Press Release

NAAREA partners with Assystem to create a joint laboratory for digital innovation, designed to enrich the digital twin of its XAMR®

22 October 2024 – Nanterre – NAAREA and Assystem announce the creation of a joint laboratory, dedicated to exploring emerging and advanced digital technologies and integrating them into NAAREA's digital twin. This laboratory will aim to meet future challenges related to the development of NAAREA's XAMR® nuclear microreactor. It will bring together the technical and professional expertise of NAAREA and Assystem, in collaboration with universities, research centres and public institutions.

In just 18 months, NAAREA reached a key step in the development of its microreactor by finalizing the first stage of the digital twin of its XAMR® in partnership with Assystem. Developed on Dassault Systèmes' 3DX platform, NAAREA's digital twin centralizes all of the data pertaining to the reactor, and will be used throughout the project's lifecycle, from its design through to operation and reprocessing.

As digital technologies are constantly evolving, NAAREA and Assystem decided to create a joint laboratory to evaluate, analyse and integrate all of the emerging technologies that could contribute to the deployment, optimization and ongoing improvement of NAAREA's XAMR® digital twin, such as large language models (LLMs), substitution models, the dynamic reliability of passive safety systems, and the Internet of Things (IoT). To do so, NAAREA and Assystems developed a five-year strategic roadmap in three areas:

- The integration stages for the main nodes of system tree structures;
- The main groups of processes to be integrated into the digital twin;
- The main technological building blocks likely to be integrated into the digital twin.

The engineering teams of NAAREA and Assystem, as well as the public and private research units that wish to join the joint laboratory, will contribute their expertise, resources and specific skills to this collective project. The laboratory will be based on the principle of sharing resources, whether material or immaterial, thus allowing each partner to collectively access knowledge and resources that might not necessarily have been accessible to them individually.

The joint laboratory will be led by a strategic steering committee made up of NAAREA's and Assystem's senior management, who will approve the roadmap and funding. A management committee will provide operational oversight for its R&D activities and may be assisted by NAAREA's Scientific Board to guide the scientific and technological aspects of the laboratory.

"This joint laboratory for digital innovation, born of a proposal from Assystem's and NAAREA's teams, aims to bring together their skills and expertise to explore the most promising digital technologies that could contribute to improving our digital twin. Beyond the exceptional knowledge we'll gain from it, and state-of-the-art digital technologies, this laboratory embodies the spirit of innovation that drives all of the teams involved in the design and development of our XAMR®", explained **Jean-Luc Alexandre, Founder and CEO of NAAREA**.

"We are delighted to continue and expand our partnership with NAAREA to contribute to the enrichment of their digital twin. Thanks to our expertise and the use of artificial intelligence, this joint laboratory represents a tremendous opportunity to innovate together. It will allow us to develop new solutions to continuously improve this large-scale project and address the energy challenges of the future", commented **Christian Jeanneau, Executive Vice President International, Project Management & Digital at Assystem.**

About NAAREA:

NAAREA (Nuclear Abundant Affordable Resourceful Energy for All) was founded in 2020 by Jean-Luc Alexandre and Ivan Gavriloff to help meet the objectives of energy sovereignty, decarbonization and improving the energy mix. NAAREA is developing the XAMR®, a nuclear microreactor capable of producing electricity (40 megawatts electric) and high-temperature heat (80 megawatts thermal) by burning long-lived nuclear waste recovered from spent fuel from traditional nuclear power plants. The XAMR® is designed to be industrially mass-produced and installed in close proximity to consumers, namely in the mobility sector, electro-intensive industries and remote areas. NAAREA benefits from the support of the French Alternative Energies and Atomic Energy Commission (CEA) and French National Centre for Scientific Research (CNRS), as well as industry players such as Assystem, Dassault Systèmes, Orano and Jacobs. A carbon-free and non-intermittent energy source planned to be on the market by 2030, NAAREA's XAMR® is opening the way for sustainable and innovative nuclear energy that supports energy independence, increased resilience and the circular economy. NAAREA is a winner of the "Innovative Nuclear Reactors" call for proposals under the France 2030 investment plan and a beneficiary of the French Tech 2030 support programme.
Learn more at: www.naarea.fr

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About Assystem:

Assystem, a world leader in independent nuclear engineering, has set itself the aim of contributing to accelerating the energy transition. With over 55 years of experience in highly regulated sectors subject to strict safety and security requirements, the Group offers engineering and project management services as well as digital services and solutions for optimizing the performance of complex infrastructure projects throughout their lifecycle.

The Assystem Group counts 7,500 experts working to advance the energy transition in 12 countries. To enable a supply of low-carbon energy at an affordable cost, Assystem is supporting the development of decarbonized electricity (nuclear, renewable energies and power grids) and green hydrogen. The Group also contributes to developing the use of low-carbon electricity in industrial sectors such as transport.
Assystem is currently one of the top three nuclear engineering companies in the world.
Learn more at www.assystem.com

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