

REINVENT YOUR NUCLEAR ENERGY EXCELLENCE

Solutions and Expertise



EDITO

It is today beyond debate whether nuclear power will contribute or not to achieve carbon neutrality by 2050.

Faced to the growing demand for non-dispatchable electricity, nuclear power positioned itself as the energy supply of a clean and schedulable electricity, complementary to Wind and Solar Electricity. In many cases, nuclear power is a great opportunity to succeed the energy transition depending on the industry ability to reduce costs, drive innovation, and gain enough public support.

To sustain its industrial performance, nuclear energy as any other sector, is undergoing significant disruptive changes due to the advent of the new technologies, spurring innovation and competitiveness.

Digital transformation is about technology, process, analytics... etc, but above all it is about DATA. Nuclear power is known amongst the biggest generator of data through the long lifecycle of the projects, from design, to operation, to dismantling (near 100 years). Added to that, the domain is subject to very demanding regulatory studies and reports. Consequently, the industry is increasingly managed by data and less by physical documents. The integration of digital technology and artificial intelligence enables businesses with productivity, quality, and cost reduction either in the project execution, operations, or maintenance.

We are witnessing unprecedented situation with nuclear power plant construction announcements, and at the same time, decommissioning programs in developed economies.

The stakes of digital transformation in the nuclear industry are more crucial than never, get ready to embrace the technologies acceleration!

David Steiger

Vice President – Head of Nuclear Segment Market Unit Ressources

At Capgemini, we foster high-growth enterprises with robust solutions and services through Intelligent industry

Who we are...

- A worldwide leader in Nuclear Plant Operations & Life extension solutions
- A European leader for New Nuclear Assets EPC & Operations
- On the way to be the leader in Nuclear Engineering

A global partner to serve the energy ecosystem

We support our clients in renewable energy, nuclear, thermal, mining and oil & gas to increase engineering quality, reduce costs, optimize assets and capture the value of digital disruption in 3 major areas: **investments, operations performance and services.**

What we do...

- Strategy and Transformation
- Software applications and Technology
- Operations (Infrastructures Services)
- Engineering and R&D

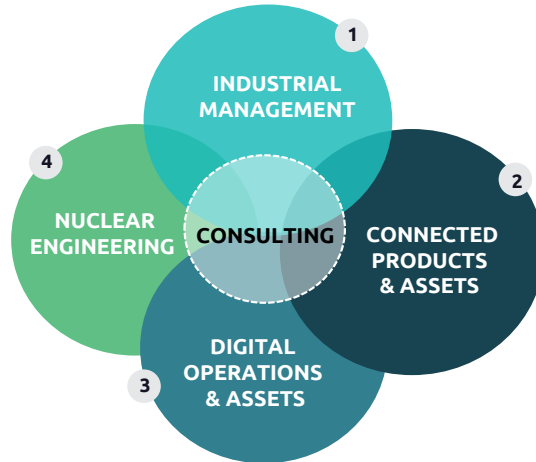
The customers we serve...

Worldwide reach to serve main customers: CEA, EDF, FRAMATOME, ITER, ORANO, TECHNICATOME...

WHAT WE DO...

Cappgemini is one of the world's main digital transformation leaders and service providers when it comes to nuclear energy. Cappgemini has developed over the years, a wealth of global experience in intelligent industry through business consulting, systems integration and nuclear engineering.

Cappgemini delivers high quality standards of services as well as reliable solutions for the types and scales of digital initiatives our customers may undertake, both now, and in the future.



1 - INDUSTRIAL MANAGEMENT

- Dismantling
- Project Management
- Nuclear Safety
- System Engineering
- Supply Chain
- Consulting,
- Quality

2 - CONNECTED PRODUCTS & ASSETS

- Remote Assistance
- Augmented Operator
- Assets Revamping
- Simulation (Facilities, processes, systems...)
- Products development
- PLM

3 - DIGITAL OPERATIONS & ASSETS

- Smart Factory
- Maintenance
- Instrumentation & Control Command Systems (ICS)

- Connected Products
- Connected equipment
- Managed Testing Services
- Digitalization of Engineering Documents
- Augmented Reality & Virtual Reality
- Industrial IT, IIoT
- Digital Transformation- Digital Continuity
- Cybersecurity
- E2E services

