

## Assystem and NAAREA win the 2024 Grand Prix National de l'Ingénierie for the deployment of the digital twin of the XAMR® nuclear reactor

*Presented by the French Ministry for the Ecological Transition, Energy, the Climate and Risk Prevention and Ministry for the Economy, Finance and Industry, in partnership with Syntec-Ingénierie, the Grand Prix National de l'Ingénierie (French National Engineering Awards) recognizes the most outstanding engineering projects each year.*

Paris, 29 October 2024 – Assystem, an international engineering, digital services and project management company, and NAAREA, a company developing a fourth-generation molten salt fast-spectrum nuclear microreactor, are proud to announce that they are the 2024 winners of the Grand Prix National de l'Ingénierie, France's prestigious national engineering award, for the deployment of the digital twin of NAAREA's XAMR® nuclear reactor.

The deployment of this digital twin represents a major technological advance. It combines 3D models and advanced simulations of the functioning of the reactor (including thermohydraulic, neutronic and mechanical aspects) in a single environment, and ensures the traceability of engineering data throughout the project's lifecycle, from the current design phase through to operation. This innovation centralizes all of the project models and data, improves operational efficiency, reduces costs and timeframes, and helps demonstrate safety.

Thanks to its proven expertise in the management of major nuclear projects, as well as in digital engineering platforms, Assystem played a crucial role in implementing the digital twin for the XAMR® reactor in partnership with NAAREA, who contributed its original vision of the product and its skills in innovation and the design of advanced nuclear reactors.

Overseeing the overall management of the project, Assystem orchestrated its implementation by providing strategic advice, defining a technological roadmap and key business processes, and configuring the platform developed by Dassault Systèmes (3DEXPERIENCE) that was selected for the basis of the digital twin. Its teams also managed the change to support the adoption of the tool by everyone concerned and ensure data quality. NAAREA's teams actively participated in developing the tool, by progressively integrating the design of the reactor and collaborating with Assystem to set up processes optimized for the engineering approach enabled by this innovative tool.

Close collaboration with Dassault Systèmes made it possible to quickly configure and manage the 3DX platform, integrating various disciplines to maximize cooperation. This platform facilitates change management and offers comprehensive support for engineering research. Thanks to its data-centred approach, Assystem succeeded in harmonizing modelling technologies with neutronic analysis, thus overcoming one of the complex challenges key to the project's success.

*"We are extremely proud and grateful to receive this prestigious award alongside NAAREA, a partner that we've been working with since 2020 to support the development of its XAMR® reactor. From the outset, NAAREA had decided to use a digital twin to accelerate the development of its reactor and optimize its performance, and we are delighted to have been able to successfully carry out this project alongside them", commented **Stéphane Aubarbier, Deputy CEO of Assystem**. "Winning the Grand Prix National de l'Ingénierie is a tribute to Assystem's technical excellence and innovation, and illustrates our commitment and ability to combine engineering with mastery of digital platforms. For us, this*

*project is a symbol of the future of engineering, where the fusion between engineering and digital technology enables a data-driven approach in a single, collaborative environment. This synergy aims to optimize projects' overall performance while ensuring secure delivery, thus rising to the crucial challenges of the energy transition and energy sovereignty."*

*"We are working on an exceptionally ambitious project, that we want to bring to fruition rapidly, while ensuring the smooth transmission of information and a high level of traceability and safety. The digital twin developed in collaboration with Assystem on Dassault Systèmes' 3DX platform is the backbone of our nuclear microreactor project extending over several decades", noted **Jean-Luc Alexandre, Founder and CEO of NAAREA**. "This exceptional collaboration between NAAREA and Assystem mobilized top-class engineers, in record time, allowing us to create a digital twin capable of supporting us throughout each phase of the project: design, development, safety and security demonstrations, manufacturing, deployment, operation, maintenance, up to the end of life of the reactor. The Grand Prix National de l'Ingénierie is recognition of this successful alliance between cutting-edge engineering and digital tools."*

## **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](http://www.assystem.com)

## **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 reactor XAMR<sup>®</sup>, 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<sup>®</sup> 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 microreactor XAMR<sup>®</sup> 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](http://www.naarea.fr)

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