

## ELVEES Simulator

An evolving engineering simulator for early launch validation

ELVEES simulator strategy is based on an evolving engineering platform that allows early and iterative dynamic validations of I&C systems and plant operator displays.

### Challenge

From the design, through test bay, all the way to plant commissioning, Instrumentation & Control (I&C) projects are challenged by:

- Late detection of implementation errors
- Late design corrections
- Unexpected re-validation costs

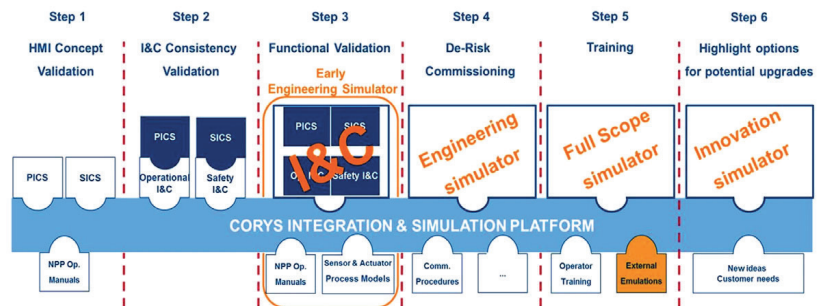
These errors and delays turn into unplanned costs and missed deadlines.

### Solution

Drawing on more than 200 successfully installed simulators, Framatome and their subsidiary CORYS offer the ELVEES simulator for agile, flexible and early implementation, verification and validation in both new build and modernization projects.

The ELVEES simulator is an integration platform with combinable simulation blocks that are able to:

- Grow with the maturity of the project deliverables using a stepwise approach, from low-fidelity simulator to full-scope simulator capabilities
- Provide availability for the design team beginning in the design phase
- Support early and iterative validations with both open- and closed-loop testing
- Ensure digital continuity within the Framatome I&C tool chain and with customers and suppliers
- Involve and immerse operators and design team into future plant operation



### Customer benefits

- Confidence – Proven simulation technology based on the state-of-the-art CORYS platform (ALICES)
- Schedule certainty – detects project errors early on, from design to commissioning phases
- Cost savings – the ELVEES simulator mitigates unexpected project revalidation, getting the job done right the first time
- Flexibility – scalable to the project needs
- Easy to use – supporting engineers not familiar with complex simulation environment
- Reliability – through Operator Training Simulator (full scope simulator) capabilities.

## Technical information

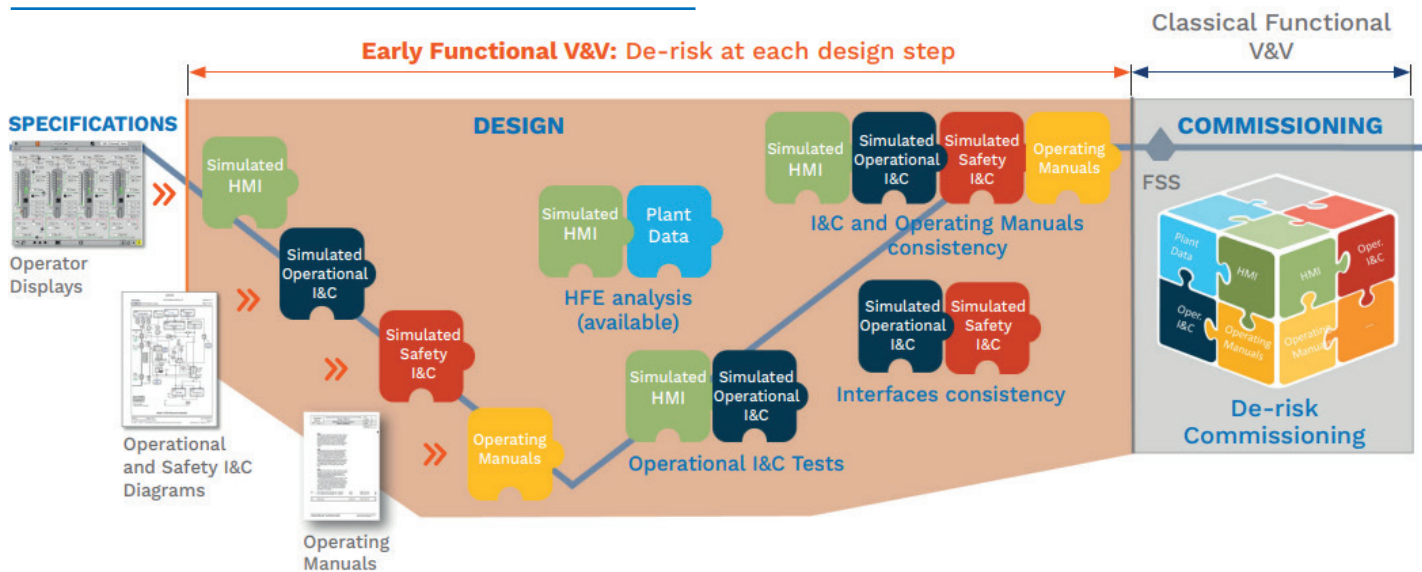
### ELVEES simulator facilitates\*:

- Human Machine Interface (HMI) mock-up
- I&C Testing (open- and closed-loop)
- Interface consistency verification
- Architecture tests
- Human Factors Engineering (HFE) analysis

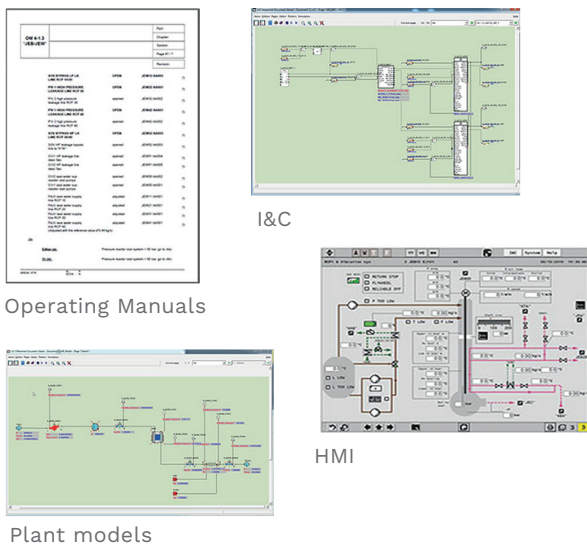
- Operating Manuals / I&C consistency checks
- Functional and dynamic verification and validation
- Degraded modes analysis
- Commissioning procedures preparation
- Execution of plant scenario (recorded data)

\* For a complete list of ELVEES capabilities, please inquire at the contact information below.

## Examples of Engineering Practices



## ELVEES Simulator



## Key Figures

**100+** reactors worldwide use our complete instrumentation solutions

**2,400** I&C professionals at **21** sites in **10** countries.

Framatome has more than **30** years experience helping customers achieve flexible operations of their nuclear plants.

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