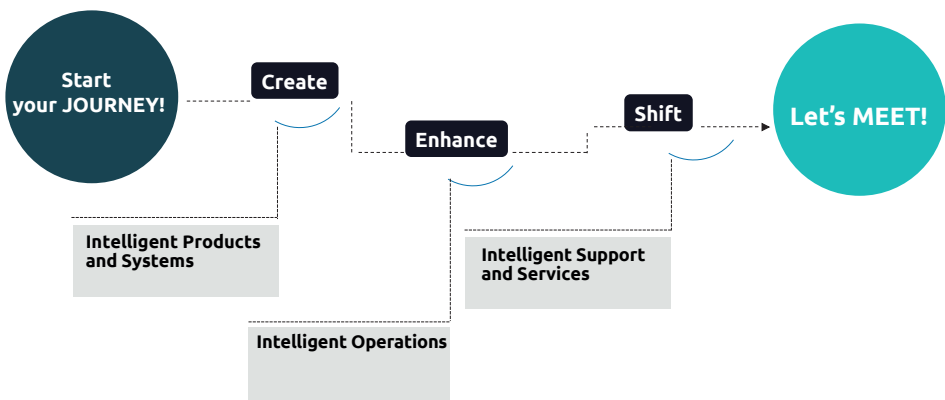
4 - NUCLEAR ENGINEERING

- Studies
- Products & Software engineering
- Virtual Design AR VR MR
- Scientific calculation
- Product lifecycle Engineering
- Embedded software
- Outsourcing Capabilities
- Safety Management Services
- Flow Simulation & Dismantling

By using the very latest in technology and innovation, we will be working to help create a world class nuclear energy excellence.

At World Nuclear Exhibition, embark with Capgemini for a thrilling journey and embrace the benefits of disruptive technologies!

We will be demonstrating on our booth, through a thematic path we expressly built for the occasion, how we scale new technologies to deliver added value for change and competitiveness: **digital continuity, nuclear engineering, simulation, digital twin, connected operator, virtual engineering, 3D design, immersive remote assistance across different locations and disciplines, operators' training...** are capabilities among others we master to address our customers' challenges for performance efficiency.



DISCOVER THE PROGRAM...

Digital Technologies are reshaping the nuclear energy industry, path your way with Capgemini!

Meet our experts

- Simulation: optimized interventions, production and maintenance activities with digital (complex facilities and plant design) technologies.
- Complex systems development for Safety
- Innovative solutions for Dismantling operations and scenarios
- Immersive Remote Assistance
- Improved Safety and Productivity with connected operators and equipment

Guided tours organized by WNE and led by our experts

TOUR A - Wednesday 1 & Thursday 2 – at 10am

Theme: **DISMANTLING COSTS REDUCTION**

Use case: WELMS, an Innovative Decision-Making Tool for Nuclear Waste Flow Management optimization during Dismantling

Workshops

FROM INDUSTRY 4.0 TO INTELLIGENT INDUSTRY

SCALING TO NUCLEAR EXCELLENCE

Olivier Cannonge - Head of Sales Energy France, Capgemini

Thomas Bachellerie - Technical Program Manager, Capgemini

1st Dec, from 4.00 to 4.30

FRENCH NUCLEAR INDUSTRY TRANSFORMATION - STANDARDIZATION & REPLICATION

Gérald Tessari - Chief Transformation Officer and Excell Plan Lead on Stream 5 « Standardization », EDF - DIPNN

