UNLEASHING R&D'S POTENTIAL

2021

Introduction

Capgemini ♠ engineering

SHIFT, SPEED, SCALE ON INNOVATION MARKETS

5 MAJOR DRIVERS OF CHANGE

Products, processes and services are digitalizing at an accelerated speed and with an increased depth

Traditional sectors are disrupted as digital intruders conquer new battlefields

Globalization is reshuffled by new sovereignty and resilience arbitrage

In the search for efficient time to market, Companies' mastery of evolving regulatory landscape becomes critical

Consumer and financial markets are looking now for responsible products & development models

3 PRIORITIES FOR TOMORROW'S LEADERS

Shift to a service mindset in world eaten by software

Speed up the game by accessing the right skills at the right time

Scale disruptive models to build competitive separation

1 CALL TO ACTION

Build new engineering partnerships to unleash the R&D's potential

WHO WE ARE

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.

#1
IN ER&D MARKET
SINCE +30 YEARS

52,000
ENGINEERS
& SCIENTISTS

30+
COUNTRIES
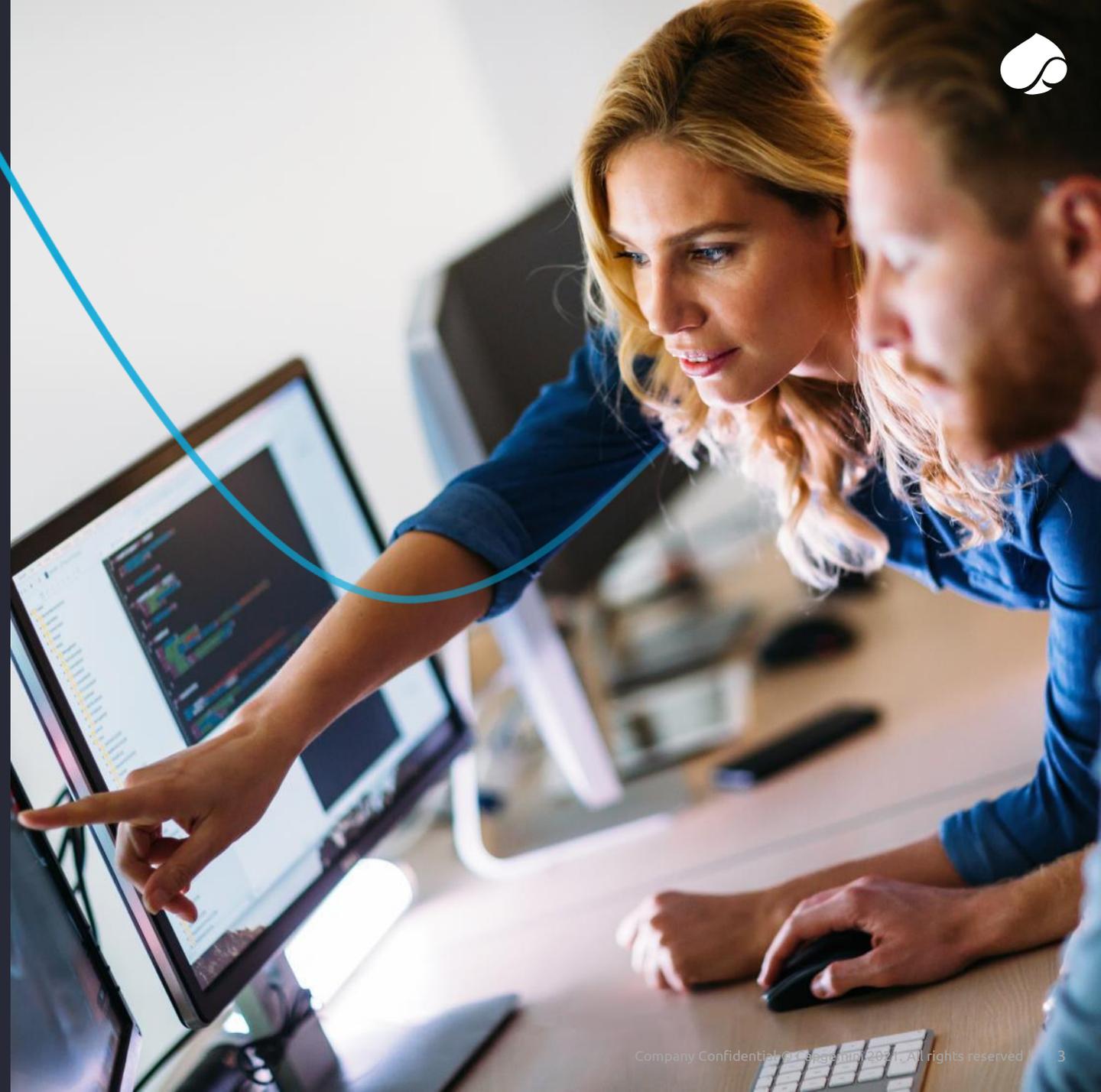
WE PIONEER THE INTELLIGENT INDUSTRY

