- Work package 7: Education and training on image quality assessment tools and corresponding optimization

Role of the Department of Radiology

The Department of Radiology will contribute to the medical topics, data collection, image quality assessment and optimization of examination protocols on the one hand and provide the central IT infrastructure for the exchange of image data and the collection of additional relevant data in the form of structured templates on the other hand.

Facts

- Coordinator: European Institute for Biomedical Imaging Research (EIBIR)
- Number of partners: 10
- Start date: September 1, 2022
- End date: August 31, 2024
- Total funding: € 1.172.487,81

EIBIR project page
Click here for project details and updates at <https://www.eibir.org/projects/i-violin>

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Rolle der Klinik für Radiologie

Die Klinik für Radiologie wird einerseits bei den medizinischen Themen, Datenerhebung, Bewertung der Bildqualität und Optimierung von Untersuchungsprotokollen mitwirken und andererseits die zentrale IT-Infrastruktur für den Austausch der Bilddaten und die Erhebung zusätzlicher, relevanter Daten in Form strukturierter Templates bereitstellen.

Fakten

- Koordinator: Europäisches Institut für Biomedizinische Bildgebungsforschung (EIBIR)
- Anzahl der Partner: 10
- Starttermin: 1. September 2022
- Endtermin: 31. August 2024
- Gesamtförderung: € 1.172.487,81

EIBIR-Projektseite
Klicken Sie hier für Projektdetails und Updates auf <https://www.eibir.org/projects/i-violin>

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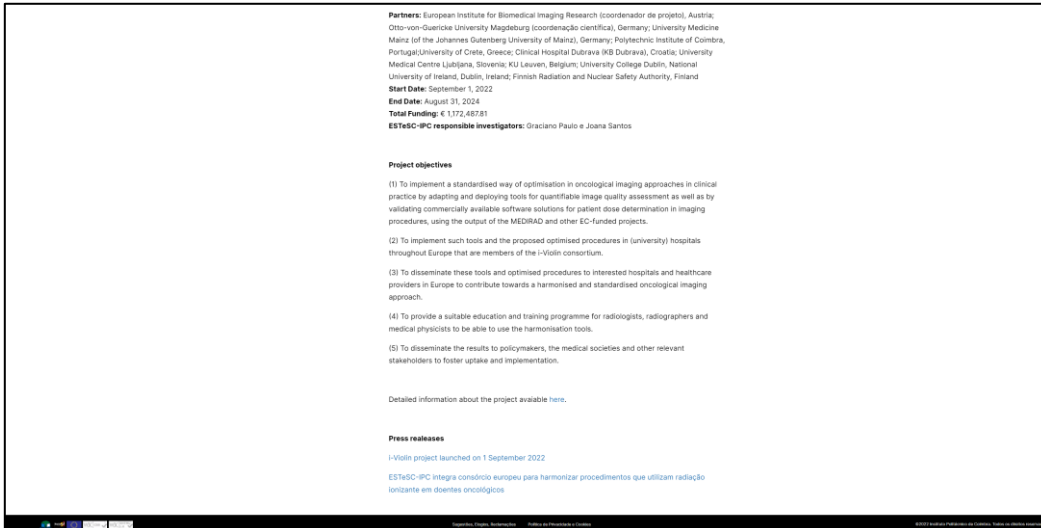
Implementing verifiable oncological imaging by quality assurance and optimisation

The Department of Diagnostic and Interventional Radiology is a partner in the EU project i-Violin, which is funded under the "EU4Health Program 2021-2027, EU4H-2021-PJ-03 Action grants for a project on the quality and safety of radiation technology in diagnosis and treatment of cancer" for two years starting in September 2022.

Implementing verifiable oncological imaging by quality assurance and optimisation

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Project partner 4 (IPC) - Instituto Politecnico de Coimbra (PT) / Polytechnic Institute of Coimbra (EN)



Project partner 5 (UoC) - Panepistimio Kritis (GR)/ University of Crete (EN)

