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SHERPA research consortium initiates seven clinical studies to validate AI-based assistive technologies for minimally invasive brain and cancer treatments

- *With a total budget of EUR 21.5 million, the four-year SHERPA research project is coordinated by Philips and co-funded by the EU Innovative Health Initiative (IHI) and industry partners*
- *The project focuses on developing automated workflows for minimally invasive neurovascular and tumor treatments – clinical procedures where staffing levels and specialized expertise are in short supply*
- *The clinical studies are being conducted at University Medical Center Utrecht, St Antonius Hospital, University Medical Center Hamburg-Eppendorf, Hôpital Bicêtre AP-HP, and Hospital de la Santa Creu i Sant Pau*
- *On March 4 (16:30 - 17:30 CET), SHERPA will be featured at the European Congress of Radiology 2026 in a [dedicated session](#)*

Vienna, Austria – The Cardiovascular and Interventional Radiological Society of Europe (CIRSE) today announced that the Philips-coordinated [SHERPA](#) research consortium has initiated seven clinical studies to demonstrate the benefits of AI- and robotics-assisted workflows in minimally invasive treatments for brain aneurysms* and liver tumors. Staff shortages, coupled with the complex nature of the work, place significant pressure on interventional radiologists and interventional neuroradiologists who perform these procedures. The SHERPA consortium aims to validate AI-powered technologies in imaging, data visualization, procedure planning and guidance, clinical decision support, and patient pathway orchestration. These technologies are designed to automate repetitive, time-consuming tasks, support decision-making, and accelerate learning to ease the workload of interventional (neuro)radiologists.

The four-year research project is co-funded by the industry partners through in-kind contributions and additional resources, as well as by the European Union [Innovative Health Initiative](#) (IHI), and comprises 16 partners from seven European countries.

With CIRSE's extensive network of interventional radiologists and expertise in the development of training and education formats, it will be a strong partner for communication and dissemination, and will lead the design and delivery of high-quality education and training programmes within SHERPA. A series of webinars and face-to-face training workshops developed together with project partners will aim to enable the safe and effective integration of new technologies into daily clinical interventional radiology (IR) practice. Through its wide reach within the IR community, CIRSE will also ensure that IR practitioners' perspectives are integrated in the development of new AI applications.

On March 4, 2026, from 16:30 to 17:30 CET, SHERPA will be featured at the European Congress of Radiology (ECR) 2026 in a [dedicated session](#) titled: "*Assistive Technologies for Interventional Radiologists: Enhancing Decision-Making and Streamlining Workflow with Innovations and AI-Powered Solutions.*" The session will be

chaired by CIRSE President Prof. Philippe L. Pereira. Click [here](#) to view the agenda and register to attend the session online.

Innovation through public-private partnership

The SHERPA public-private partnership consortium comprises five medical technology industry partners, five academic partners, and five research organization and medical association partners:

- Industry partners: [Philips](#), [Medtronic](#), [Sim&Cure](#), [Interventional Systems](#), [Barco](#).
- Academic partners: [University Medical Center Utrecht](#) (The Netherlands), [University Medical Center Hamburg-Eppendorf](#) (Germany), [Hôpital Bicêtre AP-HP](#) (France), [Hospital de la Santa Creu i Sant Pau](#) (Spain), [St Antonius Hospital](#) (The Netherlands).
- Research organization and medical association partners: [European Institute for Biomedical Imaging Research - EIBIR](#), [Cardiovascular and Interventional Radiological Society of Europe – CIRSE](#), [European Society of Minimally Invasive Neurological Therapy – ESMINT](#), [Eindhoven University of Technology – TU/e](#) (The Netherlands), [Human-Factors-Consult – HFC](#) (Germany).

Addressing staff shortages and patient access by relieving the pressure on physicians

The World Health Organization (WHO) predicts a shortage of 600 thousand physicians in the European Union (EU) by 2030 [1]. Some of the most acute physician shortages are in interventional radiology, even in countries such as the UK that have advanced healthcare systems [2].

