

Specialized Computing and Integrated Systems Powering Next-Generation Edge AI Defense Applications



End-to-End Services and Capabilities

Captec's expertise and end-to-end business, design, operational and support services provide complete computing, electronic, electro-mechanical and rack solutions to the defense industry.

We engineer reliability, comprehensively support, maximize longevity, guarantee compliance and overcome the limitations of commercial technologies for challenging and critical operational environments.

Business

- ▶ Established since 1985
- ▶ Proven track record
- ▶ Financially robust
- ▶ Tried, tested and trusted partner
- ▶ Scalability
- ▶ International reach

Design-To-Order

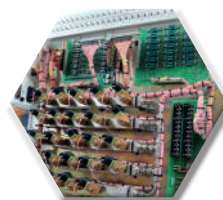
- ▶ UK design of custom;
 - ▶ Ruggedized high availability computers & servers
 - ▶ 19" Racks & portable cabinets
 - ▶ Electro-mechanical enclosures & PDU's
 - ▶ Electronics & PCB assemblies
 - ▶ Embedded micro-controller software
 - ▶ ISO containers
- ▶ V&V, compliance & certification

Electro-Mechanical Integration

- ▶ Build-to-print, box builds, patch panels & ATE's
- ▶ Prototyping
- ▶ Custom cable assembly
- ▶ BOM management

Fulfillment & Logistics to Scale

- ▶ International manufacturing facilities
- ▶ Mature international supply chain
- ▶ Turnkey fulfillment
- ▶ Scale from one-off prototypes to high volume production





Captec systems are proudly engineered and manufactured in the UK and Canada.

Program & Project Management

- ▶ Detailed programme and project planning
- ▶ Dedicated project managers and PMO
- ▶ Risk management
- ▶ Project control and reporting

Fabrication & Finishing

- ▶ Precision CNC machining capability
- ▶ Design for manufacture consulting
- ▶ Fine limit sheet metal, machining and welding
- ▶ Wet and powder coat finishing to defense standards
- ▶ Silkscreen, laser and mechanical engraving

Computer & 19" Rack Integration

- ▶ Integration of specialist computing platforms and 19" racks
- ▶ Full COTS to fully custom platforms
- ▶ Build consistency with complete component traceability
- ▶ Rugged military-grade servers and data storage systems
- ▶ High-Performance Computing, GPU processing and data encryption
- ▶ Certified to military standards

Service & Lifecycle Management

- ▶ Obsolescence management
- ▶ International service and support centers
- ▶ Designed for longevity



Edge AI: Powering the Next Generation of Defense

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- ▶ Defense forces are operating in increasingly complex, data-rich environments where information dominance is decisive. From electronic warfare to unmanned systems, the speed at which data can be processed, analyzed, and acted upon at the edge is now as critical as the platforms themselves.

Edge AI is redefining this environment. By moving intelligence closer to the point of action, forces can exploit real-time insights, accelerate decision-making, and maintain operational superiority even in communications-denied or contested environments.

At the heart of this evolution lies trusted, high-performance computing — engineered to withstand the rigors of defense deployments, certified to the most stringent standards, and designed for longevity in mission-critical applications.

Defense Applications

- ▶ Captec has been supplying specialized computing solutions and fully integrated rack enclosures to defense programmes for many years. These platforms are designed to deliver reliability and performance in mission-critical environments across land, sea, sub-sea, and air.

The engineering team has a proven track record in developing certified, complex electro-mechanical enclosures and integrated racks for defense applications, ensuring compliance with stringent standards while meeting evolving operational requirements.

Why Choose Captec?

- ▶ Extensive engineering capabilities to deliver **COTS and bespoke platforms** that meet exacting requirements and achieve a competitive advantage through innovation at the lowest lifetime cost of ownership.

Experienced in **complex engineering programmes**. Tender to deployment engagement ensures accurate definition of requirements and execution of outputs for successful project delivery.

- ▶ **Comprehensive support and service** with rapid turnaround to minimize downtime. Obsolescence and change control management mitigates risk and ensures continuity of supply.
- ▶ Example of deployed rack solutions in service across the Royal Navy Fleet: **Satcom, Counter Unmanned Aerial Systems (C-UAS), Platform Management Systems (PMS), Tactical Communications and Combat Management.**



Defense Racks

- ▶ Captec has developed a range of racks to meet a variety of custom form factors. Our in-house design and metalwork engineering capabilities allow us to support a wide range of needs.