" 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. "

Everything becomes intelligent

Intelligent Products Design & Engineering	➕	**Intelligent Operations** Smart factory & Smart supply chain	➕	**Intelligent Support & services**

← **Digital Inside** products & systems →

← **Digital Continuity** across the life cycle →

← **Digital Convergence** of technologies →
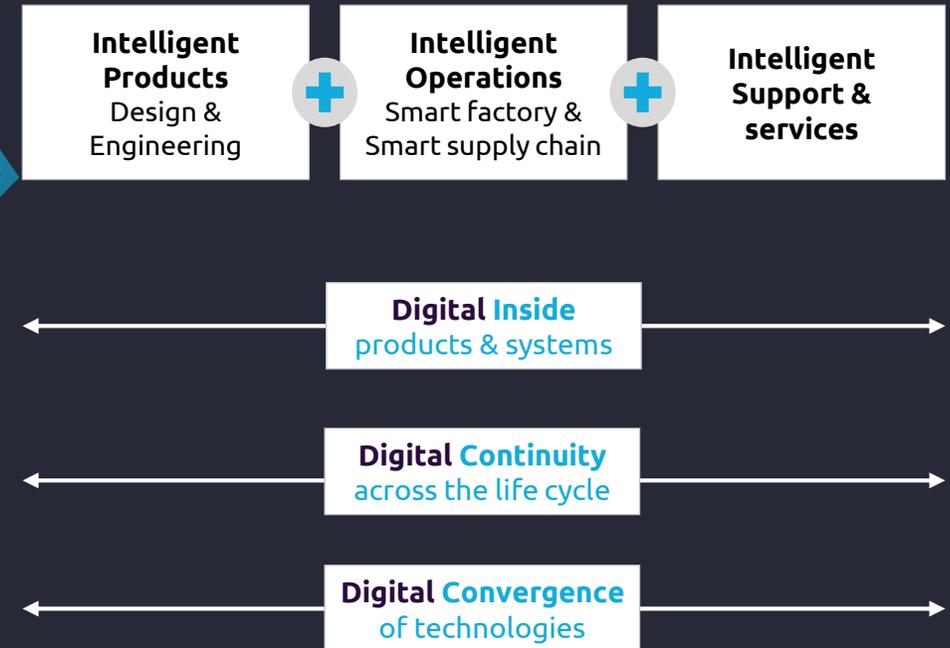
Powered By Data & People Centricity

WE ARE THE LONG-STANDING PARTNER OF INNOVATION LEADERS IN R&D INTENSIVE SECTORS

30+

years expertise in product engineering

Ranked as strategic partner by

50+

clients

2/3rd

Of the top 500 global R&D spenders are clients

AUTOMOTIVE
STELLANTIS · MAN · VOLVO · BOSCH · VW · BMW

AERONAUTICS
SAFRAN · AIRBUS · RR (Rolls-Royce)

SPACE, DEFENSE & NAVAL
ThalesAlenia Space · DASSAULT AVIATION · AIRBUS

RAIL, INFRASTRUCTURE & TRANSPORT
SNCF · ALSTOM · Wabtec Corporation · NetworkRail

ENERGY
EDF · ENGIE · SIEMENS

LIFE SCIENCES
gsk · GE · Boston Scientific · SANOFI · TERUMO

CONSUMER
Whirlpool Corporation

INDUSTRIAL
VANDERLANDE · ABB · RioTinto

AND THE ER&D PIONEER IN PIVOTAL INDUSTRIES

COMMUNICATIONS
vodafone · verizon · CISCO · at&t · NOKIA

SEMICONDUCTOR & ELECTRONICS
QUALCOMM · RENESAS · ThermoFisher SCIENTIFIC
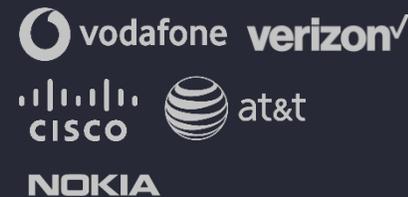
SOFTWARE & INTERNET
IBM · Microsoft · aMaDEUS

A GLOBAL FOOTPRINT

We are everywhere our clients need us to extend their engineering and transformation capabilities.

KEY ENGINEERING DISCIPLINES

Product & systems engineering

- Mechanical & Physical Engineering
- Electrical, Electronics & Semiconductors
- Systems Engineering & Product Design

Digital & Software

- Software Engineering
- Connectivity & Network Engineering
- Data Science, Analytics & AI

Industrial Operations

- Manufacturing & Process Engineering
- Operations Management
- Product Support & Services

Capgemini Engineering presence

Australia	Finland	Italy	Morocco	Slovakia	Tunisia
Austria	France	Japan	Netherlands	South Korea	United Arab Emirates
Belgium	Germany	Luxembourg	Norway	Spain	Ukraine
Canada	India	Malaysia	Poland	Sweden	United Kingdom
China	Ireland	Mauritius	Portugal	Switzerland	United States of
Czech Republic	Israel	Mexico	Romania	Taiwan	America

DIGITAL & SOFTWARE ENGINEERING

With a unique position at the crossing of tech & industries, we bring together the rarest and most highly skilled experts to help clients grow and seize business transformation opportunities at the continuous speed of today's markets.