Among the many different procedures conducted by interventional (neuro)radiologists, treatments of brain aneurysms and liver tumors are some of the most complex and time consuming. Both rely on CT and/or MR imaging for diagnosis, real-time imaging for procedure guidance, and a high level of precision in the placement of therapeutic devices such as blood-clot inducing platinum coils to seal off a brain aneurysm or the percutaneous insertion of ablation needles to treat a liver tumor. As a result, these procedures require a very high level of operator expertise and training, which can limit patient access.

The SHERPA project aims to provide interventionalists with AI-powered assistive technologies that automate repetitive tasks and support decision-making across the entire workflow. By doing so, they will accelerate learning curves and improve precision and safety in complex minimally invasive interventions such as brain aneurysm repair and liver tumor ablation.

During the first year of the project, the consortium successfully developed AI algorithms to help identify brain aneurysms that need treatment and algorithms to optimize patient selection and therapy planning for liver tumor ablation. They also developed robotic technology to improve procedure precision and reduce difficulty, and AI software to confirm treatment success. These have now been integrated into orchestrated end-to-end workflows for both types of procedure.

SHERPA project clinical studies

Over the next three years of the four-year SHERPA project, the consortium partners will conduct a series of clinical studies to refine these assistive technologies and assess the benefits in terms of the patient experience, workload optimization, interventionist satisfaction, and performance.

The five brain aneurysm studies will focus on AI-driven aneurysm detection, risk prediction, and precise treatment planning:

- **RADAR:** AI-based aneurysm detection based on CT and MR imaging.
- **Aneurysm@risk:** AI-based algorithm to predict aneurysm growth and rupture risk.
- **ASSIST:** AI-supported device selection and positioning guidance.
- **INTERACT:** Automatic collimation and projection angle suggestions to optimize imaging for procedural guidance.
- **SAFO:** Evaluation of a digital remote follow-up solution for brain aneurysm patients, enabling standardized monitoring, enhanced coordination, and seamless care across the patient pathway.

The liver and lung tumor studies will leverage advanced imaging and robotic-assisted biopsy technologies, respectively, to drive greater diagnostic precision and procedural efficiency.

- **MISTRAL:** Evaluation of new Cone Beam CT workflows to optimize imaging for percutaneous liver ablations.
- **RHODES:** Evaluation of robotic-assisted versus free-hand lung biopsies with a focus on operability and device efficiency.

Together, these studies will generate insights to support the acceptance and adoption of AI-based smart assistive technologies by the wider interventional radiology community.

The SHERPA website can be viewed at: <https://sherpa-ihl.eu>. Watch videos and interviews about SHERPA [here](#). The CORDIS project page for SHERPA can be accessed [here](#), and the IHI factsheet for SHERPA can be found [here](#).

Notes and references

- * A brain aneurysm is a weak, bulging spot in a blood vessel in the brain, which can leak or rupture.
- [1] Zapata T, Muscat NA, Falkenbach M, and Wismar M. WHO Report - From Great Attrition to Great Attraction: Countering the Great Resignation of Health and Care Workers. Eurohealth, Vol.29, No.1, 2023. <https://iris.who.int/server/api/core/bitstreams/488b01ab-a066-4558-a345-476570fe2802/content>
- [2] The Royal College of Radiologists: Clinical radiology - UK workforce census 2020 report. https://www.rcr.ac.uk/media/3gjdr23o/clinical_radiology_census_report_2020.pdf

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Media Contact:

Cardiovascular and Interventional Radiological Society of Europe

The Cardiovascular and Interventional Radiological Society of Europe (CIRSE) is a non-profit making, educational and scientific association aiming to improve patient care through the support of teaching, science, research, and clinical practice in the field of cardiovascular and interventional radiology. It is home to more than 10,000 healthcare professionals from around the world specialized in minimally invasive image-guided treatments.

To learn more about CIRSE and its initiatives, visit www.cirse.org or contact us at communications@cirse.org.