Captec designs and supplies ruggedized, EMC-compliant racks that combine the use of COTS IT equipment with fully-custom trays to ensure proven reliability in the field. The racks incorporate custom engineered cable management systems and cable supply with front access for ease of serviceability. In addition, custom power distribution units are available to support both single- and three-phase equipment requirements, complete with MIL-STD interconnects.

Key Features

- ▶ **Certified:** Application specification certification DEF-STAN-0035 & Map 01-470 for shock & vibration
- ▶ **EMC:** Designed for use in TEMPEST applications. High levels of shielding effectiveness, waveguides and equipment separation
- ▶ **Thermal Management:** Specialized air management design to optimise forced air equipment cooling
- ▶ **Ingress Protection:** Water & dust protection for demanding below decks environments
- ▶ **Hazard Materials:** Compliant to material hazard list
- ▶ **Security:** Supporting high assurance, NCSC accredited encryption, as well as CPNI CLASS 2 physical security requirements
- ▶ **CO² Extinguishing:** Integration of MOD approved CO² injection system for equipment protection against fire



Reference Rack Portfolio

This reference portfolio highlights proven rack platforms developed to ensure performance, reliability, and long-term support in critical environments.

	Type 1	Type 2	Type 3	Type 4	Type 5
Environment	Maritime	Maritime	Maritime	Maritime	Laboratory
Sector	Defense Naval	Defense Naval	Defense Naval	Defense Naval	Generic Military
Product Type	19" Rack	19" Rack	19" Rack	19" Rack	19" Rack
Height	36U	32U	28U	18U	36U
Depth	600-1000mm				
Weight	240-300 Kgs				
Shock	Def Stan 08-123	MAP 01-470	MAP 01-470	Def Stan 08-123	N/A
	Def Stan 00-35			Def Stan 00-35	
Vibration	Def Stan 08-123	Def Stan 08-123	Def Stan 08-123	Def Stan 08-123	N/A
	Def Stan 00-35	Def Stan 00-35	Def Stan 00-35	Def Stan 00-35	
EMC	Def Stan 59-411	Def Stan 59-411	Def Stan 59-411	Def Stan 59-411	EN 55032
					EN 55035
Temp. (Operational)	10° to 40°C 30% to 85% Humidity				
Temp. (Storage)	-20°C to +70°C 5% to 95% Non-Condensing Humidity				
TEMPEST	Yes	Yes	N/A	N/A	N/A
Noise	60-73 dBA				
IP	IP54 / IP54				
Captec designed PDU	Yes	Yes	Yes	Yes	Yes
Electrical Safety	EN 62368-1 / EN 61010-1				
115V 50/60Hz	Yes	Yes	Yes	Yes	Yes
Enhanced Shielding Effectiveness	Yes	Yes	N/A	Yes	Yes
Cable Separation for EMC	Yes	Yes	Yes	Yes	Yes
Elevated Conducted Emissions	Yes	Yes	Yes	Yes	Yes
Thermal Management	Yes	Yes	Yes	Yes	Yes
Cable Arms and Slide Rails	Yes	Yes	Yes	Yes	Yes
Bespoke Equipment Trays	Yes	Yes	Yes	Yes	Yes
Bespoke Control Interfaces	Yes	Yes	Yes	Yes	N/A
Bespoke Power Distribution	Yes	Yes	Yes	Yes	Yes
Co2/Fire protection	Yes	Yes	Yes	Yes	N/A
Fast Transient Protection	Yes	Yes	Yes	Yes	Yes
Power Smoothing and Conditioning	Yes	Yes	N/A	Yes	Yes
Bespoke Patch & Connector Panels	Yes	Yes	Yes	Yes	Yes
Compliance & Certification Required	Yes	Yes	Yes	Yes	Yes
Elevated IP Rating	Yes	Yes	N/A	Yes	Yes
Elevated Shock	Yes	Yes	Yes	Yes	N/A
Elevated Vibration	Yes	Yes	Yes	Yes	N/A

High-Performance Ruggedized Computers

- ▶ High-end specialized computers customizable to meet the unique requirements of mission-critical defense applications.

High-performance, long-life ruggedized platforms engineered explicitly for shipboard, ground vehicle, airborne or command center applications in challenging defense environments.

Key Features

- ▶ **Certified:** Application specific certification MIL-STD 810G, MIL-STD 461F, DEF-STAN-0035, DEF-STAN-59411
- ▶ **Thermal & Power:** Optimized power and thermal design to maximize performance in SWaP intensive applications
- ▶ **Operating Temperature:** Wide operating temperature -20°C to +55°C including cold start
- ▶ **Ingress Protection:** Water and dust protection for demanding environments
- ▶ **Shock & Vibration:** Engineered protection appropriate to the deployment requirements



Reference Server Portfolio

This reference portfolio showcases Captec's proven ruggedized computers designed to perform with reliability in the most demanding and mission-critical environments.