Digital Engineering & Manufacturing

Software Products Engineering

Software Product Support & Transformation

We enable the adoption of Digital technologies in the cyber-physical world from design to operations & support through effective implementation of accelerators

We help our clients to capture new markets and business models by accelerating the development of disruptive software products and services

We combine our design-led engineering expertise, software frameworks and outcome-driven business model to modernize core products

- Advanced Engineering Analytics & AI
- Intelligent Operations | Smart Factory
- Digital Continuity
- Advanced Connectivity for Industries | 5G | Private Networks
- Cloud based | MACS-based Software Product Engineering
- Software Product Support & Transformation | SPST

INDUSTRIALIZED GLOBALSHORE

Our premier Engineering and R&D global delivery platform offers:

- Accelerated, differentiated and **disruptive delivery models**
- Integrated GPO **governance** between front office and engineering centers
- Strong **intimacy** with client organization in their different locations
- Streamline and automate through cross shore leverage, standards, methods and tools
- Proven quality benefits at scale to meet the speed of fast changing markets
- Unmatched cost advantage combined with industry knowledge

OUR ENGINEERING CENTERS

Global Engineering Center or
Technology Engineering Center
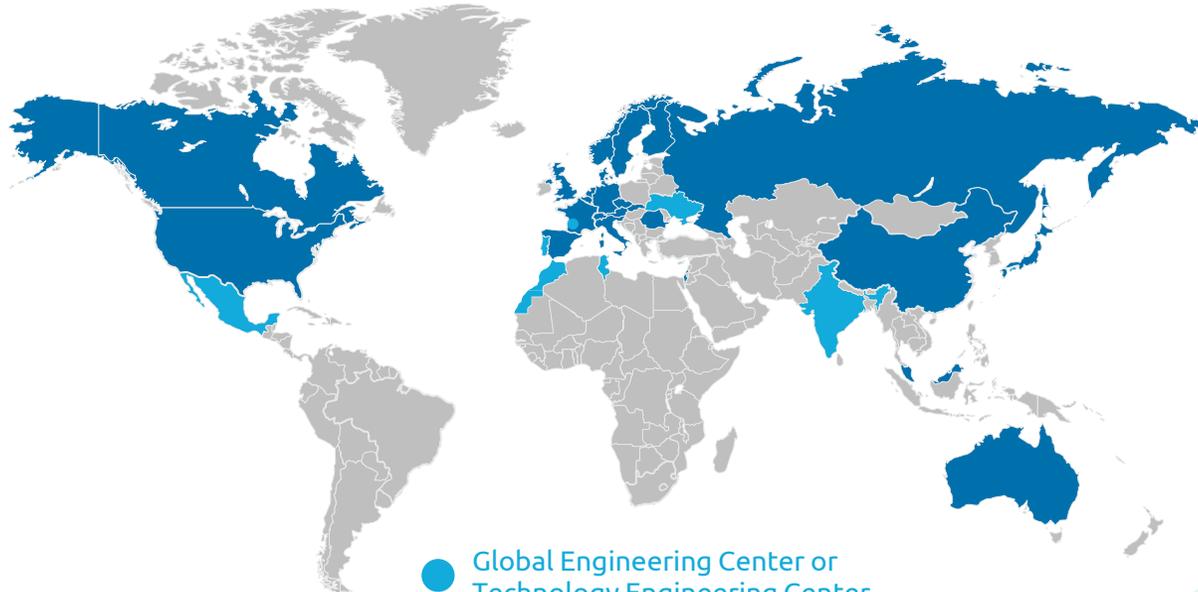
25,000+
GlobalShore Engineers

- Connectivity & networks
- Semiconductor
- Embedded software
- Software engineering
- Mechanical
- Testing/Simulation

EXPLORING THE FUTURE ACROSS SIX MAJOR PROGRAMS

Capgemini Engineering Research & Innovation programs are business accelerators that help clients with high-intensity R&D to prove the value of incremental and disruptive technologies by pioneering engagements built around recognizable assets. Clients go further, faster and to places they would not necessarily go alone.

