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The CEA & CIBIO – Partners in Controlling the Delivery of Radiotherapy

The CEA and the CIBIO company, which specialises in the implementation of external regulatory controls, have signed a radiotherapy research partnership for developing new methods for controlling this method of treatment.

This collaboration is part of the launch of a new activity by the CIBIO company which aims to expand its current area of skills (inspecting radioprotection, quality control). The CIBIO will be developing methods for checking the radiation dosages emitted during radiotherapy. This development also concerns the conventional methods of administering radiotherapy as well as those that are more specialised, such as stereotaxy, cyberknife, tomotherapy, etc. Eventually, CIBIO will provide medical physicists with new methods of external control.

In order to achieve these objectives, CIBIO will rely on the expertise of the CEA-List Institute for metrology, modelling and simulation as well as on specialist state-of-the-art radiotherapy equipment and DOSEO platform imagery. This platform is designed to bring together industrial and individual healthcare research bodies within the same infrastructure for developing innovative treatment systems. The research conducted in the context of this new partnership will focus more specifically on:

- The assessment and validation of quality control methods for static radiotherapy beams, so that CIBIO will have a reliable and controlled dosage at its disposal. The research will deal with the features of the sensors and the creation of a quality control method.
- The development of new external dosage techniques for radiotherapy treatments using complex beams.
- In addition to the R&D partnership and access to the platform's equipment, the CIBIO company will benefit from hosting engineers, in order to facilitate skills transfer.

“This partnership is decisive for the development of CIBIO”, stated Jérémy Petin, the company chairman. “For implementing our R&D programme, we have multiple needs. These include expertise, access to heavy equipment and, if possible, housing our laboratory close to the heavy equipment so as to achieve greater efficacy. The CEA perfectly meets these needs which is why we chosen to install our laboratory and the team at DOSEO”.

For Karine Gosse, Director of the CEA-List Institute, *“Through this agreement, we are able to pursue our mission of technological enhancement for companies. By offering CIBIO shared access to the scientific excellence of our teams and the latest medical equipment, we are playing the role of an innovation accelerator, in a particularly constraining regulatory context, one that involves a major public health challenge”.*



The CIBIO visiting DOSEO
© CEA – DR



Medical radiotherapy accelerator
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About CEA

The CEA is a public research body that operations in four main areas – low carbon-emission energy (nuclear and renewables), information technology and health technology, Large Research Infrastructures (LRI), defence and global security. The CEA relies on basic research of excellence and recognised expertise; it participates in the setting up of collaborative projects with numerous academic and industrial partners. Its 16,000 researchers and collaborators make it a major partner in the European research community and it is also exercising a growing presence internationally.

As part of CEA Tech, the technological research directorate, the CEA-List Institute focuses its research on intelligent digital systems. Their R&D programmes which cover major economic and societal challenges, focus on advanced manufacturing challenges, on-board systems, ambient intelligence and controlling ionising radiation for health. By developing these state-of-the-art technologies, the CEA-List contributes to its partners' industrial competitiveness through innovation and technology transfer. The quality of its partnership research won the CEA-List the accolade of being awarded an Institut Carnot certificate of excellence in 2006 (www-list.cea.fr).

About CIBIO

CIBIO is an external supervisory body accredited and approved by the regulatory authorities (Autorité de Sureté Nucléaire, Agence Nationale de la Sécurité du Médicament et des produits de santé) [the Nuclear Safety Authority, National Safety of Medicines and Health Products Agency].

CIBIO was established in 2009 and soon became a national authority in its field of intervention, namely, ionising radiation for medical use.

CIBIO intervenes as an independent third party with healthcare institutions operating radiology and radiotherapy facilities for the purpose of:

- Auditing the internal processes introduced by the operator,
- Checking the dosages received by workers and patients exposed to radiation as well as the quality of the image.

Thanks to its considerable experience, the CIBIO will be contributing, through its R&D programme, to improvements in control techniques, especially in the field of radiation dosage from beams in external radiotherapy facilities.

For more information:

- the DOSEO press kit is at: <http://portail.cea.fr/presse/Pages/dossiers/2014/doseo-plate-forme-des-technologies-pour-la-radiotherapie-and-l-imagerie.aspx>
- DOSEO's web site: <http://www.platformedoseo.com/#>
- CIBIO Medical's web site: <http://cibio-medical.fr/>

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