<p>The screenshot shows the English version of the i-violin/en website. It features the University of Crete School of Medicine logo and navigation tabs for 'The School', 'Undergraduate', 'Postgraduate', and 'Research'. The main heading is 'i-violin/en' with the iVIOLIN logo. Below it, the title reads 'i-Violin (Implementing verifiable oncological imaging by quality assurance and optimisation)'. A short paragraph describes the project as a 24-month initiative co-funded by the EU. The 'i-Violin Objectives' section lists five main goals, including standardizing optimization in clinical practice, disseminating tools, and providing education. A list of work packages follows, detailing project management, dissemination, evaluation, clinical data collection, and training.</p>	<p>This page details the University of Crete's role in the project. It is divided into two main sections: '1. Radiation dose and image quality assessment' and '2. Education and Training'. The first section explains the need for optimization in oncological CT procedures and the use of Monte-Carlo simulations. The second section describes the development of an EBT programme for CT procedures. At the bottom, there is a banner for the 'Co-funded by the European Union' with the EU flag and a disclaimer stating the project is co-funded under the EU4Health Programme 2021-2027.</p>
<p>The screenshot shows the Greek version of the i-violin/gr website. It includes the University of Crete logo and navigation tabs for 'The School', 'Undergraduate', 'Postgraduate', and 'Research'. The title is 'i-violin/gr' with the iVIOLIN logo. The main heading is 'i-Violin (Implementing verifiable oncological imaging by quality assurance and optimisation)'. The text describes the project as a 24-month initiative co-funded by the EU. The 'i-Violin Objectives' section lists five main goals, including standardizing optimization in clinical practice, disseminating tools, and providing education. A list of work packages follows, detailing project management, dissemination, evaluation, clinical data collection, and training.</p>	<p>This page details the University of Crete's role in the project in Greek. It is divided into two main sections: '1. Επίτευξη δόσης ακτινοβολίας και αξιολόγηση ποιότητας εικόνας' and '2. Εκπαίδευση και Κατάρτιση'. The first section explains the need for optimization in oncological CT procedures and the use of Monte-Carlo simulations. The second section describes the development of an EBT programme for CT procedures. At the bottom, there is a banner for the 'Co-funded by the European Union' with the EU flag and a disclaimer stating the project is co-funded under the EU4Health Programme 2021-2027.</p>

Project partner 6 (UCHD) - Klinicka Bolnica Dubrava Zagreb (HR) / Clinical Hospital Dubrava (KB Dubrava) (EN)

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i-Violin is a project that will last for two years (September 2022 – August 2024).

The project is co-financed by the European Union within the EU4Health program 2021-2027, EU4H-2021-P3-03 Action grants for a project on the quality and safety of radiation technology in diagnosis and treatment of cancer. Ten institutions from nine European countries participate in the implementation of the project, and among them is the Dubrava University Hospital with its experts employed at the Department of Diagnostic and Interventional Radiology.

The project was designed with the aim of optimizing and harmonizing the imaging methods of oncological patients, which will improve the quality of treatment of oncological patients at the European level. The existence of differences in imaging methods for oncological patients is indicated by the results of projects and research previously carried out within the framework of the *EuroSafe Imaging* initiative (an initiative of the European Society of Radiologists), which will be the basis of the activities to be carried out within the i-Violin project.

The objectives of the project are as follows:

1. to introduce standardized ways of optimizing the imaging of oncological patients with a CT device into clinical practice through the adaptation and further development of a tool for assessing the quality of radiological imaging (the first version of this tool was created within the MEDIRAD project), as well as the validation of commercially available software solutions used for assessment of patient doses
2. to implement the mentioned tools and proposed optimized imaging procedures into clinical practice at the (university) hospitals participating in the project as part of the consortium
3. to implement the mentioned tools and proposed optimized imaging procedures into clinical practice in other interested European hospitals, which will further contribute to a uniform and standardized way of imaging of oncological patients
4. to ensure the necessary education and training program for radiologists, radiographers and medical physicists related to the use of the above-mentioned tools
5. to introduce the results of the project to policy makers, professional societies in the field of medicine and other relevant participants in order to support the acceptance and implementation of these results.

More information about the i-Violin project and the achieved results of the project is available [here](#).

The i-Violin project is co-funded under the EU4Health Programme 2021-2027 under grant agreement no. 101056832.

(01) 290 2444 | HR

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i-Violin je projekt koji će trajati dvije godine (rujan, 2022. – kolovoz, 2024).

Projekt sufinancira Europska unija u okviru programa EU4Health programme 2021-2027, EU4H-2021-P3-03 Action grants for a project on the quality and safety of radiation technology in diagnosis and treatment of cancer. U provedbi projekta sudjeluje deset institucija iz devet europskih država, a među njima je i Klinička bolnica Dubrava Zagreb sa svojim stručnjacima zaposlenima u Kliničkom zavodu za dijagnostičku i intervencijsku radiologiju.