PROGRAM #1

FUTURE OF MOBILITY

PROGRAM #2

FUTURE OF NETWORKS & COMPUTE

PROGRAM #3

FUTURE OF HEALTHCARE

PROGRAM #4

FUTURE OF ENERGY

PROGRAM #5

FUTURE OF INDUSTRY & ENGINEERING

PROGRAM #6

APPLIED AI
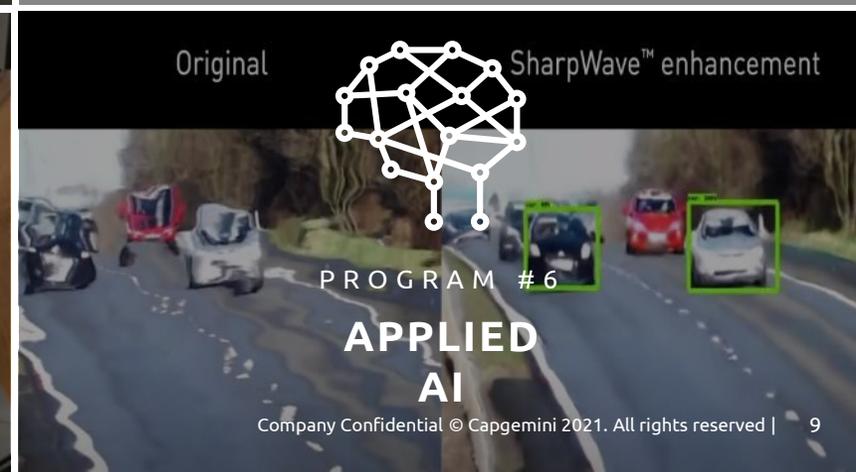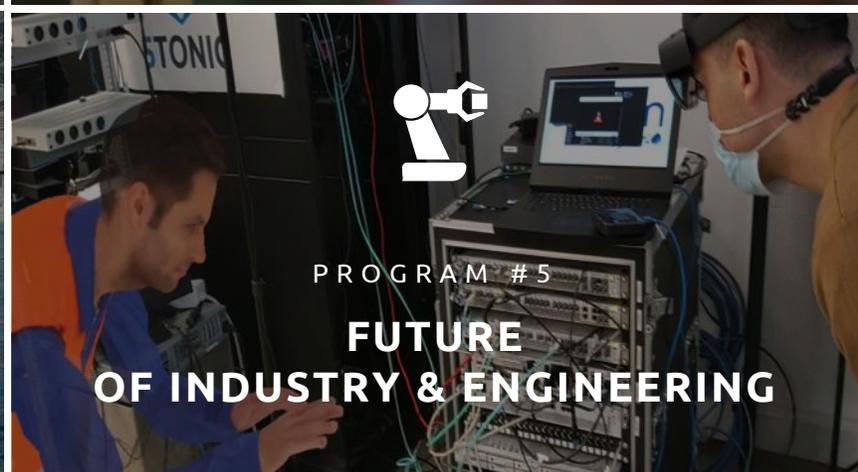
SELECTED SUCCESS STORIES

MAN

We acted as a development partner to **electrify a new generation of trucks** for MAN Truck & Bus AG, from **concept to homologation**, leveraging our expertise in the field of electric mobility and full vehicle development.

THALES ALENIA SPACE

We helped space engineers show how **augmented reality (AR) and mobile technologies** can improve the crew's **efficiency, accuracy and autonomy** aboard the International Space Station (ISS).

VODAFONE

Development and integration of multiple 5G & Edge use cases covering different industries (consumers, automotive, healthcare, public safety, …) for Vodafone to **support the creation of smart cities** in Europe.

STELLANTIS (ex-GROUPE PSA)

We collaborated with Stellantis to create its new mobility solution, the Citroën AMI, a **light electric vehicle** designed to **meet the environmental challenges.**

GSK

We helped GSK increase innovation, reduce time to market and enhance quality in drug discovery through a **robust analytics and data science partnership.**

SELECTED SUCCESS STORIES

BAKER HUGHES

Baker Hughes partnered with us to design and implement an **Industrial IoT solution that transformed shop floor processes,** to provide operators with a new level of insight and the ability to adjust production at a moment's notice.

AIRBUS

We partnered with Airbus to **industrialize the printed electrics technology in aircrafts.** Heavy cable harnesses were replaced and a high automation and customization potential was incorporated.

HYPERLOOP

We collaborated with HyperloopTT to accelerate the **development of commercialized passenger hyperloop systems** at the HyperloopTT facility in Toulouse, France, the Aerospace Valley of Europe.
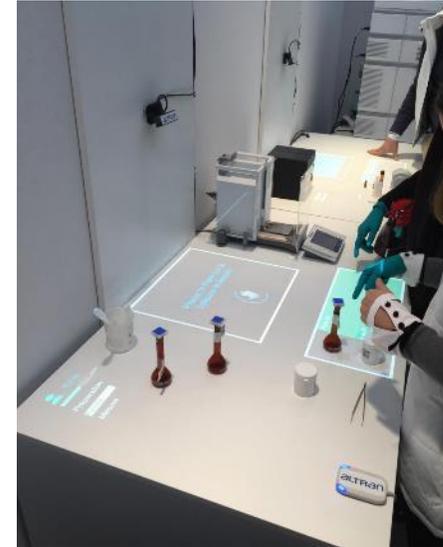
SANOFI

As part of **Sanofi's digital transformation roadmap of manufacturing**, we developed an augmented QC lab to increase the efficiency of operations and the quality of process execution.

