

## HoloSurge awarded €8.9 million Horizon Europe grant to improve surgical planning with hologram technology

- HoloSurge (a group of 14 European leaders in technology and healthcare) has been awarded one of the largest EU research & innovation grants in recent history.
- Their project aims to reduce surgical complications and improve outcomes using HoloCare's interactive 3D organ hologram technology.
- Trials show a 74% reduction in time taken to align organs during liver surgeries using HoloCare's AR images versus MRI scans.<sup>1</sup>
- The technology provides a real-time view of a patient's unique anatomy – before and during surgery – to enable more accurate decision-making, potentially saving lives.



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**UNDER EMBARGO UNTIL 18th April, 09:00 CET**

[Oslo, Norway] One of the largest EU grants in recent history has been awarded to HoloSurge, an innovative four-year project bringing together 14 European leaders in technology and healthcare

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<sup>1</sup> <https://www.tandfonline.com/doi/full/10.1080/13645706.2019.1616558>

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research with a shared goal to reduce the risk of complications during planned surgery.

The €8.9 million grant, allocated by transnational research and innovation funding body, [Horizon Europe](#), will fund the further development of organ hologram technology to power informed surgical decision-making.

This technology, developed by Norwegian medtech company [HoloCare](#), currently provides liver surgeons with interactive 3D holograms of organs, and is used by doctors to plan and tailor operations to each person's individual anatomy.

## **Advancing surgical precision: the role of hologram technology**

The technology is initially being used for [liver surgeries at five hospitals in Europe](#), including Oslo University Hospital. So far, trials show a 74% reduction in the time taken to align organs during surgery using HoloCare's AR images versus MRI scans.<sup>2</sup>

Using augmented reality headsets, such as the Microsoft HoloLens, surgeons are able to view a 3D hologram of a patient's organ to plan operations more efficiently and accurately. The tool also allows them to move, rotate and expand the hologram, so that the organ can be viewed from above, below and behind.

Colleagues wearing the headsets can access and interact with the hologram at the same time, whether they're in the same room or connecting remotely from different locations. This allows multi-disciplinary teams to tap into the knowledge of external specialists, regarding potential surgical challenges, enhancing decision-making during the planning process.

In future, the holograms will also be superimposed onto the patient during the surgery itself as a reference point to improve accuracy and intraoperative navigation.

## **Meeting critical needs in modern surgery**

Currently, surgery is the main treatment for liver cancer, with the potential to extend some patients' lives by up to 10 years. If surgery isn't an option, patients may undergo palliative chemotherapy, which typically offers around 3 years of survival.

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The holographic technology, developed by HoloCare, is set to significantly improve both the surgical process and the decision-making before surgery, potentially reducing complications. This includes issues such as infection, bleeding, organ damage and death – which currently affect up to 48% of liver surgeries and 60% of pancreatic surgeries.<sup>3,4</sup>

Due to their two-dimensional nature, traditional imaging methods, such as ultrasound, MRI and CT scans, can also result in surgeons missing critical details. Around 40% of all lesions in the tail of the pancreas currently go unnoticed using ultrasound technology.<sup>5</sup>

## Integration of hologram technology into surgical workflows

Over a four-year period, the 14 HoloSurge partners will support the integration of the cutting-edge hologram technology into existing surgical workflows. The team will ensure regulatory compliance, clinical validation, and technical optimisation for widespread adoption in liver and pancreatic cancer surgeries.

**Dr Thomas Lango, Chief Scientist at St. Olavs Hospital and SINTEF in Trondheim, Norway:** *“The fusion of available data sources (CT, MR, ultrasound) into holograms made available for clinicians in minimally invasive procedures like laparoscopic surgery and flexible endoscopy will change the way clinicians work in the future. It will empower clinicians to navigate intricate anatomical landscapes with unprecedented precision and 3D understanding not readily available from traditional cross sectional 2D images. The HoloCare technology promises to not only improve image-guided medical procedures, but also collaboration and training of new experts.”*

**Prof David Jayne, Professor of Surgery at the University of Leeds and Hon. Consultant Surgeon at Leeds Teaching Hospitals NHS Trust:** *“The Hologare technology is an exciting advance in how we treat cancer patients with the potential to transform surgical care. The superior anatomical knowledge gained from the technology will enable more precise surgery with better cancer outcomes for patients”.*

