

## CONcISE Project set to revolutionise the biomedical optical imaging industry

CONcISE (COMputatioNal Imaging as training Network for Smart biomedical dEVICES) is a new project funded by the European Union's Marie Skłodowska-Curie Actions (MSCA) of the Horizon Europe programme that aims to revolutionise biomedical optical imaging techniques. Led by Consiglio Nazionale delle Ricerche in Italy and bringing together eight beneficiaries and four associated partners from 8 European countries, the project officially kicked off on February 1<sup>st</sup>, 2023.

### What is the issue at hand?

Traditional biomedical imaging devices maximise the amount of data regardless of its quality, which often results in a large amount of data to manage and analyse for the technology end users. Undoubtedly, this creates bottlenecks and gaps in measurements, due to the limited computational capacity of healthcare providers. The CONcISE project challenges the limitations of current devices, aiming to develop novel and unconventional techniques for multi-dimensional biomedical optical imaging.

### Why is CONcISE expected to revolutionise biomedical imaging industry?

Jointly with 11 Doctoral Candidates (DCs) working on 11 personalised topics, the CONcISE project partners will combine expertise from the computational and experimental fields to develop novel and unconventional biomedical imaging systems.

To do so, the consortium will completely challenge the traditional measurement paradigm, moving toward a novel and unconventional approach multi-dimensional imaging approach, where the guiding “merit-function” is not the “Fourier Bandwidth”, but the “Information Bandwidth”.

This means that the new system will look at the information content of a sample, possibly acquiring data that human eyes would not be able to recognise, while ensuring the compression of images with a sparse representation. Additionally, the new technology will approach biomedical imaging under an adaptive, data-driven framework. This will lead not only to a reduction of the acquired data, reducing the overall measurement time, but also to an easier analysis, sharing, and transfer of data.

Overall, the CONcISE project is an exciting step forward in the field of biomedical imaging. This revolutionary approach will allow for the gathering of high-quality data, leading to more accurate and reliable results for health care providers. Furthermore, partners' complementary expertise is set to deliver the high-quality outcomes and the highest impact on the technology end users.

### CONcISE facts and figures

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8 Beneficiaries & 4 associated partners

8 European countries

4 years

2.6 million euros

3 research themes and 11 personalised research topics