ENGIE

We supported ENGIE in its **Digital Operations Program**, analyzing the potential impact of digital transformation on its industrial assets and operations performance and **defining its long-term digitalization roadmap.**

WHAT MAKES US UNIQUE

Global leader in Engineering and R&D, Capgemini Engineering supports leaders of each industry to develop the products and services of tomorrow, from concept through industrialization.

1 Deep industry expertise

2 End-to-end offerings to pioneer Intelligent Industry

3 Strategic transformation partner of the innovation leaders

4 Unmatched portfolio in Digital & Software engineering

5 1st Engineering and R&D global end-to-end delivery model

6 Strong ecosystem of partners and internal R&I

RECENT ANALYSTS RECOGNITION OF OUR ER&D SERVICES FOOTPRINT

Recognized as **global leader for ER&D services and IoT Services** in the Zinnov Zones 2020 assessment.

Recognized as undisputed #1 across: **Aerospace, Automotive, Industrial, Medical Devices, Semiconductor, Telecommunications, AI Engineering, ADAS, Telemedicine, and SDN-NFV.**

One of the **top 5 Leaders** across: **Enterprise Software, Telematics, Software Platform Engineering, Cybersecurity, Digital Thread, and AI/ML Engineering for BFSI.**

Positioned in the **leadership zone for Industry 4.0 services** in the Everest Group PEAK Matrix Assessment 2020.

Ranked as **#1** in Everest Group **Engineering Services Top 50™** 2021.

APPENDICES

INDUSTRY ID CARDS

WHAT WE OFFER
IN AUTOMOTIVE

DRIVING ASSISTANCE
Safer mobility with efficient ADAS systems Smart UX design & development

MOBILITY EXPERIENCE
Smart user experience design & development

SUSTAINABLE MOBILITY
Sustainable powertrain and Energy services facing environment constraints

EFFICIENT ENGINEERING
Engineering complete process & optimisation, and product engineering development

EFFICIENT OPERATIONS
Efficient manufacturing & supply chain
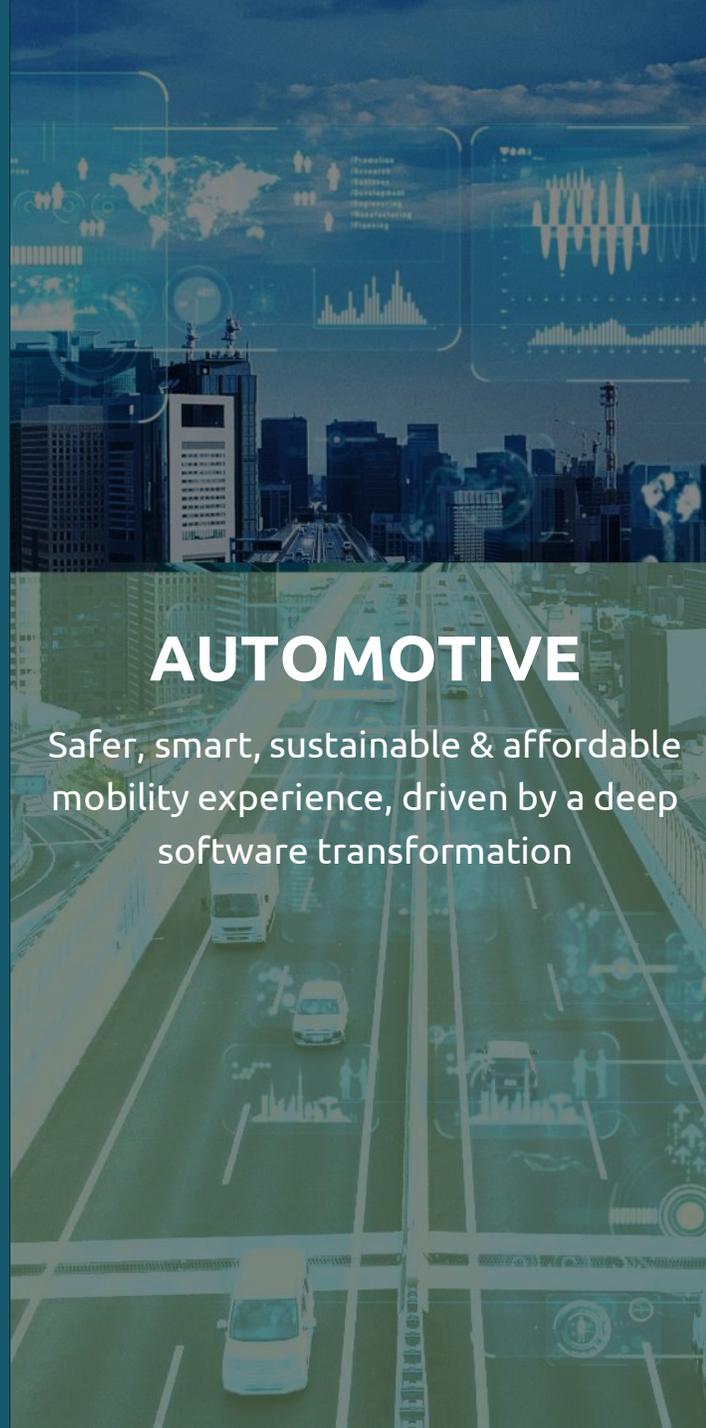
AUTOMOTIVE