	1U SES	2U SES	SRS-01 2U	SRS-02-2U	SRS-03 1U	SRS-04 2U
Chassis	1U 19"	2U 19"	2U 19"	2U 19"	1U 19"	2U 19"
Depth	522mm	510mm	500mm	650mm	650mm	480mm
CPU	14th Gen Core i5 / i7	15th Gen Core i5 / i7 / i9	5th Gen Intel Xeon Processor	Dual 3rd Gen Xeon Processor	Dual 5th Gen Xeon Processor	3rd Gen Xeon Processor
RAM	Up to 128GB	Up to 128GB	Up to 2TB	Up to 4TB	Up to 4TB	Up to 4TB
Storage	2 x M.2 NVME 256GB-8TB	4 x M.2 NVME 256GB-8TB	2 x 2.5" / 2 x NMVe M.2 256GB-8TB	16 x 2.5" 256GB-8TB	4 x 2.5" 256GB-8TB	Internal NMVe M.2 or PXE Boot
Encrypted Drives DARC-SSD 600	Yes	Yes				
Removable Drives	Yes	Yes	Yes	Yes	Yes	No
PSU	110-264V AC 18-36V DC	110-264V AC 18-36V DC	110-264V AC 18-36V DC	110-264V AC 18-36V DC	110-264V AC 18-36V DC	18-36V DC
Network	10Gb / 1Gb / Fibre 100Gb Options	10Gb / 1Gb / Fibre 100Gb Options	4 x 100GB Fibre (MIL-STD 38999)	2 x 10GB Copper (MIL-STD 38999)	2 x 10GB Copper (MIL-STD 38999)	2 x 100GB Fibre (MIL-STD 38999)
I/O	USB, COM, HDMI, DP, VGA	USB, COM, HDMI, DP, VGA	VGA, 2 x USB, IPMI	1 x VGA, 1 x IPMI & 2 x USB 2.0	1 x VGA, 1 x IPMI & 2 x USB 2.0	2 x VGA, 1 x IPMI & 2 x USB 2.0
MIL-STD I/O Connections			Yes	Yes	Yes	Yes
Expansion	PCIe x 16	PCIe x 16	2 x PCIE 5.0 x16	2 x PCIE 4.0 x16	2 x PCIE 5.0 x8	2 x PCIe 4.0 x16 (Used by 2 x NVIDIA GPU)
Op Temp	0° to 40°C	0° to 40°C	-20° to 55°C	-20° to 55°C	-20° to 55°C	0° to 50°C
Storage Temp	-10°C to +70°C	-10°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-10°C to +70°C
Defense Standards			Design to: MIL-STD-461, MIL-STD-810H, DO-160G	Designed to Meet: MIL-STD-461, MIL-STD-810H, DO-160G, Vibration Tested to JSS55555, Shock 50g, 11ms, 22g, 11ms	Designed to Meet: MIL-STD-461, MIL-STD-810H	Tested to: D160G, MIL-STD 810, MIL-STD-461G
GPU Processing Expansion				Yes	Yes	Yes
Encrypted Data Drives	Yes	Yes				
Air cooled	Yes	Yes	Yes	Yes	Yes	Yes
Ruggedized Design			Yes	Yes	Yes	Yes
Power Supply options	Yes	Yes	Yes	Yes	Yes	Yes
Defense standards design	Optional	Optional	Yes	Yes	Yes	Yes
Tempest Environments	Optional	Optional	Yes	Yes	Yes	Yes
Aluminium Chassis	Optional	Optional	Yes	Yes	Yes	Yes
EMI Filtering	Optional	Optional	Yes	Yes	Yes	Yes
Shock and Vibration Tested	Optional	Optional	Yes	Yes	Yes	Yes

Rugged Portable Computers & Racks

- ▶ Captec's rugged portable computers and racks enable IT to be quickly deployed in the field despite the challenges this presents.

Captec delivers an end-to-end offering, from portable rack architecting, design, compliance testing, certification, integration and test.

Our rugged portable racks integrated with customized patch panels and cabling. Custom equipment rail mounts ensure equipment reliability in the field for specialized or commercial

Key Features

- ▶ **Certified:** Application specific certification MIL-STD 810, MIL-STD 461, MIL-STD 1275, Map 01-470
- ▶ **Connectivity:** Mate and lock connectivity to ensure secure field reliability
- ▶ **Ingress Protection:** Water and dust protection for demanding environments up to IP67
- ▶ **EMC:** Effective shield designs for EMC compliance EN61000
- ▶ **Operating Temperature:** Wide operating temperature -20°C to +55°C
- ▶ **Shock & Vibration:** Engineered protection appropriate to the deployment requirements



Ruggedized Displays

- ▶ Highly rugged military-grade LCD displays offering versatility and customization to meet the needs of diverse defense applications.