Pascal Lucas - Director of Standardisation & Programmes, Framatome

Yann de Saint Germain - Senior Director - Energy & Utilities, Capgemini

2nd Dec, from 2.30 to 3pm

SIMULATION-BASED DISMANTLING: FROM DESIGN TO EXECUTION AND SERVICES

Eric Chambon - Manufacturing & Industrial Performance offering, Capgemini

Oriane Farcy - Chef de Projet - Recherche & Innovation, Capgemini

Vincent Pitard - IoT Solution Manager, Capgemini

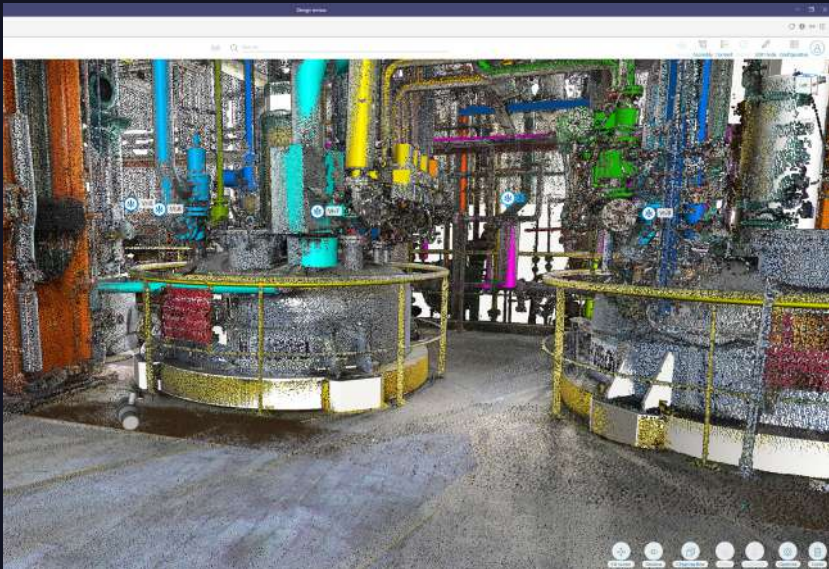
2nd Dec, from 3.30 to 4pm

...THE BEST WAY TO EXPERIENCE
CAPGEMINI JOURNEY!

Discover our solutions & expertise
in the next pages, and let's meet!

DIGITAL REVIEW IN 3D USING OPEN CASCADE WEB PLATFORM

Work collaboratively with your hybridized laser scans, 360° images and 3D models within MS Teams



Open Cascade unique platform provides a real interactive and easy-to-use 3D hybrid digital mock-up in MS Teams or a web browser from any device.

SOLUTION

Powerful 3D data interactions...

- Hybrid Asset Digital Mock-up (3D CAD, laser scans, 3D plant design,...) without size limit
- High performance 3D visualization and manipulation
- Creation and manipulation of hybrid 3D objects
- Annotations, attachments, attributes & tags
- Hybrid measurements and alignments
- Static and dynamic clash analysis
- User scenarios to be prepared, played and shared

...in a smart and easy to use web application:

- No client installation - all from a web browser
- All asset 3D data in one place with multi-user access
- User friendly behavior and touch-screen ready
- Full interactive 3D manipulation of big scenes
- Multi-device, standalone or mobile use
- Cloud compliant for data centralization and decentralized operations
- Installation on dedicated servers or in a secured cloud
- Integrated into MS Teams for better collaborative experience

CLIENTS' BENEFITS

Thanks to hybrid modeling enriched with powerful functions, this solution enhances:

- Explorations, analyses and simulations of large assets' operations: maintenance, inspection and revamping
- Exact design measurements and clash management for life-size simulations
- 3D visualization in a 3D interactive environment available for all registered users
- Remote accessibility to extensive volume of 3D data with a single web browser application
- High performance capabilities: standalone, mobile, collaborative and interoperable
- Easy access to model during review for external persons invited to meeting

PLANT DESIGN & ENGINEERING

END TO END ENGINEERING SERVICES INTEGRATOR

Design, Build, Commissioning, Run



Contact : Patrick Clovirola - patrick.clovirola@capgemini.com

Thanks to our multidisciplinary expertise on safety requirements, and our experience in managing large-scale projects, we developed an end-to-end integrator services solution dedicated to our major energy clients: from design and build, to commissioning and run complex systems, bringing support in manufacturing and construction phases.

SOLUTION

- Turnkey solution from design to commissioning
- Multidisciplinary engineering teams (electrical engineering, mechanical engineering, general installation, fluidic system engineering, supervision, MES/MOM...)
- Full management of the solution taking into account:
 - Timing
 - Budget
 - Operator's constraint

CLIENTS' BENEFITS

- Single point of contact
- Integrated solution
- Process agility
- Best-in-class solution addressing the client specific needs
- Plug & Play system

SMR MODULES LOGISTICS LEAN MANAGEMENT SYSTEM

Innovative decision-making tool for the management
of SMR modules logistics



An innovative decision-making tool to optimize the transport and on-site logistics scenarios, through SMR modules flows simulation, shortening the logistic phase and reducing costs.

SOLUTION

- Solution specifically designed for SMR
- Sizing & design of the processes (storage zone, lifting zone...)
- Rapid macro view of the transport & on-site logistic scenarios
- Multiple pre-feasibility scenarios according to the variation of specific site parameters
- Capitalisation of « Lessons learned » for future assemblies

METHOD

- Dedicated interface between the user and the "Discrete-event Simulation tool"
- Creation of an infinite number of scenarios and quick comparison
- Adaptation to the master plan and the installation constraints
- Real-time follow-up during installation and prediction of remaining activities

