

# INTELLIGENT INDUSTRY SHAPING THE FUTURE OF DEFENSE





# CAPGEMINI, A LEADER FOR LEADERS

## Capgemini

As a global leader in consulting, digital transformation, technology and engineering services – with unrivalled industry expertise – we enable our clients to design and build tomorrow's businesses, make the most of the opportunities offered by technology, and boost their competitiveness and agility.

## Capgemini Engineering

Capgemini and Altran join forces in Engineering and R&D to create the global digital transformation leader for industrial and tech companies.

We are Capgemini's engineering and R&D powerhouse.

With our 52,000 engineers and scientists worldwide, we unleash the potential of R&D to help our clients create smart products,

operations and services at scale, and, with the rest of the Group, accelerate their journey towards Intelligent Industry. With our deep industry knowledge, our cutting-edge technologies in digital and software, and our nimble mindset, we are well positioned to be the strategic partner of our clients in this transformation journey.

## We pioneer Intelligent Industry

We foster synergies between the Digital and the Engineering worlds to help any company build intelligent products, operations and services at scale with digital inside everything, digital continuity throughout lifecycle and digital convergence with its ecosystem, allowing the rise of a sustainable Intelligent Industry era.

€18bn  
revenue

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340,000  
people  
with more than 52,000 in  
Capgemini Engineering

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50+  
countries  
with more than 120  
nationalities

# OUR DIFFERENTIATORS

As a leading strategic partner to companies around the world, we address the entire breadth of business and engineering needs. We accompany Space, Defense and Naval players on their implementation of means and processes to increase their capability to deliver value faster. We provide a set of frameworks to support any project in Agile manner without any compromise on security requirements.



## Digital Transformation

We keep on investing in accelerators such as **Data analytics and science, AR/VR frameworks, IoT Solutions and DevSecOps** platform tailored for Space, Defense and Naval use cases.



## Complex Engineering powerhouse

We have developed a proven expertise in supporting **engineering of complex systems** with **key engineering disciplines**. Including System of Systems and Model Based System Engineering (MBSE) with a 360° view and an ability to implement it at speed and scale.



## Production & operational maintenance

We focus on the **automation of (software) engineering processes** to fight the ever-growing market demand for more engineering capacity. Our global scale combined with decades of experience result in delivering and maintaining highly critical systems in the most demanding industries.

# OUR DEFENSE & NAVAL PORTFOLIO

## Future-ready Complex Systems

**Systems become more and more complex and must integrate future technologies**

- Model Based methods (MBSE)
- Autonomous Military Systems
- Secured Combat Cloud & Connected Battlefield
- Critical Software & Electronics

## Optimized & Secure Engineering Transformation

**Implement new engineering methods & technologies while respecting required security levels**

- Engineering Automation
- DevSecOps
- Change management and adoption of next-gen Engineering Technologies



## Intelligent Support & Services for industry

**Develop services associated to the product**

- Big Data Analytics
- Efficient Supply Chain for In-service Products
- Testing of complex systems
- Mixed (augmented) reality
- Secure industrial operations
- Advanced Technical Publications



## Intelligent Operations

**Digitalization of the manufacturing process while respecting the domain security constraints**

- Smart Factory
- Cybersecurity (IT/OT) convergence
- Smart Energy Management
- Intelligent Supply Chain for manufacturing



WE HAVE STRONG  
& SUCCESSFUL  
PARTNERSHIPS  
ACROSS THE SPACE,  
DEFENSE AND NAVAL  
ECOSYSTEM





# 01 SHOWCASE

## Adrenaline Open Hardware Innovating in the virtualization of ECU and embedded edge for military vehicles

We are deploying our own open sources middleware software stack (Project Adrenaline) to evaluate the performance and viability of open disaggregated hardware architectures to lower the total cost of ownership of vehicle compute infrastructure.

### Key objectives:

- Create a prototype software package for disaggregated HW/SW architectures using Project Adrenaline middleware.
- Use standard COTS hardware with several form factors i.e., embedded systems, RISC-5.
- Create a single cluster with nodes to demonstrate application deployment.



# SHOWCASE

## Man Machine Teaming (MMT)

MMT is an initiative launched and funded by the French DGA. Led by Dassault Aviation and Thales, it aims at creating an innovative ecosystem regarding Artificial Intelligence and the new man / machine relationships applied to combat aeronautics.

### 29 projects in 5 Domains:

- Virtual Assistant and Smart Cockpit
- Crew Interactions
- Mission Management
- Smart Sensors & Services
- Aircraft Operations & Support

### Our ambition:

Leverage cross-industry capabilities and World Class Centers in support of 10 projects (covering all domains).



# 03 SHOWCASE

## Industrial Digital Twin for next gen aircraft

Capgemini partnered with the client to implement a value-driven transformation to prepare the next gen aircraft and transform industrial systems.

