



framato

I&C Solutions for
**Advanced Reactors and
Small Modular Reactors**



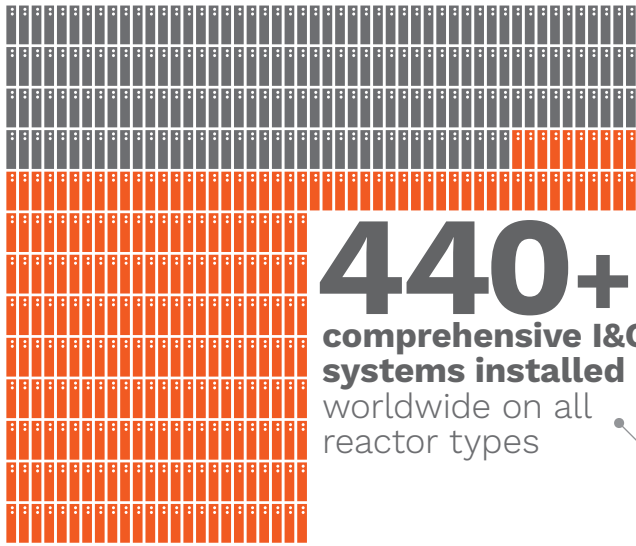
The best choice for experience. The best choice for technology. **Count on it.**

From design, to construction and long-term support and maintenance, to modernizations and updates, Framatome is your best choice for Advanced Reactor (AR) and Small Modular Reactor (SMR) instrumentation and control (I&C) solutions. Servicing more than 200 nuclear power plants worldwide over the past 65 years, Framatome has unmatched experience and global expertise in developing I&C system solutions for reactor control, protection and instrumentation systems in a variety of designs.

Reactor designers, utilities and governmental organizations can benefit from that expertise and proven track record by utilizing our state-of-the-art technology. Framatome's optimized, cybersecure and proven I&C solutions are well-suited for ARs and SMRs. Our solutions offer flexible energy generation, with ease of control for connection to any industrial cluster.

Additionally, we offer a unique set of services in licensing, qualification and optimization of reactor development for AR and SMR project certainty.

Unrivaled Experience



440+
comprehensive I&C
systems installed
worldwide on all
reactor types

Successfully
installed

200+
new power plant
full-scope simulators
worldwide over the
last 28 years



Including

250+
digital safety
I&C systems

#1 supplier of
digital excore
neutron
instrumentation
systems (NIS)
supplied to

115 reactors
worldwide

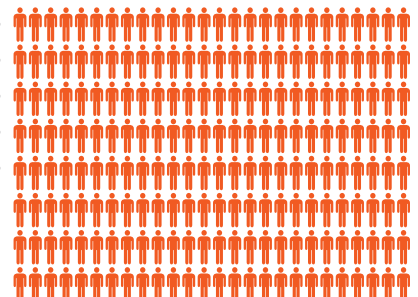
Digital and analog platforms
designed to meet the
**most stringent
safety requirements**
by regulatory authorities
around the world including:

Cat. A IEC

and

Class 1E IEEE

90 digital rod
control
systems and
rod positioning
monitoring systems
installed worldwide
since 1999



Global team of

2,400+
I&C experts

At

21
sites



In

10
countries



Safety Systems



TELEPERM XS Compact

A safety-related I&C system based on field programmable gate array (FPGA) technology that offers high performance in a compact and flexible design while meeting the latest regulatory requirements for ease in licensing. The simplicity of its design makes qualification easier for new build projects and can be used to build technologically diverse systems. It's designed specifically to implement category A, B or C (IEC 61226) and class 1E nuclear safety or safety related I&C functions.



Hardline

A modern analog safety I&C platform designed for class 1E, category A safety related I&C functions, Hardline can be easily adapted to multiple NPP designs, including research reactors and small modular reactors. All the safety functions are based on hardwired technology, without programmable components such as processors or FPGAs, making them immune to software common cause failure and cybersecurity threats.

Normal Operations

Framatome's distributed control systems (DCS) are designed to meet the intelligent automation needs of the complex, integrated systems that control the nuclear industry's critical operations. These system applications require proven technology that provides non-stop operation and state-of-the-art security. Our solutions have been selected by more than 50 nuclear plants around the world to provide critical controls.

Rod Control and Positioning Indicator Systems

Utilized worldwide, our digital control rod drive control systems are robust, standardized and proven solutions that provide higher reliability, simplified maintenance and streamlined system configuration. More than 40 years of experience in more than 80 nuclear reactors produces greater performance in terms of precision, response time and reliability. Redundancy in the design prevents uncontrolled rod drop or withdrawal, inhibited rod movement, loss of control rod position indications and reactor trips.

➤ **It increases efficiency by eliminating single-point vulnerabilities, enhancing monitoring and reducing trips and maintenance.**

Nuclear Instrumentation



Adaptable for use in all types of reactors and tailored to meet customer specifications, our ex-core and in-core instrumentation systems are in-house digital solutions for neutron flux monitoring used in more than 90 plants in the world. Framatome provides the full NIS scope: detectors, assemblies, connectors, cables for source, intermediate, power and wide ranges, as well as field instrumentation that takes precise temperature and pressure measurements.

Cybersecurity



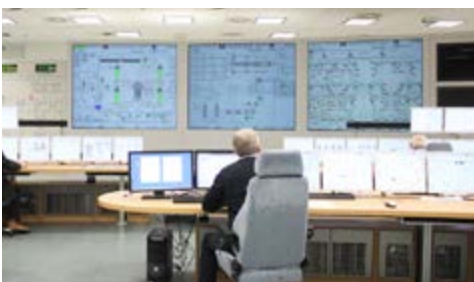
Framatome designs, manufactures and integrates innovative cybersecurity, computing and regulatory compliance solutions used for critical infrastructures. Our solutions are customized to fit the needs of your specific environment: for all plant systems including safety, important to safety, physical security, emergency preparedness and balance of plant systems.

We offer:

- Simulation & validation platform for cybersecurity solutions
- Penetration testing
- Cybersecurity risk analysis
- Cybersecurity assessment/audit
- Cybersecurity detection & monitoring solutions integration

> We provide cybersecurity services and solutions at more than 30 utilities and in 48 units around the globe.

Simulators/ Human-Machine Interface



We provide reliable multi-layer I&C system simulator platforms that feature precise simulation of digital and hardwired technologies including boards, networks, CPU asynchronisms and embedded software, prior to installation. Scalable to project needs and easy to use, the agile and flexible platform allows early and iterative dynamic verifications and validations of engineered I&C systems and plant operator displays in new build projects while offering a flexible interface that allows open- or closed-loop tests on both simulators and actual cabinets, in any combination.



Framatome is an international leader in nuclear energy recognized for its innovative, digital and value added solutions for the global nuclear fleet. With worldwide expertise and a proven track record for reliability and performance, the company designs, services and installs components, fuel, and instrumentation and control systems for nuclear power plants. Its more than 18,000 employees work every day to help Framatome's customers supply ever cleaner, safer and more economical low-carbon energy. Visit us at : www.framatome.com and follow us on X and LinkedIn.

Framatome is owned by the EDF Group (80.5%) and Mitsubishi Heavy Industries (MHI – 19.5%).



Learn more about
our I&C solutions.

For more information contact:
IC@framatome.com

www.framatome.com

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