Eurostars grant for collaborative development of AI solutions for breast CT

The Swiss company b-rayZ — a spin-off from the University Hospital Zurich, Switzerland and a pioneer in the application of artificial intelligence (AI) technologies to the field of breast imaging — and the German company AB-CT - Advanced Breast-CT, based in Erlangen, Germany and specialists in breast CT imaging, have announced that they will be working together in a joint project which has received funding under the Eureka Eurostars R&D funding organization.

Specifically, over the two-year period of the recently approved project, the two breast health companies will be collaborating in the development of an artificial intelligence platform designed for the automatic analysis of spiral breast CT datasets in terms of image quality, glandular density, and the detection of suspicious or cancerous lesions.

Dr. Cristina Rossi (Left Panel) is co-founder and CEO of the Swiss company b-rayZ, who have developed the b-box system which provides a range of solutions for breast imaging procedures
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Benjamin Kalender (Right Panel) is CEO of the German company AB-CT - Advanced Breast - CT, producers of the nu:view spiral CT system for breast imaging.
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Designed particularly for small and medium sized enterprises (SMEs) and operated under the responsibility of the Eureka organization, Eurostars is the largest international funding programme for SMEs wishing to collaborate on R&D projects that create innovative products, processes or services for commercialization. Under the Eurostars funding criteria, the consortium of collaborating companies must be composed of at least two independent entities with at least one of the companies from an EU or an Horizon Europe Associated Country.

"*We are thrilled to have received this recognition from the Eurostars program,*" said Dr. Cristina Rossi, CEO of b-rayZ. "*This project allows us to*
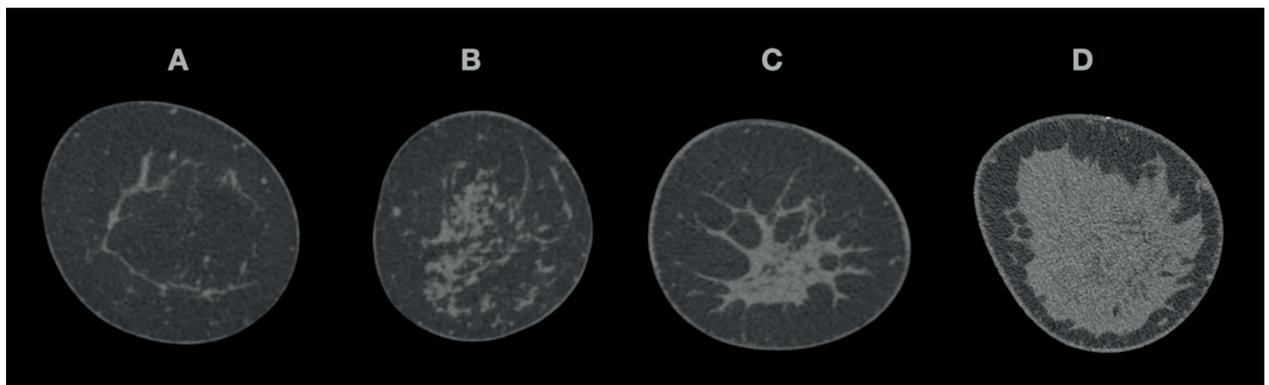

Figure 1. Density classification as determined by spiral breast CT. Typical examples of images illustrating the density categories A- D.
((A). Fatty tissue; (B). Scattered areas of dense glandular and fibrous tissue; (C). Heterogeneous dense glandular tissue; (D). Very dense tissue.
Image adapted from Landsmann *et al.* Ref 4.

combine two extraordinary technologies for the ultimate benefit of breast cancer patients and of healthcare specialists. We are looking forward to working together with AB-CT."

While it is well-established that the early detection of breast cancer by screening mammography can reduce mortality in breast cancer, in practice many women choose not to take part in screening programmes because of the discomfort or even substantial pain associated with breast compression, which is an essential part of the classical mammography or tomosynthesis examination. In contrast, dedicated breast CT is a novel breast imaging modality that is receiving increasing attention from the breast community (radiologists and women alike) and does not involve breast compression, thereby providing increased comfort levels for the woman during image acquisition thus resulting in a higher compliance in the screening programme [1].

> " ... Our nu:view breast CT system has already demonstrated considerable added value in a whole range of clinical applications, but the collaborative project with b-rayZ is likely to result in a real game-changer for workflow efficiency and overall patient care. ..."

Providing high resolution 3D datasets of the breast, the **nu:view breast CT system** from AB-CT is equipped with a photon-counting detector, allowing imaging of the breast with an average radiation dose similar to digital mammography [2]. Breast CT prevents the overlay of parenchyma, resulting in images of very high diagnostic quality across breasts of various densities [Figure 1]. Breast CT is the only modality that has been shown to be able to detect microcalcifications and soft-tissue lesions without any patient discomfort caused by breast compression [3].

The **"b-box"system** from b-rayZ incorporates cutting-edge AI software technology based on a strong diagnostic imaging expertise and is designed to produce a personalized, flawless, and sustainable breast cancer diagnostics service. The "b-box" itself is a small medical device that can be easily installed in the breast imaging suite and provides an ecosystem of solutions which range from the establishment of personalized diagnostic strategies for each individual

patient to the carrying out of quality controls in real time [4].

The objective of the collaboration between the two companies is the incorporation of b-rayZ's state-of-the-art system with the spiral breast CT so as to create a unique set of powerfully synergistic technologies. Benjamin Kalender, CEO of AB-CT – Advanced Breast-CT, said: "*We are excited to be co-operating actively with b-rayZ on this project. Our nu:view breast CT system has already demonstrated considerable added value in a whole range of clinical applications, but the collaborative project with b-rayZ is likely to result in a real game-changer for workflow efficiency and overall patient care. We expect the new combined modality to propel breast imaging to an entirely new level.*"

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