We supported the client's journey to rethink the way to design and operate an aircraft, ensuring co-development of the product and industrial system.

### **Capgemini's contribution on industrial Digital Twin includes:**

- Digital Continuity audits
- Use case definition
- Value definition and measurement
- Architecture and solution definition
- Industrial Digital Mock-up
- Virtual Commissioning
- Rate Simulation and Capacity Management
- Shopfloor Connectivity
- Governance, Transformation & Change

The program approach for Digital Twin is designed to fit with client's industrial system and enterprise architecture.

Our solution is not pure process or IS/IT transformation, but a holistic enterprise transformation with industrial Digital Twin.

Benefits Delivered

REDUCED TIME  
TO MARKET

BREAK-EVEN  
AFTER 4 YEARS





## « Horizon frigate » combat system definition

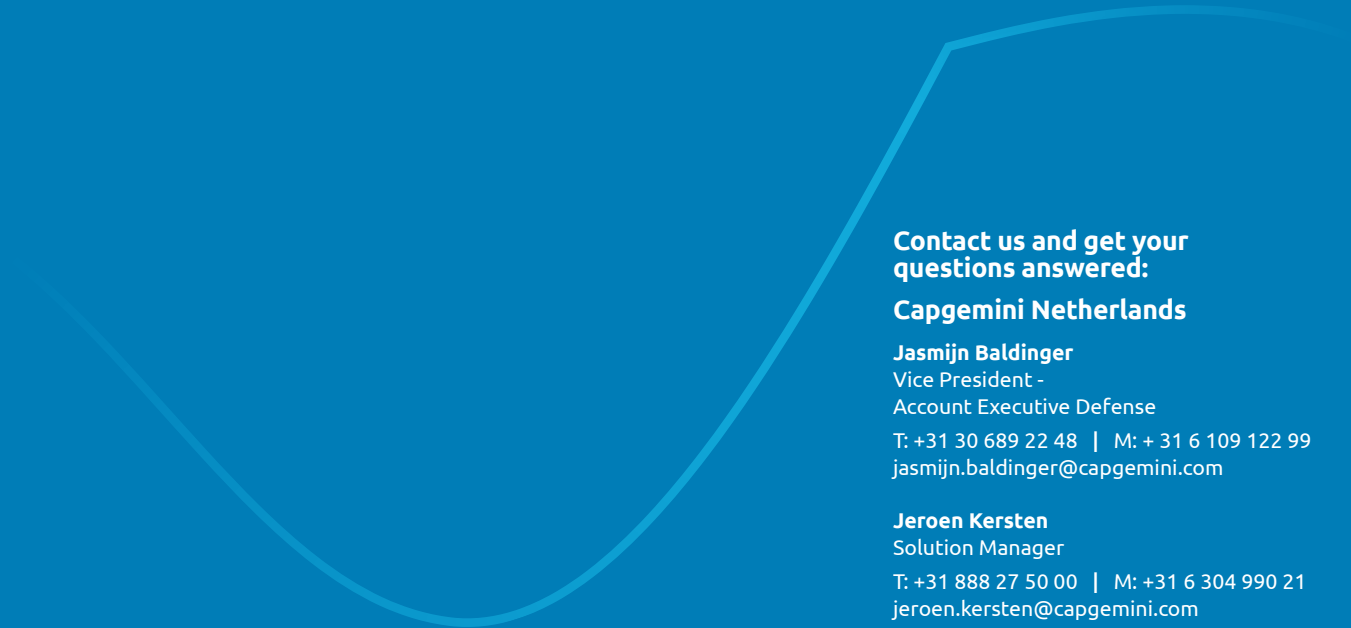
Capgemini was requested by client to support the definition phase of the Horizon combat system , to develop the System and Sub-systems specification (System of Systems approach) and to develop an MBSE model aiming at supporting and validating the Operational Concept and System architecture.

### SOLUTION

- To specify the Missions and operational concept of the Combat System (including the integration within the overall Task Force - System of Systems approach)
- To specify the Combat System and integration of the different subsystems composing the combat system: Radars, sensors, Electronic Warfare System (EWS), CMS, Missile systems (PAMS), guns, communication Datalinks, ...
- Model development regarding:
  - Operational scenarios definition
  - Functional breakdown definition
  - Functional chains elaboration
  - Interface definition
- System and sub-system documentation generation out of both the textual definition and the graphical definition.

### ADDED-VALUES

- Operational concept
- System architecture
- Requirements maturity
- Definition mistakes identification and resolution
- Specification generation



**Contact us and get your  
questions answered:**

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## 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 over 340,000 team members in more than 50 countries. With its strong 55-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 2021 global revenues of €18 billion.

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