CATHPAX
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Press Release

Cathpax, with its new Nova-X system, demonstrates its ability to offer interventional physicians an unmatched level of radiation protection to prevent all radiation-induced diseases and musculoskeletal disorders, thanks to a first-of-its-kind clinical study

- **Final results of NOVARAD clinical study show that use of Nova-X® full-body, team-wide radiation protection system reduces dose received by the main operator in interventional neuroradiology by a factor of eleven**
- **New system provides highest level of radiation protection on market; far superior to conventional ones, demonstrating strong potential to replace personal protection equipment ineffectively protecting practitioners from radiation-induced pathologies (cancer, cataracts, etc.), and among whom 66% are subject to severe musculoskeletal disorders**

Nantes, France, January 21, 2026 – Cathpax, a spin-off of the Lemer Pax group that designs, develops and commercializes team-wide, full-body radiation protection systems for interventional medicine practitioners, today announces the positive results of the NOVARAD clinical study. This study, the first ever in the world to evaluate exposure to X-rays in interventional neuroradiology, aimed at assessing the effectiveness of Nova-X® in protecting from head to toe the whole staff team in cath labs from exposure to X-rays during interventional procedures.

Cath lab healthcare professionals currently work with restrictive and ineffective lead personal protective equipment, which only offers them partial protection as it fails to protect areas such as the head and the extremities (hands, feet, forearms, etc.). These workers have a higher risk of developing radiation-induced pathologies in the medium and long term (cancer, cataracts, etc.). Additionally, two-thirds of these professionals suffer from musculoskeletal disorders[1]. As a result, 17%[1] of operators now limit their hours due to working conditions, compared to only 7%[6] ten years ago, even though reliance on these interventional procedures has continued to grow over recent years due to the recognized patient benefits. Today, roughly 40 million such medical procedures using X-rays are carried out worldwide every year[2].

NOVARAD, a multicentric, two-arm prospective study, analyzed the X-ray doses received by three operators in seven distinct anatomical areas, with state-of-the-art operational dosimeters providing extremely precise measurements (minimum detection threshold of 0.1 µSv). In total, 178 procedures at four hospitals (Nantes University Hospital, Bicêtre University Hospital in Paris, Toulouse University Hospital and Besançon University Hospital) were included, 90 without Nova-X and 88 with Nova-X. The dose received with Nova-X was 11 times lower for the head, 11 times lower for the arms and 38 times lower for the feet, compared to the conventional approach.

Operator 1 presented an average dose reduction of -91% over their entire body with an average value of 1.0 µSv per procedure with Nova-X, compared to 11.1 µSv without Nova-X. The dose for operator 2 went from 4.8 µSv on average per procedure to 0.8 µSv through the use of Nova-X, while operator 3 received an average overall dose that was more than twice as low (1.1 µSv against 0.4 µSv).

[1] Occupational Health Hazards in the Cardiac Catheterization Laboratory: Results of the 2023 SCAI Survey
[2] Company estimate

To assess the stochastic risk[3], the effective dose[4] evaluated was 1.33 without Nova-X and 1.24 with Nova-X (without wearing a lead apron). Obtaining these results and exposure reduction factors greater than 90% over the unprotected anatomical areas (deterministic risk[5]) validates the possibility of working without a lead apron, responsible for the significant growth in musculoskeletal disorders during the past ten years (66%[1] in 2023 compared to 49%[6] in 2014).

“The operator’s work ergonomics has an impact on the quality of patient care. Working while better and more comprehensively protected will necessarily change our approach and enable us to concentrate entirely on our actions. Furthermore, this system does not change our work habits, which is essential to maximizing the adoption of a new technology in the cath lab,” said **Professor Laurent Spelle, head of the Interventional Neuroradiology Department at the Bicêtre University Hospital, Paris (France)**.

“It is now feasible to work in complete safety with total homogeneous protection for the whole body and for all staff working in the lab. This represents major progress for our profession, because it makes it possible to work without a lead apron,” added **Professor Christophe Cognard, head of the Interventional Neuroradiology Department at Toulouse University Hospital, Toulouse (France).**

“The results of this study are extremely positive for our whole profession. They shine a light on the difficult working conditions that currently deter many young graduates, particularly women who are unwilling to take any risks during pregnancy. I am delighted to have taken part in this study which opens up a new era for radiation protection in our field,” said **Professor Alessandra Biondi, head of the Interventional Neuroradiology Department at Besançon University Hospital, Besançon (France).**