**Jahn Otto, Innovation Director at HoloCare:** *“Innovation has long been the foundation for prosperity in Europe, from the breakthroughs improving healthcare to the technological advances growing our economy. In essence, Horizon Europe is not just about funding; it's about forging connections, driving*

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<sup>3</sup> <https://bmcsurg.biomedcentral.com/articles/10.1186/s12893-021-01301-4>

<sup>4</sup> <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2799856>

<sup>5</sup> <https://emedicine.medscape.com/article/280605-workup?form=fpf#:-:text=Therefore%2C%20TUS%20can%20help%20to%20detect%20only%20060%2D70%25%20of%20pancreatic%20carcinomas%2C%20and%20similar%20to%20CT%20scanning%2C%20more%20than%2040%25%20of%20the%20lesions%20smaller%20than%203%20cm%20are%20missed>

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*innovation, and shaping the future of healthcare. This not only opens doors for collaboration with the EU but also with Norway.*

*“The HoloSurge partnership stands as a testament to this. Through joint efforts with experts from the EU, UK and Norway, we’re aiming to use our hologram technology to transform the surgical outcomes of individuals worldwide. Our hope is that it can be adapted to benefit a wider range of surgeries in the future.”*

**- ENDS -**

## **Notes to Editors**

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## **Media Kit**

- [Images and videos](#)

## **About HoloCare:**

[HoloCare](#) is a Norwegian health-tech startup turning 2D medical images into interactive 3D holograms to help clinicians plan and prepare for complex operations more effectively.

Emerging from a collaboration between [Oslo University Hospital](#) and [Sopra Steria](#), HoloCare’s mixed reality clinical tools are currently used in hospitals across the UK and Europe, focusing on hepatology, cardiology, and orthopaedics. Trainee surgeons can also access these tools to practice complex operations in a virtual, zero-risk environment.

## **About the HoloSurge partners:**

### **Technical development partners**

Responsible for pioneering medical imaging tools, including AI-based segmentation, 3D visualisation, intraoperative navigation, and real-time cancer cell-level diagnostics:

- [HoloCare](#): HoloCare provides the multi-speciality holographic toolkit to support intelligent, 3D surgical planning
- [SINTEF](#): Research organisation with expertise in technology
- [Oslo University Hospital](#): HoloCare’s pioneering research and innovation partner for developing the holographic technology
- [Netherlands Cancer Institute](#): Research and clinical partner who will identify vital structures and cancerous tissue in samples

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### **Four clinical partners**

Including key opinion leaders and world-class pancreatic and liver surgeons. These partners will clinically validate the innovation in specific intended use cases:

- [University of Leeds](#) and [Leeds University Teaching Hospitals](#) (head the clinical and preclinical testing)
- [Ludwig Maximilian University Hospital](#)
- [Netherlands Cancer Institute](#)
- [Maria Skłodowska-Curie National Research Institute of Oncology](#)

### **Other partners include:**

- **One testing experimental facility:** [Metropolia University of Applied Sciences](#) is involved in the testing experimental facility for mock surgeries
- **One medical industry expert:** [Orbit 21](#) is involved in the integration with the Picture Archiving and Communication System at the hospitals
- **One social science and digital health humanities expert:** [CYENS Centre of Excellence](#) is involved in the evaluation and enhancing the societal impact of the research activities, e.g., through patient empowerment and user-centred design
- **One regulatory specialist:** [Simmelweis University for Health Technology Assessment](#) involved in the certification requirements and Health Technology Assessments
- **Two scientific/patient organisations:** [United European Gastroenterology](#) and [Digestive Cancers Europe](#), are involved in promoting an interest across a wide range of healthcare stakeholders

### **Bid partners:**

- [Norway Health Tech](#)
- [Innovation Norway](#)

Project duration  
2024 – 2027

This project has received funding from the European Union's [Horizon Europe](#) research and innovation programme under grant agreement No Project 101137233 — HoloSurge. Horizon Europe is the EU's key funding programme for research and innovation with a budget of €95.5 billion.

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