APPLIED TECHNOLOGIES

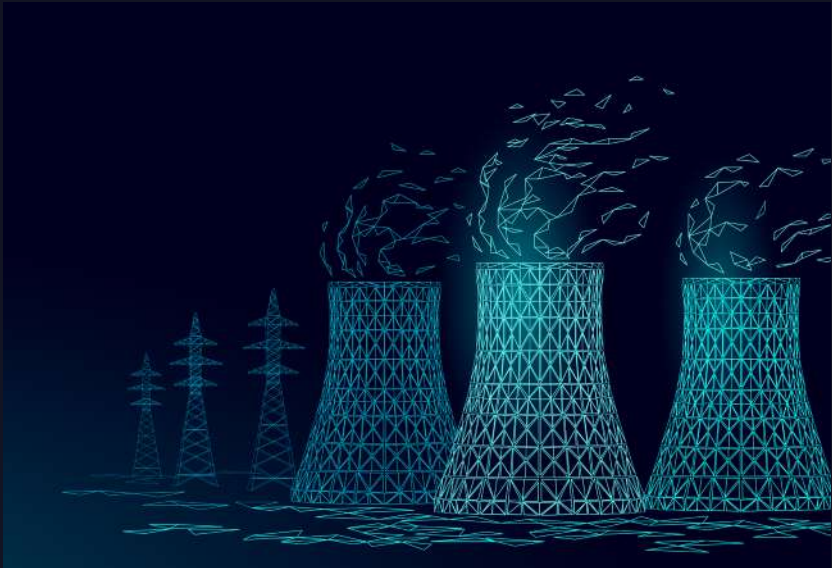
- Discrete-event Simulation tool"
- Materials flow simulation software

CLIENTS' BENEFITS

- Decision-making tool during the study and operation phases
- Adaptive tool to a numerous SMR case studies
- Real-time follow-up during installation and prediction of remaining activities
- Integration of schedule and potential risks
- Capitalizing database of past optimized scenarios

REMAINING USEFUL LIFE ESTIMATION

A multi-physics tool to emulate a system behavior



A patented solution providing a checkup of equipment under pressure, facilitating the decision-making processes regarding nuclear plant life expectancy, decreasing failures and lowering maintenance cost

SOLUTION

- As facilities age and competitiveness becomes a major concern for the nuclear power industry, we have developed a dedicated solution providing a checkup of equipment under pressure
- Our patented solution makes it possible to estimate the useful-life of assets in real time using a multi-physics tool emulating system behavior, a system digital twin and an online coupled thermal-hydraulic and mechanical solver

OUTPUTS

- Accurate and reliable fatigue quantification
- Real-time useful life estimation
- Fatigue history registration

APPLIED TECHNOLOGIES

- Online coupled thermal-hydraulics and mechanical solver
- The core solver is based on Modelica® Libraries and proprietary solvers® driven by a time dependent multi-physics solver.

CLIENTS' BENEFITS

- Equipment and component safety and operation margins calculation
- Decision support system for adapting system operating strategy to restore operating margins and in case of failure or risk
- Repair and maintenance decision support system
- Detection of sensors drift
- Increase equipment lifetime
- Decrease maintenance cost

MBSE TO SUPPORT SAFETY ANALYSIS



Complex systems safety analysis enablement with MBSE dynamic models

SOLUTION

- Complex systems' safety analysis process support
- System architecture analysis
- Check system failures impacts and propagation at physical, functional and operational levels
- Analyze system behavior and reconfiguration subsequently to a failure occurrence
- Ease communication between stakeholders
 - Through behavioral simulation
 - Using a standalone model

CLIENTS' BENEFITS

- Certification process optimization
- Faster multi-systems analysis on safety issues
- Allows earlier inconsistencies identification in the development cycle
- Eases communication between designers and safety teams through simulation

APPLIED TECHNOLOGIES

- SysML Modeler
- Traceability
- FuSA

"MBSE will allow you to explore an exponential number of degradation scenarios, far beyond what a human brain, even expert, can do. »

DIGITAL FULL-SCOPE TRAINING SIMULATOR



Digital Control Rooms (DCR) solution

SOLUTION

Capgemini and a major partner had to develop and deploy the overall infrastructures, off-the-shelf hardware, software tools and related services enabling:

- High-fidelity copy of the real control room to significantly reduce the cost of simulators
- Easy customization and flexibility (quick change of software version depending on the operator's needs)
- Improved training drills on new equipment failures and recorded recovery actions
- Digital panels, on-screen components, HD 27 InTouch-screen, haptic actuators, colors, lights, layout space, different sounds of a real control room..
- New detection tools of failures of DCR components
- A reliable system to operator movements, customizable, reconfigurable and based on touch screens
- Improved instrumentation & control systems
- Low upfront investment and maintenance costs
- Operator assessment for licensing

“*Reviewing our simulator strategy has enable us to establish that we need customizable and reconfigurable resources. The DCR meets these goals far better than a traditional simulator does, even if there's a risk involved for us in adopting a new technology. So far, this has been a winning strategy: the lead times for integrating changes in the control room will be halved explains.*”

The Head of the Skills Program at major integrated electricity company

INTELLIGENT DISMANTLING

WASTE EVACUATION LEAN MANAGEMENT SYSTEM

Innovative decision support tool
for Dismantling Operations



Contact : Oriane Farcy - oriane.farcy@capgemini.com

With the increase in number of nuclear power plants shutdown, nuclear decommissioning activities are in worldwide expansion. We have developed a smart solution to optimize dismantling scenarios and decommissioning costs.