Projekt je osmišljen sa ciljem optimizacije i harmonizacije načina oslikavanja onkoloških pacijenata čime će se poboljšati kvaliteta liječenja onkoloških pacijenata na razini Europe. Na postojanje razlika u načinima oslikavanja onkoloških pacijenata ukazuju rezultati projekata i istraživanja koji su prethodno provedeni u okviru *EuroSafe Imaging* inicijative (inicijativa Europskog društva radiologa) na kojima će se temeljiti aktivnosti koje će se provesti u okviru projekta i-Violin.

Ciljevi projekta su sljedeći:

1. uvesti standardizirane načine optimizacije oslikavanja onkoloških pacijenata CT uređajem u kliničku praksu putem prilagodbe i daljnjeg razvoja alata za procjenu kvalitete radiološke snimke (prva verzija ovoga alata izrađena je u okviru MEDIRAD projekta), kao i validacije komercijalno dostupnih programskih rješenja koji se koriste za procjenu doze pacijenata
2. implementirati navedene alate i predložene optimizirane postupke oslikavanja u kliničku praksu u (sveučilišnim) bolnicama koje u projektu sudjeluju kao dio konzorcija
3. implementirati navedene alate i predložene optimizirane postupke oslikavanja u kliničku praksu u ostalim zainteresiranim europskim bolnicama čime će se dodatno pridonijeti ujednačenom i standardiziranom načinu oslikavanja onkoloških pacijenata
4. osigurati potreban program obrazovanja i osposobljavanja radiologa, radioloških tehnologa i medicinskih fizičara vezano uz uporabu izrađenih navedenih alata
5. s rezultatima projekta upoznat kreatora politike, stručna društva iz područja medicine i ostale relevantne sudionike u cilju podrške prihvatanju i implementaciji tih rezultata.

Više informacija o projektu i-Violin te o ostvarenim rezultatima projekta dostupno je [ovdje](#).

The i-Violin project is co-funded under the EU4Health Programme 2021-2027 under grant agreement no. 101056832.

Project partner 7 (UMCL) - Univerzitetni Klinični Center Ljubljana (SL)/ University Medical Centre Ljubljana (EN)

The main objectives of the project are:

- To implement a standardised way of optimisation in oncological imaging approaches in clinical practice by adopting and deploying tools for quantifiable image quality assessment as well as by validating commercially available software solutions for patient dose determination in imaging procedures, using the output of the MEDRAD and other EC-funded projects.
- To implement such tools and the proposed optimised procedures in (university) hospitals throughout Europe that are members of the i-Violin consortium.
- To disseminate these tools and optimised procedures to interested hospitals and healthcare providers in Europe to contribute towards a harmonised and standardised oncological imaging approach.
- To provide a suitable education and training programme for radiologists, radiographers and medical physicists to be able to use the harmonisation tools.
- To disseminate the results to policymakers, the medical societies and other relevant stakeholders to foster uptake and implementation.

The results of several ongoing projects and recent surveys have demonstrated disparities in oncological imaging procedures across Europe. With the i-Violin project, these differences will be addressed at the European level, with the aim of improving the treatment of oncology patients. With the international project i-Violin, the tools for assessing the quality of radiological images, which were developed in the MEDRAD project for chest CT, will be spread among medical institutions. Since the i-Violin project will also focus on abdominal and pelvic regions, image quality assessment tool developed in MEDRAD for chest CT will be adjusted for abdominal and pelvic CT.

The outcome of available commercial software for evaluating patient-specific dose indicators will be cross-validated against more sophisticated dose evaluation tools for determining organ doses dependent on patient parameters and image settings. Only a combination of image quality assessment and dose evaluation on the same patient images can allow patient- and indication-specific optimisation with respect to patient radiation protection.

A European database will be established for CT images resulting from different imaging parameters, corresponding patient dose indicators and image quality indicators, and recommendations will be given for these approaches.