Safer, smart, sustainable & affordable mobility experience, driven by a deep software transformation

WHAT WE BRING

Expertise on complex systems from software and connected services with simulation Frameworks & Platforms: Automation and reuse of data for design and validation (MiL, SiL, HiL, ViL)

Technological expertise and deep understanding of product engineering, from powertrain or vehicle body systems to design and class A surfacing.

Efficient transformational approach from engineering to operations and sustainable manufacturing processes, including **Product Life cycle Management from product to software.**

STELLANTIS   MAN   VOLKSWAGEN

VOLVO   BMW   BOSCH

WHAT WE OFFER
IN AERONAUTICS

OPTIMISED DESIGN & DEVELOPMENT
Focused on cost reduction & optimisation of Engineering WoW

NEXT GENERATION AVIATION
Design and development of next generation of Aircraft, Future mobility and new entrants

INTELLIGENT OPERATIONS
Address the market challenge of agility & efficiency in manufacturing operations

INTELLIGENT SUPPORT & SERVICES
Co-development of digital services to generate new revenue streams

PERFORMANCE EFFICIENCY ENABLERS
Support OEMs in transformation initiatives to shape the future WoW

DIGITAL CONTINUITY & DATA DRIVEN ENGINEERING, MANUFACTURING & SUPPORT
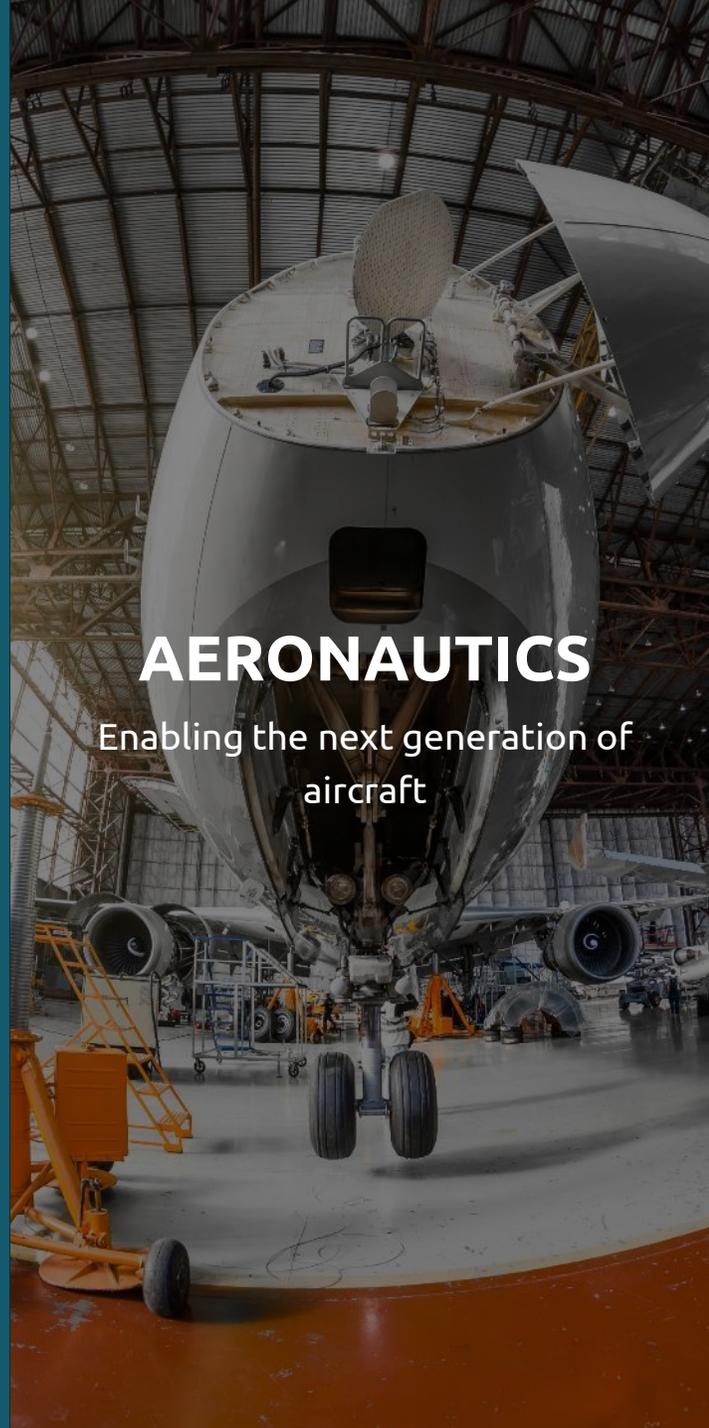
AERONAUTICS