SOLUTION

- In order to prepare the decommissioning processes, we offer to improve decommissioning management efficiency by developing an innovative decision support tool, called WELMS (Waste Evacuation Lean Management System)
- Its objective is to anticipate the performance of a suggested scenario for dismantling operations, by means a logistic approach, and determine how improve the process in terms of cost, time, performance and safety
- This Waste Evacuation Lean Management System converts decommissioning input data to a logistical approach
- Through a dedicated interface with 3D simulation and visualization of the major performance indicators, the user is able to test different scenarios and choose the most relevant

APPLIED TECHNOLOGIES

- WELMS patent application
- Material flow simulation software
- Nuclear logistic approach
- Dosimetry evaluation and ALARA automation

CLIENTS' BENEFITS

- An innovative decision support tool for logistic management of nuclear decommissioning
- Improve decommissioning management efficiency
- Logistic flow optimization, coupled with dosimetry evaluation
- Adapted to many case studies and nuclear plants specificities with a macroscopic approach
- Various results with model comparison approach
- Protection of operators by automatization of ALARA approach
- Optimal configuration in terms of cost / delay / safety

INTELLIGENT DISMANTLING

SIMULATION AIDED OPTIMISATION FOR NUCLEAR INDUSTRY



Contact : Eric Chambon - eric.chambon@capgemini.com

A tool-based approach by simulation to optimize and maintain all the performance factors of the industrial system:

- **Operate nuclear facilities design review and trade-offs**
- **Reduce Commissioning process lead-time**
- **Optimize nuclear facilities operations : output/lead-times**
- **Optimize Dismantling scenarios**
- **Optimize Nuclear materials flow**
- **Deploy MBSE concepts for nuclear operations**

SOLUTION

- **Plant simulation Business Analysis** - Diagnosis, target definition, business issues to tackle
- **Modeling** - Industrial system, human organization, flow management rules and constraints
- **Simulation** - Interactive workshops, what if scenarios, bottlenecks identification and solving
- **Recommendations** - Solution identification, design review, flow masterplan

CLIENTS' BENEFITS

Facility dismantling scenarios optimization

- -50 % lead time
- -70% waste storage
- +100% workload smoothing

Workshops design trade-offs:

- -50 % Lead-Time
- - 5M € CAPEX 5M€
- - 300 k€/y OPEX

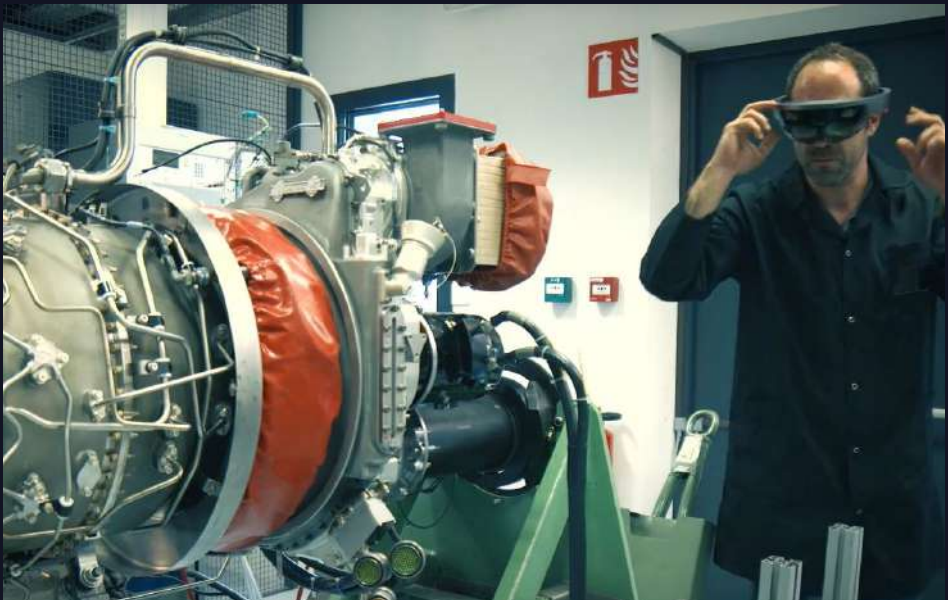
Vapor Generator Production Optimization:

- +100% output
- -40% lead-time
- -80% waiting times



IMMERSIVE REMOTE ASSISTANCE PLATFORM

From remote assistance to immersive and collaborative intelligence, supported by dedicated features and 3D continuity



Andy3D is a unique remote assistance platform providing digital continuity of 3D models and fully customizable to customers' IT environment

SOLUTION

- An innovative platform for remote assistance, cloud and on premise solutions, multi-devices, AR/VR
- Capgemini Immersive Remote Collaboration Solution tracks and solves suppliers' quality issues faster, at scale
- The only remote platform which ensures the digital continuity of 3D models
- Simple, intuitive and efficient to use, but also offers advanced immersive features that can be activated as needed (AR, VR, 3D)
- Fully integrated into client's IT environment or deployable in SaaS mode with a high level of security
- Adaptable to all operational use scenarios in the field, thanks to the broadest ergonomic hardware and OS coverage in the market, hands-free or not, IP Cameras and Robots piloting, maximizing the user experience

CLIENTS' BENEFITS

- Collaboration and knowledge sharing, between mobile workers – in situ or at customer sites – and remote centers of excellence, such as engineering; maintenance and customer services
- Digital-physical convergence throughout the development phases: Prototyping, industrialization, validation, launch, inspection and maintenance
- Full support for operations for both products and infrastructure

APPLIED TECHNOLOGIES

- Wifi - 3/4/5G - Low Band Management
- SaaS / Public-Private Cloud & On-Premise: Tailored IS/IT Integration
- Multi-OS / Multi-Devices
- Collaboration Multi-Users & Locations: Audio / Multi-Video Streaming / Chat / Annotation / Photo / Documents & Screen Sharing
- Session Storage / "Guest" Invitation
- 3D advanced features: 3D CAD Model Remote Sharing, AR Markerless Annotation
- Natively Secured: with tailored security rules implementation

CONNECTED OPERATOR

To prevent health incidents and improve working conditions, safety and productivity



Our solution measures individuals' posture and exposure preventing professional illnesses and wrong gesture

SOLUTION

- The Connected operator solution is in the heart of intelligent industry for prevention & working condition improvement
- This solution consists of a garment equipped with 10 sensors gathering the movements of operators in real time
- An external camera can record the worker activity to replay only sequences containing bad posture
- Ergonomists, EHS staff can therefore gather real measured individual data that makes postural analysis objective and based on facts
- Extra sensors can easily be plugged (weight carried, cardio monitoring, but also alerting, production data etc...) to build a fully connected experience

APPLIED TECHNOLOGIES

- Accurate movement sensors
- New algorithms to cover all the postures (based on quaternion)
- BLE & 5G

CLIENTS' BENEFITS

ENHANCE WORK RISK PREVENTION

- Improve posture & gesture
- Improve working conditions & work place design

INCREASE WORKER SAFETY

- Geolocation & access control
- Immediate Risk alerting

INCREASE PRODUCTIVITY

- Prevent illnesses & absenteeism
- Promote return to work

INTELLIGENT OPERATIONS

PSPR

Risk Supervision System



Contact : Nicolas Nguyen - nicolas.nguyen@capgemini.com

A preventive risk management solution for nuclear power plants

SOLUTION

- Monitor simultaneously workplaces and workers (exposed to ionizing radiations) performing maintenance operations
- Set a digital communication network between the centralized supervision room placed out of controlled areas and the operators through individual and collective wireless equipment
- Take care up to 40 IP cameras, 40 equipment of audio communication and approximately 100 equipment of physiological parameters measurement, radiation protection beacons, dosimetry, radiometers, temperature and moisture...
- Manage and store all relevant data in real for possible post-treatments (feedback, pre-job preparation)
- Integrate radiological protection and dosimetry equipment

CLIENTS' BENEFITS

- Safer work environments by early warnings plant failures
- Reduced individual and collective radiation exposure through real time monitoring
- More organized maintenance operations that drive improved safety KPIs
- Powerful data and analytics for a greater plant supervision (inside & outside the reactor) and decision-making efficiencies
- A better use of work and radiation protection equipment thanks to training sessions and new technologies
- Real-time work supervision (audio & video and touch pads)
- Remote assistance with Augmented Reality
- Bringing temporary wired and wireless devices inside the reactor building for connecting equipment without disturbing the workspace