“The results of this study are extremely positive and support what we have already implemented at our institution a few months ago for one of our colleagues, who was unable to continue working due to a lumbar disc pathology caused by wearing a lead apron every day. This study constitutes a real revolution in our profession and strengthens our empirical knowledge on radiation issues, the subject at the center of the transformation of our future hospital complex in Nantes,” added **Professor Hubert Desal, head of the Interventional Neuroradiology Department at Nantes University Hospital, Nantes (France).**

“The extremely positive results of this study, as well as the feedback received from the initial users, confirm our system’s relevance and its benefits. We are going to start our commercial roll-out on this solid foundation, focusing on the European market in the first instance. Furthermore, one of the main conclusions of this study is that the X-ray exposure environment is not homogeneous; it exposes interventional teams to very different doses depending on the anatomical segments. However, for 30 years, we have continued to extrapolate the dose to the whole body by measuring it with a single operational dosimeter placed on the chest under the lead apron. In light of these results, we will continue to actively work with the scientific community to ensure that all interventional physicians receive comprehensive radiation protection and appropriate dose monitoring,” declared **Pascal Guy, strategic director at Cathpax.**

“These results are consistent with our expectations and confirm that Nova-X, in itself, and thanks to its radio-protective capacity - currently unmatched on the market - will allow a growing number of physicians to work with complete confidence while benefiting from clearly superior protection. The results of this study today embody the whole ambition of the Lemer Pax group, that of ‘Protecting Life’,” added **Pierre-Marie Lemer, president at Cathpax**.

[3] Stochastic effect: effect of ionizing radiation on the human body occurs by chance, usually without a dose threshold. The probability of occurrence of stochastic effects is proportional to the dose, but the severity of the effect is independent of the dose received. It includes genetic effects (genetic mutations), somatic effects (cancer, cataracts) and in utero effects (embryonic malformations). (source: radiation-dosimetry.org)

[4] Average exposure to X-rays obtained by organ radio-sensitivity weighting on the International Commission on Radiological Protection (ICRP) database

[5] Deterministic effects (or non-stochastic effects) on health are those directly related to the radiation dose absorbed and the effect’s severity increases as the dose increases. An example of this is burns to the skin associated with prolonged exposure to X-rays. (source: radiation-dosimetry.org)

[6] Occupational health hazards of interventional cardiologists in the current decade: Results of the 2014 SCAI membership survey

"Nova-X offers an ergonomic, safe working environment to one of society's essential professions, whose working conditions have unfortunately improved very little over the past twenty years, despite the volume of their work increasing and becoming more complex. This profession no longer attracts young graduate physicians, due to the risks to which they are exposed, which are increasingly documented in literature, fueling the growing exodus of medical professionals. Nova-X is the result of close collaboration between the Cathpax team and several physicians with a strong commitment to the project we are celebrating today. I want to thank everyone who has contributed to this success," concluded **Valérie Chevreul, CEO of Cathpax**.

ABOUT NOVA-X®

Nova-X is a new radiation protection system designed to provide team-wide, full-body protection for cath lab medical staff, thereby improving both their safety and comfort in the workplace, to the benefit of patients. Nova-X offers more effective prevention against stochastic and deterministic risks related to daily X-ray exposure. Developed over more than ten years of R&D, Nova-X draws on the expertise and know-how of the Lemer Pax group, which has more than 50 years of experience in the civilian nuclear sector. Protected by more than ten patents, it is currently the only solution available on the market providing 2 mm lead equivalence over 70% of its surface, compared to the 0.5 mm for personal protective equipment (lead aprons) and collective protective equipment (suspended shields and table-side shields) currently found in cath labs. The system features a real-time dose rate reduction monitoring system (Dosicath®). Nova-X also boasts a laser system that delineates a controlled zone on the floor at all times (Laserguard®). Nova-X received CE-Mark certification at the end of 2025 and the company expects to obtain FDA approval over the course of the next two years.

ABOUT CATHPAX

Cathpax, a spin-off of the Lemer Pax group, designs, develops and commercializes team-wide, full-body radiation protection systems for cath lab staff during interventional procedures (minimally invasive treatment for cardiovascular disease). Founded in 2024, Cathpax leverages more than 50 years of innovation in the radiation protection field. The company benefits from the pioneering developments in ionizing radiation protection achieved by Lemer Pax since the 1970s and will further advance the group's two decades of groundbreaking innovations to pursue its mission of Protecting Life. Cathpax is active in one of three areas of expertise within the Lemer Pax group that has developed numerous state-of-the-art technologies and equipment deployed in thousands of products worldwide: Lemer Pax (civilian nuclear sector, radiopharmacy, nuclear medicine and radiology), GMP (therapy radioisotope production) and Cathpax (interventional medicine). Based in Nantes (France), Cathpax aims to become the world leader in full-body and team-wide radiation protection in interventional medicine.

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