Enabling the next generation of aircraft

WHAT WE BRING

Experts in the whole product life cycle
Broad industry expertise and specific skills in modelling and simulation, for the design of production systems and optimization of product lifecycle

Digital Transformation
We actively invest in accelerators such as AR/VR frameworks, IoT Solutions or DevSecOps platform, tailored for aerospace

Follow the sun
While ensuring cost optimisation we are capable to deliver locally and in best cost countries thanks to our worldwide engineering centers

SAFRAN   AIRBUS   RR

WHAT WE OFFER
IN SPACE, DEFENSE & NAVAL

FUTURE-READY COMPLEX SYSTEMS

Systems become more and more complex and must integrate future technologies

EFFICIENT & SECURE ENGINEERING TRANSFORMATION

Implement new engineering methods & technologies while respecting required security levels

ADVANCED MANUFACTURING

Digitalization of the manufacturing process while respecting the domain security constraints

INTELLIGENT SUPPORT & SERVICES

Integrate product MCO to the service

SPACE, DEFENSE & NAVAL

Reconquering outer space
and facing security challenges

WHAT WE BRING

Proven expertise in supporting Complex System Engineering including **System of Systems** and **Model Based System Engineering (MBSE)**

Digital Transformation
We actively invest in AR/VR frameworks, IoT Solutions or DevSecOps platform, tailored for space, defense and naval use cases

Masters of the **High integrity Agile approach** developed over decades of experience delivering highly critical systems in the most demanding industries

ThalesAlenia Space

AIRBUS DEFENCE & SPACE

DASSAULT AVIATION

WHAT WE OFFER
IN RAIL, INFRASTRUCTURE & TRANSPORTATION

INTELLIGENT TRAIN
Design, test, and support of trains, embracing the digital lifecycle

SIGNALLING, COMMAND & CONTROL SYSTEMS
Development and integration of critical, autonomous and train control systems

INTELLIGENT MANUFACTURING & OPERATIONS OF SYSTEMS
Advanced tools & process to the manufacturer; and advanced systems and support to the operator

SMART B2B & B2C RAIL SERVICES
Intelligent and transformative services to the passenger, operator, and manufacturer

RAIL, INFRASTRUCTURE & TRANSPORTATION

Bringing innovation to mobility technologies & passenger services

WHAT WE BRING

Innovative solutions that use **2D & 3D CAD modelers** and predictive tools such as FEM solvers

Cutting edge expertise in mobility solutions **including autonomous freight transport systems**

Independent safety and conformity assessment services for rail applications and products worldwide (ISA, AsBo, NoBo, DeBo)

SNCF   ALSTOM

Wabtec CORPORATION   NetworkRail

WHAT WE OFFER
IN ENERGY

CAPEX EXCELLENCE
Design and delivery of physical and digital assets enabling lifecycle data capture and sustainable goals achievements

OPERATIONS PERFORMANCE
Shift Operation & Maintenance performance in a safer & more sustainable environment

SMART SERVICES
Create & deliver new platforms & services generating lifecycle values for Energy players

ENERGY
Global engineering & digitalization player empowering Energy transition

WHAT WE BRING

Global **multi-disciplinary engineering expertise** combined with deep domain knowledge to support the **Energy transition** leveraging **dedicated expertise centers** in wind and solar renewable energies and nuclear

Digital accelerators and technology frameworks to optimize the energy value chain performance (Digital Twins, IoT, Smart grids, 5G …) built from **cross industry fertilization**

Leading edge in-house **Research & Innovation program** developing disruptive technologies and solutions (H2, Small Modular Nuclear Reactors, sustainability…) **for the Future of Energy**

eDF   enGie   SIEMENS

WHAT WE OFFER
IN LIFE SCIENCES

SMART PRODUCTS & SYSTEMS DEVELOPMENT

End-to-end development and Life Cycle Management of medical devices and digital health systems incl. platforms, AI etc. Advanced data-driven solutions, agile processes & automation improving R&D efficiencies and accelerating time-to-market

INTELLIGENT OPERATIONS

Tailored solutions leveraging advanced digital and automation technologies to achieve quantified performance improvements for Biopharma and Medtech Manufacturing and Supply chains

AGILE COMPLIANCE

Best-in-class consulting and managed services to improve performance, quality and regulatory compliance leveraging digitalization

LIFE SCIENCES
Empowering the next generation of healthcare

WHAT WE BRING

Global footprint with **+3000 specialists with deep Life Sciences domain knowledge** combined with advanced & cross industry technologies expertise , delivering scalable & tailored data-driven solutions

Innovation catalyst at the heart of the ecosystem with leading edge in-house **R&I program with +40 projects** developing solutions for the Future of Healthcare

Worldwide Life Sciences expertise center for **Compliance & Business Performance** with extensive process and regulatory knowledge (GxP, CFR, ICH, ISO...)