INTELLIGENT OPERATIONS

MANUFACTURING SURVEILLANCE DIGITAL TRANSFORMATION



Contact : Bakr Naciri - bakr.naciri@capgemini.com

Secure procured assets quality through targeted surveillance on critical manufacturing and supply chain steps

SOLUTION

- **Standard surveillance ranges & templates** based on **risk evaluation** and lessons learnt
- **Rolling & detailed scheduling** of surveillance up to Manufacturing completion
- End-to-end **data centric surveillance process**:
 - **Checklist based** manufacturing for **deliverables surveillance**
 - **Mobility enabled** factory surveillance
- **Roles & responsibilities** review throughout the end-to-end process, from manuf. risk analysis to scheduling, and surveillance execution

CLIENTS' BENEFITS

- **Standardized** manufacturing surveillance, **component oriented**
- **Reduced hassle for the inspection teams** (inspection preparation)
- **Increased productivity** for surveillance teams
- Better knowledge **management of lessons learned**
- **Reduced** manufacturing **non-conformity** / better manufacturing
- **Robust reporting** of quality surveillance to clients

DIGITAL TWIN FOR OPERATORS

A secure, cloud-based digital twin platform enabling data-centric collaboration for building and infrastructure operations and maintenance



Reflect IoD, a unique platform to integrate natively the information produced throughout the lifecycle of the asset (IoT, CMMS, BIM, document management, PLM...) to facilitate Operations & Maintenance

SOLUTION

- Industrial assets such as buildings, factories or infrastructure networks, produce a lot of data, at different times of their lifecycle, in different formats, by different actors, and especially hosted in IT silos. This minimizes the efficiency of operators in their day-to-day activities (supervision, maintenance...), the time to access data, or the creation of new digital services
- Reflect IoD is a platform that federates data from multiple sources to equip Operators and their management with modeling, visualization, performance measurement, analysis and operational tools (360 view of all assets' data, alerts, switch view, color reports, dashboards, analytics tools...)

Our approach is to:

- Deploy a Digital Twin platform by adopting a value driven approach
"Identify data & critical problems ;
Solve it locally and Record gains;
Consolidate and Deploy"
- Prove the value in real data conditions :
4 months to get results, 6 -12 month
for at scale use cases deployments &
ROI

CLIENTS' BENEFITS

Increase:

- Workforce efficiency by 10%-30%
- Asset reliability by 10-20%
- Compliance to standard

Reduce:

- Time to find the right data by 35%
- Handover time by 10% 30%
- Maintenance costs by 5 20%

OPERATING PROCEDURES DIGITALIZATION



We were selected by a major Nuclear player to digitalize their operation procedures enabling the client to:

- **Control nuclear installations using operating procedures**
- **Consult dematerialized operating procedures in situ, on and off - line**
- **Write and validate operating procedures**
- **Visualize and trace the sequence of tasks in normal situations**
- **Access diagnostic assistance and standardized action plans in the event of deviations**
- **Simplify the updating process**

SOLUTION

- Web application for writing and validating operating procedures
- Management of flowcharts, xml import of operating procedures, integration of multimedia content
- Control of validation and publication of modifications - Synchronization with tablets
- Mobile application to run the operating procedures and ensure the follow-up of the interventions by offering shooting capabilities
- Generic solution, available on mobile platforms (Windows, Android, iOS) adaptable to all business needs: maintenance procedures, compliance monitoring, monitoring of test phases before commissioning of facilities
- Recovery of the 40,000 existing procedures

CLIENTS' BENEFITS

- Agile method
- Realization of the previous specific application of management of the operating modes
- Assistance in writing, links to the technical repository of equipment
- Ability to automatically integrate all existing documents (xml, Word, DBMS)
- Technical mastery of the products, of the integration in the Customer IS and of the deployment on the tablets

LOCATION BASED SERVICES

Increase operational efficiencies, workers safety
while reducing costs



We provide targeted use cases leveraging our cross-industry experience to address your specific business pain points. We guide you through technology choices and long term open solutions and experienced major technologies and continuously integrate new sensors & technologies in our framework.