In order to achieve its objectives, i-Violin's work has been mapped out in 7 work packages:

- Work Package 1: Project management and coordination
- Work Package 2: Dissemination and communication
- Work Package 3: Impact evaluation (IC2)
- Work Package 4: Adaptation of existing image quality evaluation tools and dose evaluation for CT imaging in cancer patients
- Work Package 5: Clinical database implementation and data collection
- Work Package 6: Optimisation of oncological imaging procedures (CT) based on protocols for selected clinical indications
- Work Package 7: Education and training on image quality evaluation tools and corresponding optimisation

Role of University Medical Centre Ljubljana (UMCL)

Assoc. prof. Dimitrij Kuželj, MD, specialist in radiology, head of the Clinical Institute of Radiology, Aleš Kavčič, dipl. inž. rad. and M.Sc. Urban Zofar, univ. dipl. fiz., are members of the team participating in the i-Violin project. UMCL will host one of the three workshops that will be held in Slovenia, Belgium and Croatia. At the same time, UMCL will ensure that standardised imaging protocols for the treatment of oncology patients will be tested in Slovenian hospitals in all regions.

Project data

Coordinator: EBIR - European Institute for Biomedical Imaging Research
 Number of partners: 10
 Start date: September 1, 2022
 End date: August 31, 2024
 Funding: EU4Health programme 2021-2027, E144-2021-PJ-03
 Total funding: € 1,172,487.81

EBIR project page

<https://www.ebir.org/project/violin/>

Co-funded by the European Union

POVEZAVE

KLJUČNE VEŠČINE ZA STROKOVNO ETIČNA VPRAŠANJA

PRISAJA NEŠTEHNIH UČINKOV ZDRAVIL

KAZALNIKI KAKOVOSTI

SREDIŠČE ZNANJA

SOCIALNOVARSTVENI ZAVODI

Glavne točke projekta so:

- Implementacija standardizirane načina optimizacije onkoloških slikovnih preiskav in uporaba komercialno dostopnih programskih orodij za ocenjevanje doze sevanja z uporabo podatkov pridobljenih z MEDRAD in ostalih projektov, ki jih je financirala Evropska komisija.
- Implementacija orodij in optimiziranih postopkov v evropskih univerzitetnih klinikah, ki sodelujejo pri projektu.
- Razširitev teh orodij in optimiziranih postopkov obravnave vsem bolnišničnim in zdravstvenim zaviadanjem v Evropi, da bi pripomogli k usklajeni obravnavi onkoloških bolnikov.
- Zagotovi ustrezno izobraževanje in usposabljanje radiologov, radioloških inženirjev in medicinskih fizikov za učinkovito uporabo orodij optimizacije.
- Razširitev in predstavitve rezultatov zakonodajnim organom, medicinskiim združenjem in ostalim organizacijam, ki bodo spodbujale sprejemanje in izvajanje usklajenih priporočil.

Rezultati dosedanjih evropskih projektov in medane raziskave, ki so bile izvedene pod okriljem kampanje EuroSafe Imaging, kažejo na velike razlike v slikovno diagnostičnih postopkih pri obravnavi onkoloških bolnikov v Evropi. S projektom i-Violin bodo te razlike obravnavane na evropski ravni s ciljem, da se izboljša obravnava onkoloških bolnikov. Z mednarodnim projektom i-Violin se bo v zdravstvenih ustanovah razširilo orodje za oceno kakovosti radioloških posnetkov, ki so bila razvita v projektu MEDRAD za CT prsnih organov. Ker se v projektu i-Violin osredotočamo tudi na rakava obolenja trebušnih in medeničnih organov, bodo MEDRAD orodja prilagojena še za CT trebušnih in medeničnih organov. Rezultati komercialno dostopnih orodij za ocenjevanje obremenitve bolnikov bodo primerjeni z bolj izpopolnjenimi orodji za ocenjevanje dozne obremenitve, ki je odvisna od klinične indikacije in parametrov diagnostičnega slikovnega postopka. Optimizacija obravnave in dozne obremenitve na bolnika in klinično indikacijo lahko zagotovi le kombinacija ocene kakovosti CT posnetkov in ocene dozne obremenitve istih CT posnetkov pacienta. Ustvarjena bo evropska podatkovna baza za CT posnetke, ki bodo pridobljeni z različnimi parametri in z ustreznimi indikatorji o dozi sevanja in kakovosti CT posnetkov. S pomočjo teh podatkov bodo ustvarjena in podana priporočila za optimizacijo.

Za doseganje ciljev projekta je zasnovanih sedem delovnih paketov. UKC Ljubljana sodeluje pri delovnih paketih od 2 do 7.

