

Guerbet wins *PI-CAI Grand Challenge* on detection of prostate cancer



Villepinte, 17 July 2023: Guerbet (FR0000032526 GBT), a global specialist in contrast media and medical imaging solutions, is delighted to announce the success of its teams at the *PI-CAI (Prostate Imaging: Cancer AI) Grand Challenge*¹, an international challenge organised by a consortium² of radiology opinion leaders in prostate imaging, urologists and artificial intelligence experts, to compare the performance of artificial intelligence algorithms in the detection of prostate cancer.

Diagnosis of prostate cancer, a public health issue

The second male cancer according to the WHO, prostate cancer, with 1.4 million new cases each year worldwide, accounts for 6.8% of male cancer-related deaths (350,000 deaths per year). Currently, only 10% to 20% of patients are diagnosed at a stage where the tumour is resectable.

Magnetic resonance imaging (MRI) plays an increasingly important role in the early diagnosis of prostate cancer. The European Association of Urology recommends MRI before considering a biopsy. However, prostate MRI is difficult to interpret and requires a good level of expertise to avoid the high variability of interpretations and diagnostic errors highlighted in some studies.³

¹ <https://pi-cai.grand-challenge.org/>

² The challenge is organised by Radboud University Medical Center, Ziekenhuis Groep Twente, University Medical Center Groningen, Norwegian University of Science and Technology, approved by MIDL, MICCAI, the European Society of Urogenital Radiology and the European Association of Urology; sponsored by Amazon Web Services and partially supported by EU H2020: ProCAncer-I and Health-Holland. The Scientific Advisory Board is made up of: For the Radiology portion: Prof. Padhani (UK), Prof. Bonekamp (DE), Prof. Villeirs (BE), Prof. Barentsz (NL), Prof. Rouvière (FR), Dr. Panebianco (IT); For the Urology portion: Prof. Bjartell (SE), Prof. Salomon (DE), Dr. Giannarini (IT), Dr. van den Bergh (NL), Prof. Kasivisvanathan (UK); and for the AI portion: Prof. Huisman (NL), J. Kalapathy-Cramer (USA), Prof. Maier-Hein (DE), Prof. Eischot (NO), M. Rusu (USA).

³ Rosenkrantz et al., 2016, Westphalen et al., 2020

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However, thanks to advances in artificial intelligence, it is possible to develop a machine learning system that uses supervised learning algorithms trained using large volumes of medical data from patients with suspected prostate cancer. By training artificial intelligence on these data, it becomes possible to create a model capable of detecting the early signs of prostate cancer.

The PI-CAI Grand Challenge, a competition to advance the diagnosis of prostate cancer

The *PI-CAI Grand Challenge*, launched in November 2022 on the detection of prostate cancer, aims to encourage technological advances in early diagnosis and accurate detection of prostate cancer and to evaluate the performance of participants' artificial intelligence algorithms.

Bringing together more than 320 academic and industrial teams, including Guerbet, each invited to submit an artificial intelligence algorithm capable of diagnosing more than 10,000 prostate MRI examinations in order to be compared to diagnoses of radiologists specialised in prostate imaging.

The *PI-CAI Grand Challenge* was divided into two stages. During the first stage, the organisation proposed that the participating teams train their algorithm on approximately 1,500 data, which was then tested by the organisers on a cohort of internal data from 1,000 patients. It was at the Annual Meeting of the *Radiological Society of North America (RSNA) 2022* in Chicago that the Guerbet team was recognised, ranking first and second according to performance metrics

For the second stage of the challenge, the organisers proposed that the 5 finalists from the first stage train their algorithm on a much wider database of 9,100 MRIs in order to evaluate their performance. Guerbet once again responded magnificently to the challenge, **ranking first in all categories**, according to the results revealed on 10 July at the *Medical Imaging with Deep Learning (MIDL)* conference in Nashville in the United States.

At the same time as this artificial intelligence challenge, the organisation conducted a multi-centre, multi-reader study on the same database with the next objective being to compare radiologists' results to those of algorithms. This second part of the study will be published next.

"This recognition demonstrates our commitment to innovation and research to improve the diagnosis and care of cancer patients. We will continue to invest in advanced technology solutions to fight this disease, collaborate with healthcare professionals to further improve our technology and accessibility. An initial AI prostate cancer algorithm marketing pathway will be created within the framework of the non-exclusive licensing agreement signed with Intrasure in the first half of 2024: an agreement that provides for the marketing of a product incorporating the Guerbet prostate algorithm during the first quarter of 2024," says François Nicolas, Senior Vice President, Research, Development and Innovation, and *Chief Digital Officer* at Guerbet.

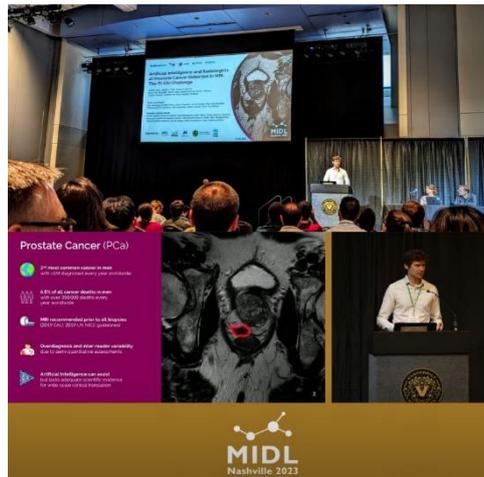
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About Guerbet

At Guerbet, we build lasting relationships so that we enable people to live better. That is our purpose. We are a world leader in medical imaging, offering a complete range of pharmaceutical products, medical devices and digital and AI solutions for diagnostic and interventional imaging. Pioneers in contrast media for 95 years, with more than 2,830 employees worldwide, we are constantly innovating and devote 8% to 10% of our revenue to research and development in five centres in France, Israel and the United States. Guerbet (GBT) is listed on Euronext Paris (segment B – mid caps) and generated €753 million in revenue in 2022. For more information, please visit www.guerbet.com.

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