SOLUTION

- Location-based services (LBS) is one of - the-shelf single platform, able to solve critical industrial challenges
- Thanks to a modular & centralized architecture, LBS collects data from any source, integrates multiple technologies/connectivity and builds a wide range of use cases such as Asset Tracking, People safety, Smart Supply or Machine monitoring
- We combine our domain knowledge with technology and deliver the right solution and services to solve your business problem. We cover all phases of projects and can deliver turnkey solutions if needed

CLIENTS' BENEFITS

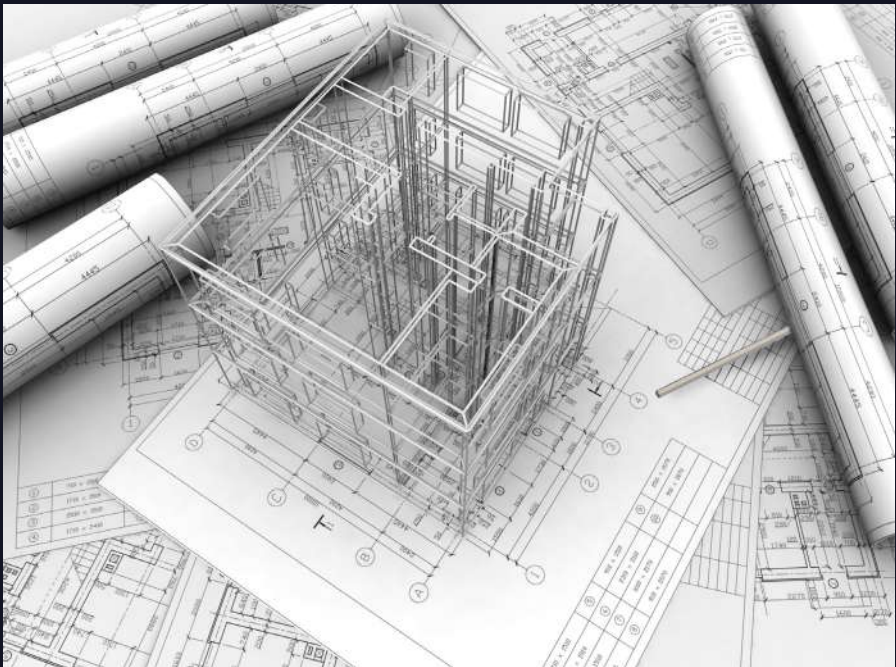
- **From the use case to operations:** we understand your environment and select the piece that makes sense in your case
- **Core features tailored to your use case:** business-centered processes relying on a flexible interface and dynamic data model
- **Modular & flexible platform:** The solution can be deployed in your environment and capture data from any sensor, over any communication means
- **Vast choice of pre-integrated technologies:** We propose a large range of technologies. Our framework delivers ready-to-use interfaces and is easily tailored to your specificities
- **Workflow centric:** from mere inventory to sophisticated logistics flows

APPLIED TECHNOLOGIES

- **Outdoor geolocation:** Satellite, Cellular, Wifi sniffing
- **Indoor geolocation:** BLE, RFID, UWB, Ultrasound...
- **Connectivity:** LPWAN (LoRa..), Cellular (3G/4G/5G) , Local network (BLE, Wifi, Modbus...)

DIGITAL REJUVENATION OF LEGACY ENGINEERING

Combine legacy documentation, technical databases and laser scans to build an up-to-date Digital Twin



Turn your legacy documentation, databases, 3D models and laser scans into an up-to-date Digital Twin model thanks to Open Cascade platform

SOLUTION

Build and align your data model on norms and standards

Our user-friendly ontology editor allows quick and error safe building of your data model

Collect all asset's information & tags from documentation

AI Powered solution to retrieve all information from technical documentation

Turn old schematic into intelligent documents

Back progress your P&ID, cable diagrams and other schematic

Gather all information into a single consistent database

Compare and consolidate data from documentation, CMMS or other technical databases

Build a 3D model based on isometrics, layouts and point cloud

Combine all information to build an as-of-today 3D model representing the actual state of your asset

CLIENTS' BENEFITS

Consistent Data model aligned on norms

Allow your engineers to develop data model aligned on CFIHOS, ISO15926 or other standards to support your business needs

Cost effective data preparation

Semi automated process relying on artificial intelligence, automation and decision tooling to enable populating your digital twin with trustable information

Integrate all information from your Asset

Completeness and correctness is key to get adoption from teams and improve sustainably your processes

Enable development of business application to optimize and create value out of your assets

Reveal all information to your engineers and develop mobile apps to optimize their work or improve safety



About Capgemini

Capgemini is a global leader in partnering with companies to transform and manage their business by harnessing the power of technology. The Group is guided everyday by its purpose of unleashing human energy through technology for an inclusive and sustainable future. It is a responsible and diverse organization of 290,000 team members in nearly 50 countries. With its strong 50 year heritage and deep industry expertise, Capgemini is trusted by its clients to address the entire breadth of their business needs, from strategy and design to operations, fueled by the fast evolving and innovative world of cloud, data, AI, connectivity, software, digital engineering and platforms. The Group reported in 2020 global revenues of €16 billion.

Get the Future You Want I www.capgemini.com