WP 1: Koordinacija in vodenje projekta
WP 2: Razširitev in komunikacija
WP 3: Vrednotenje vpilja
WP 4: Prilagoditev obstoječih orodij za vrednotenje kakovosti CT posnetkov in doze sevanja pri obravnavi onkoloških bolnikov
WP 5: Zbiranje podatkov in implementacija klinične podatkovne baze
WP 6: Optimizacija CT obravnave onkoloških bolnikov na podlagi protokolov za določeno klinično indikacijo
WP 7: Izobraževanje in usposabljanje o orodjih za vrednotenje kakovosti CT posnetkov in ustrezne optimizacije

Vloga UKC Ljubljana

izr. prof. Dimitrij Kuželj dr.med.spec.radiolog, predstojnik Kliničnega inštituta za radiologijo, Aleš Kavčič, dipl.inž.rad. in mag. Urban Zofar, univ.dipl.fiz. so člani skupine, ki sodeluje pri i-Violin projektu. UKC Ljubljana bo gostil eno od treh delavnic, ki bodo izvedene v Sloveniji, Belgiji in na Hrvaškem. Hranilo bo UKC Ljubljana poskrbel za testiranje standardiziranih protokolov za obravnavo onkoloških bolnikov na CT diagnostiki v obstoječih slovenskih bolnišnicah v vseh regijah.

Podatki o projektu

Koordinator: EBIR - European Institute for Biomedical Imaging Research
 Število partnerjev: 10
 Pričetek: 1. september 2022
 Zaključek: 31. avgust 2024
 Financiranje: Sponzoriran je s strani EU pod EU4Health programom 2021-2027, E144-2021-PJ-03 sredstev, ki so namenjena projektu za zagotavljanje kakovosti in varnosti radiološke tehnologije pri diagnosticiranju in zdravljenju raka.
 Proračun projekta: 1.172.487,81 EUR

Povezava do projekta

<https://www.ebir.org/project/violin/>

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Project partner 8 (KU) - Katholieke Universiteit Leuven (NL) / KU Leuven (EN)

KU LEUVEN

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Department of Imaging and Pathology

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iViolin

The Group Medical Physics and Quality Assessment, under de guidance of **Prof. Hilde Bosmans**, is happy to announce that they are partner in the European project iViolin. In this project, metrics will be developed and tested to assess the quality of clinical chest CT and abdominal CT scans that are taken for oncological applications.

The i-Violin project (Implementing verifiable oncological imaging by quality assurance and optimisation) aims to improve the accuracy and safety of imaging techniques used in the diagnosis and treatment of cancer. It is a two-year project (September 2022 – August 2024) that is co-funded by the European Union through the EU4Health programme 2021-2027, EU4H-2021-PJ-03 Action grants and brings together 10 partners from 9 different countries. The project focuses on ensuring the quality and safety of radiation technology in cancer care.

In order to achieve its objectives, i-Violin's work has been mapped out in 7 work packages and UCD will lead on WP6.

Work Package 1: Project management and coordination

Work Package 2: Dissemination and communication

Work Package 3: Impact evaluation (UCD)

Work Package 4: Adaptation of existing image quality evaluation tools and dose evaluation for CT imaging in cancer patients

Work Package 5: Clinical database implementation and data collection

Work Package 6: Optimisation of oncological imaging procedures (CT) based on protocols for selected clinical indications

Work Package 7: Education and training on image quality evaluation tools and corresponding optimisation

KU Leuven's role

KU Leuven's department of imaging and pathology staff, prof. Hilde Bosmans, will lead work package 6. The main objectives here are to determine the critical tasks and associated necessary image quality and dose evaluation for the different oncological procedures involving the use of a CT scanner. This will be achieved via establishing the parameter space that can have an impact on the quality and dose via literature study, surveys, simulations and the use of anthropomorphic phantoms. Finally WP6 will provide optimisation schemes and validation based on the acquired results to the other teams and end users.

Facts

Coordinator: European Institute for Biomedical Imaging Research (EIBIR)

Number of Partners: 10

Start Date: September 1, 2022

End Date: August 31, 2024

Total Funding: € 1,172,487.81

iViolin Objectives

The objectives of i-Violin are as follows:

1. To standardize the optimization of oncological imaging techniques in clinical practice by adapting and implementing tools for evaluating image quality and testing commercially available software for determining patient radiation doses during imaging procedures, using the results from the MEDRAD and other European Commission-funded projects.
2. To implement these tools and optimized procedures in hospitals within the i-Violin consortium throughout Europe.
3. To disseminate these tools and optimized procedures to interested hospitals and healthcare providers in Europe in order to promote a harmonized and standardized oncological imaging approach.
4. To provide training for radiologists, radiographers, and medical physicists on how to use the harmonization tools.
5. To share the results with policymakers, medical societies, and other relevant stakeholders to encourage adoption and implementation.