Captec designs and delivers highly customizable multi-format LCD displays. From fully custom designs to pre-configured multi-screen configurations, drawer and panel mounts, we ensure that our displays seamlessly integrate into your systems across a diverse range of land, surface and sub-surface environments.

Key Features

- ▶ **Certified:** Application specific certification, including DEF-STAN-0035 and DEF-STAN-461
- ▶ **Thermal & Power:** Optimized direct or PoE power with thermal design to maximize performance and longevity
- ▶ **Operating Temperature:** Engineered and built to withstand wide operating and storage temperature to match operating requirements
- ▶ **EMC:** Designed for use in TEMPEST applications, featuring high levels of shielding, cable management, waveguided and screening to maintain data security
- ▶ **Ingress Protection:** Water and dust protection as appropriate to meet specifications, compliance or operating requirements
- ▶ **Brightness Controls:** Integrated brightness controls as appropriate for day/night time applications



Consoles

- ▶ Rugged, mission-ready consoles engineered for versatility and reliability to meet the needs of a range of defense applications. Built to endure the harshest environments, Captec's consoles deliver reliability and performance where failure is not an option.



Captec designs and delivers highly configurable console solutions, from bridge and command consoles to operator terminals, control stations, and monitoring suites. With custom options supporting multiple layouts including multi-screen integration, and flexible mounting formats, Captec's consoles are engineered to seamlessly integrate into defense systems across land, maritime, aerospace, and sub-surface domains.

Key Features

- ▶ **Certified:** Designed and qualified to application-specific defense standards, including DEF STAN and MIL-STD compliance
- ▶ **Ergonomics & Layout:** Configurable layouts with optimized positioning of controls, displays, and interfaces for operator efficiency
- ▶ **Thermal & Power:** Power distribution engineered for reliability with integrated thermal management to ensure performance and longevity
- ▶ **Operating Environment:** Built to withstand vibration, shock, and wide operating temperature ranges across land, maritime, and aerospace domains
- ▶ **EMC & Security:** Engineered for secure operation in sensitive environments, incorporating shielding, filtering, and compliance with TEMPEST requirements
- ▶ **Ingress Protection:** Options for IP-rated housings to safeguard against dust, moisture, and environmental exposure



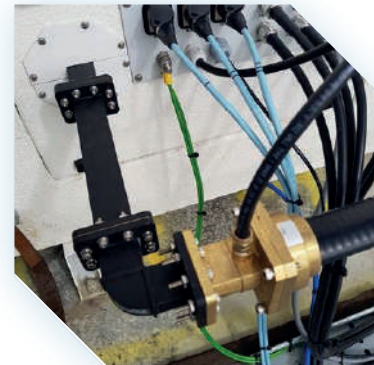
Field Deployable Shelters

- ▶ From design concept to project delivery, Captec offers a fully integrated one-stop service and fulfillment of customized ISO containers for field-deployable IT shelters.

Ready integrated with uninterruptable power, environmental conditioning and 19" and embedded racks and computing.

Key Features

- ▶ **UPS Storage Solutions:** Based upon scalable multi-battery packs to required KVAS
- ▶ **Electrical Installation:** Electrical installation is compliant to 18th Edition wiring regulations BS7671
- ▶ **Ingress Protection:** Water & Dust ingress protection for demanding environments up to IP65
- ▶ **Thermal Management:** Air conditioning & heating to support wide operating temp range between -15°C to +55°C
- ▶ **Hazard Materials:** Compliant to material hazards lists