gsk   GE   SANOFI

Boston Scientific   TERUMO

WHAT WE OFFER
IN INDUSTRIAL & CONSUMER

PRODUCT INNOVATION & SYSTEM ENGINEERING

End-to-end services for designing, developing and engineering products and enabling their supply chain

INTELLIGENT OPERATIONS

Smart manufacturing techniques and technologies to improve factory efficiency, productivity and safety

CONNECTIVITY & OT SECURITY

Design, development, deployment, and transformation of new and legacy industrial connectivity, networks and OT security

INDUSTRIAL & CONSUMER

Helping clients develop products, transform manufacturing and operations and improve operational agility

WHAT WE BRING

Ranked #1 (Zinnov) in Industrial ER&D services in 2020

Dedicated centers focused on advanced technology solutions for manufacturing, AI/ML, digital twins, data & analytics, cloud & edge, networking, cybersecurity, and more

125+ licensable software frameworks to **accelerate development of industrial products & networks**

Whirlpool
CORPORATION

VANDERLANDE

ABB

RioTinto

WHAT WE OFFER
IN COMMUNICATIONS

VIRTUAL NETWORK FOUNDATION

Transformation to Hyper-Scaler -
Virtualized Networks & Cloud
Network & Compute Product & Service
Development
Network & Product Support Services

5G MARKET ADOPTION

Software Frameworks Solutions
Communications System Integration
Intelligent 5G & Edge

DIGITAL TRANSFORMATION & AUTOMATION

Advanced Connectivity for Industries –
Private networks
Optimized Engineering & Automation

COMMUNICATIONS

Generating new revenue streams
in a connected world

WHAT WE BRING

5G field experience with +120 5G projects since 2019, supporting Telco & industrial players with transformative use cases

125+ licensable software frameworks which enable our clients to reduce development time up to 60%

A unique set of 5G Labs & Advanced Networks Center of Excellence to support our clients around the globe

vodafone   at&t   NOKIA

CISCO   verizon√

WHAT WE OFFER
IN SEMICONDUCTOR & ELECTRONICS

SILICON ENGINEERING
Design, implementation and validation of ICs, IP and the software, boards and system hardware needed to prepare chips for product development

EMBEDDED SYSTEM & PRODUCT ENGINEERING
Complete engineering services for embedded software, hardware and electronic products to accelerate deployment in end markets

PRODUCT LIFECYCLE SERVICES
Value engineering (chip, platform, product) and support services to maximize the lifetime revenues and margins of a product, product line, or service

SEMICONDUCTOR & ELECTRONICS

Helping clients balance speed, agility, innovation and ROI

WHAT WE BRING

The world's largest **VLSI ER&D services workforce** with experience and expertise in advanced SoC geometries down to 5nm

Ranked #1 (Zinnov) in Semiconductor ER&D services for last 5 consecutive years

Unmatched vertical breadth brings industry knowledge, use case expertise, customer intimacy, and ecosystem relationships to chip design projects, informing solution design and expediting time to market

QUALCOMM®   ThermoFisher SCIENTIFIC   RENESAS

WHAT WE OFFER
IN SOFTWARE & INTERNET

STRATEGY & DESIGN

Help companies become cloud native by migrating to microservices to enable Platform & API driven development

SOFTWARE INNOVATION AT SCALE

Agile cloud native development teams optimize cloud stacks, deal with petabyte scale big data and operationalize machine learning via MLOps

PRODUCT TRANSFORMATION

Extend and renew software product lifecycles
Develop connected or immersive solutions which will work in consumer, business and regulated environments

SOFTWARE & INTERNET

Global partner empowering the next generation of software & internet

WHAT WE BRING

Fast & Agile start-up culture
Born in the silicon valley, our software is based on start-up mindset, spirit and speed

Technology leadership & demonstrated mastery of cloud, SaaS, IoT & AI technologies and applications

Groundbreaking engagement models:
Agile teams that can scale up and scale down; no long-term commitments

IBM   Microsoft   amaDEUS

About Capgemini Engineering

Capgemini Engineering combines, under one brand, a unique set of strengths from across the Capgemini Group: the world leading engineering and R&D services of Altran – acquired by Capgemini in 2020 - and Capgemini's digital manufacturing expertise. With broad industry knowledge and cutting-edge technologies in digital and software, Capgemini Engineering supports the convergence of the physical and digital worlds. Combined with the capabilities of the rest of the Group, it helps clients to accelerate their journey towards Intelligent Industry. Capgemini Engineering has more than 52,000 engineer and scientist team members in over 30 countries across sectors including aeronautics, automotive, railways, communications, energy, life sciences, semiconductors, software & internet, space & defence, and consumer products.

Capgemini Engineering is an integral part of the Capgemini Group, a global leader in partnering with companies to transform and manage their business by harnessing the power of technology. The Group is guided every day by its purpose of unleashing human energy through technology for an inclusive and sustainable future. It is a responsible and diverse organization of 270,000 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 | www.capgemini.com/capgemini-engineering