There are significant disparities in oncological imaging procedures in Europe, as highlighted by the EuroSafe Imaging campaign. i-Violin aims to address these disparities at the European level and improve cancer care for patients. To do this, i-Violin will disseminate the image quality assessment tool developed in MEDRAD for chest CT scans to hospitals throughout Europe, and adapt it for use in imaging procedures of the abdominal and pelvic regions, for which no satisfactory tool currently exists. The performance of commercially available software for evaluating patient-specific radiation doses will be compared to more sophisticated dose evaluation tools that consider patient parameters and image settings, as developed for chest CT scans. The combination of image quality assessment and dose evaluation on the same patient images allows for patient- and indication-specific optimization with regard to radiation protection.

i-Violin will also create a European database of CT images, patient-specific radiation doses, and image quality indicators, and provide recommendations based on these data. To encourage the adoption of optimization measures for image quality assessment and dose evaluation in member states, i-Violin will disseminate its findings to hospitals, policy makers, societies, and other stakeholders, and provide education and training to radiologists, radiographers, and medical physicists. By doing so, i-Violin hopes to establish a harmonized and standardized oncological imaging approach in Europe.

EIBIR project page

[Click here for project details and updates on www.eibr.org](#)

Co-funded by

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Last update: 23 Dec 2022

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Project partner 9 (UCD) - University College Dublin, National University of Ireland, Dublin (EN)

UCD PARTNERS WITHIN EU FUNDED I VIOLIN PROJECT

i-Violin (Implementing verifiable oncological imaging by quality assurance and optimisation) is a 24-month project (September 2022 – August 2024) co-funded by the EU under the EU4Health programme 2021-2027, EU4H-2021-PJ-03 Action grants for a project on the quality and safety of radiation technology in diagnosis and treatment of cancer which brings together 10 partners from 9 countries.

iVIOLIN

iViolin Objectives

The objectives of i-Violin are to satisfy the clearly identified need to optimise and harmonise oncological imaging procedures in Europe and ensure their broad adoption.

The main objectives of i-Violin are:

- To implement a standardised way of optimisation in oncological imaging approaches in clinical practice by adapting and deploying tools for quantifiable image quality assessment as well as by validating commercially available software solutions for patient dose determination in imaging procedures, using the output of the MEDRAD and other EC-funded projects.
- To implement such tools and the proposed optimised procedures in (university) hospitals throughout Europe that are members of the i-Violin consortium.
- To disseminate these tools and optimised procedures to interested hospitals and healthcare providers in Europe to contribute towards a harmonised and standardised oncological imaging approach.
- To provide a suitable education and training programme for radiologists, radiographers and medical physicists to be able to use the harmonisation tools.
- To disseminate the results to policymakers, the medical societies and other relevant stakeholders to foster uptake and implementation.

The current disparities in oncological imaging procedures in Europe are evident from several projects and surveys conducted by the EuroSafe imaging campaign, which i-Violin can address at the European level to improve cancer care for Europe's patients.

Against the multiple hurdles preventing optimisation of oncological imaging approaches, i-Violin aims to disseminate the image quality assessment tool developed in MEDRAD for chest CT in hospitals throughout Europe and adjust it for imaging procedures in the abdominal and pelvic regions, for which no satisfactory tool exists. The outcome of available commercial software for evaluating patient-specific dose indicators will be cross-validated against more sophisticated dose-evaluation tools for determining organ doses dependent on patient parameters and image settings as developed for chest CT. Furthermore, only a combination of image-quality assessment and dose evaluation on the same patient images can allow patient- and indication-specific optimisation with respect to patient radiation protection.

A European database will be established for CT images resulting from different imaging parameters, corresponding patient dose indicators and image quality indicators, and recommendations will be given for these approaches.

European adoption of optimisation measures for image quality assessment and dose evaluation in member states must be fostered through dissemination of i-Violin's deliverables among hospitals, policy makers, societies and other stakeholders and implementation of education and training activities. i-Violin will contribute to establishing a harmonised and standardised oncological imaging approach, and a targeted education and training programme for radiologists, radiographers and medical physicists will accompany dissemination and foster uptake.

In order to achieve its objectives, i-Violin's work has been mapped out in 7 work packages and UCD will lead on WP3.

Work Package 1: Project management and coordination
 Work Package 2: Dissemination and communication
 Work Package 3: Impact evaluation (UCD)
 Work Package 4: Adaptation of existing image quality evaluation tools and dose evaluation for CT imaging in cancer patients
 Work Package 5: Clinical database implementation and data collection
 Work Package 6: Optimisation of oncological imaging procedures (CT) based on protocols for selected clinical indications
 Work Package 7: Education and training on image quality evaluation tools and corresponding optimisation

UCDs role
 UCD School of Medicine staff, Assoc Prof Shane Foley and Assoc Prof Jonathan McNulty will lead Work Package 3 of the project, which is tasked with evaluating the project in terms of whether the implementation works as foreseen, what needs to be adjusted and what is the impact of i-Violin during the project period in achieving uptake and harmonisation for oncological CT procedures in the selected body regions. WP3 will develop recommendations for implementation of project results based on feedback from tool end-users, discussions with regulators, and education and training outcomes.

Facts
 Coordinator: European Institute for Biomedical Imaging Research (EIBIR)
 Number of Partners: 10
 Start Date: September 1, 2022
 End Date: August 31, 2024
 Total Funding: € 1172,487,81

EIBIR project page
[Click here for project details and updates on www.eibir.org](#)

i-Violin News

- UCD Radiography joins nine European partners to launch EU4Health i-Violin project (12 Oct 2022)

Co-funded by the European Union

Project partner 10 (STUK) - Sateilyturvakeskus (FI) / Finnish Radiation and Nuclear Safety Authority (EN)

	<p>WP 1: Project management and coordination WP 2: Dissemination and communication WP 3: Impact evaluation WP 4: Adaptation of existing image quality evaluation tools and dose evaluation for CT imaging in cancer patients WP 5: Clinical database implementation and data collection WP 6: Optimisation of oncological imaging procedures (CT) based on protocols for selected clinical indications WP 7: Education and training on image quality evaluation tools and corresponding optimisation</p> <p>Funding This project is co-funded under the EU4Health Programme 2021–2027 under grant agreement no. 101056832.</p> <p>STUK's role STUK participates in WPs 2, 3, 4, 6 and 7. They provide expertise on dosimetry and image quality measurements and support the organization of international education and training events. STUK has a major role in dissemination of results among other regulatory bodies for example through their channels as a member of HERCA (Heads of the European Radiological Protection Competent Authorities).</p> <p>Facts Coordinator: European Institute for Biomedical Imaging Research (EIBIR) Number of Partners: 10 (from 9 countries) Start Date: September 1, 2022 End Date: August 31, 2024 Total Funding: € 1,172,487.81</p> <p>Share This Page </p> <p>ELSEWHERE ON THE INTERNET</p> <ul style="list-style-type: none"> • i-Violin project opens for details, updates on results etc. • i-Violin news <p>CONTACT PERSON AT STUK</p> <p>Päivi Toivi Mä. +358 9 191 88 700</p>
	<p>Rahoitus Tämä hankke on osarahoitettu EU4Health-ohjelmasta 2021–2027 avustussopimuksella no. 101056832.</p> <p>STUKin rooli STUK osallistuu työpakettiin Wp: 2, 3, 4, 6 ja 7. He tarjoavat asiantuntemusta dosimetrian ja kuvantamisen mittauksista sekä tukevat kansainvälisten koulutusilaisuuksien järjestämistä. STUKilla on merkittävä rooli tulosten levittämisessä muiden valvovien viranomaisten kesken esimerkiksi HERCA:n (Heads of the European Radiological Protection Competent Authorities) kautta.</p> <p>Faktit Koordinaattori: European Institute for Biomedical Imaging Research (EIBIR) Partnerit: 10 (yhdeksältä maasta) Aloitusaika: 1.9.2022 Päätymisaika: 31.8.2024 Kokonaisrahoitus: € 1,172,487,81</p> <p>Jaa tämä sivu </p> <p>MUULLA VERKOSSA</p> <ul style="list-style-type: none"> • i-Violin projektisivut • Eirolainnelehtiin i-Violin uutisiin <p>YHTYSHENKILÖ STUKISSA</p> <p>Päivi Toivi puh. (09) 759 88 700</p> <p>Sivu päivitetty 08.12.2022 / Pääuutista tästä sivusta / Tulosta / Alkuun</p>