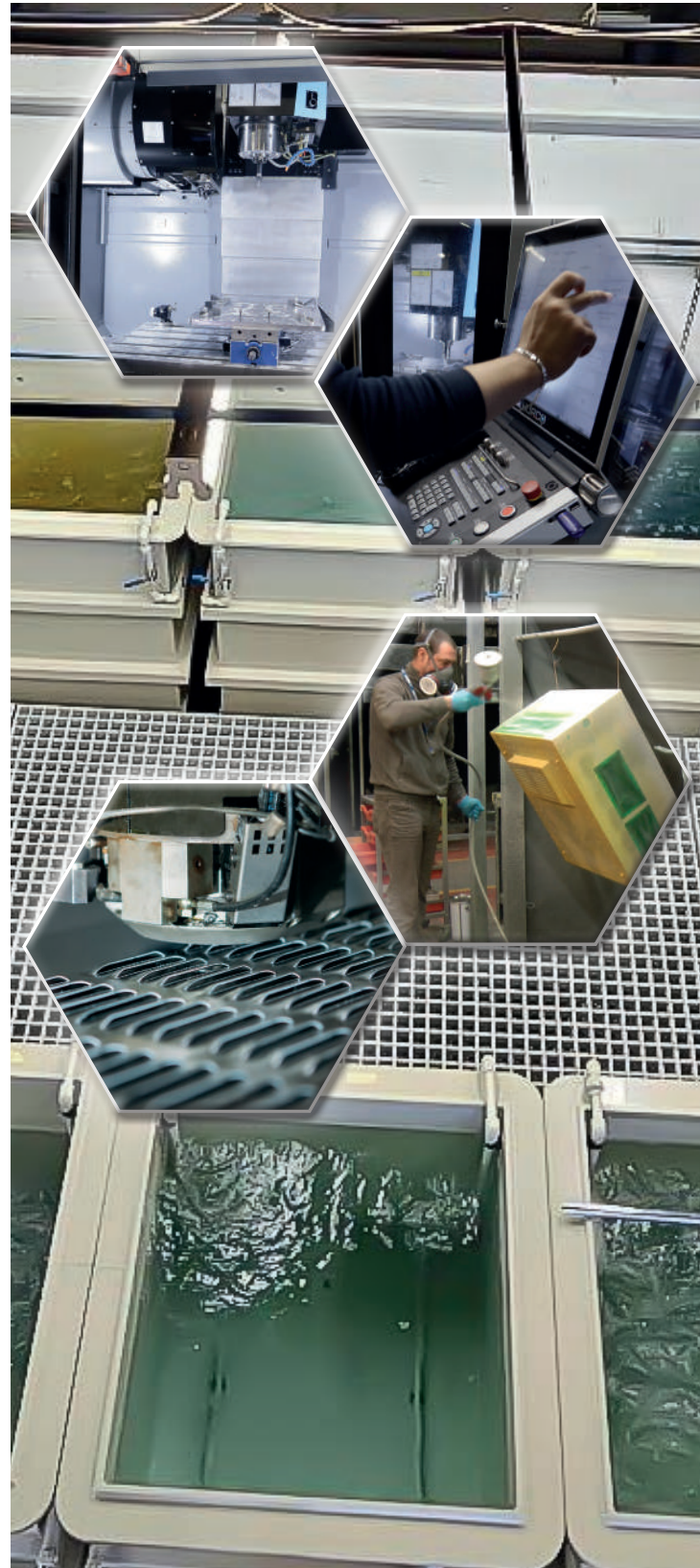
Defense Subsystems

- ▶ While rack and IT infrastructure are critical elements of many defense projects, we also understand custom subsystems form a vital part of more extensive system integrations. Such systems rarely come in a single standard form factor, and their function is as diverse as the types of projects within the defense sector.

Realizing a fully custom subsystem, both in terms of design for manufacture and a suitable supply chain for the many processes involved. Our specialist Captec Subsystems Engineering division are ideally placed to support your requirements, bringing proven pedigree of manufacturing for the defense sector, this division delivers an end-to-end range of precision capabilities allowing them to support the specific needs of your projects.

Why Choose Captec?

- ▶ We are renowned as a **tried, tested, and trusted** leader in serving defense and aerospace primes.
- ▶ Committed to **value-added design support** by actively engaging in early design phases to assess risks and challenges.
- ▶ Our **cutting-edge facilities** include CNC Machining equipment, advanced finishing application, and curing facilities, for meeting exacting demands in all aspects of metal requirements.
- ▶ We operate under the robust framework of the ISO 9001 quality management system, ensuring adherence to the highest industry standards in machining and integration capabilities.



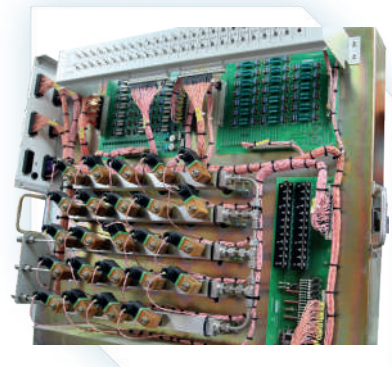
Electro-Mechanical Assembly & Manufacturing

- ▶ Captec's complete build-to-print service, provides a one-stop-shop for electro-mechanical integration from fine limit sheet metal and machining, finishing, screen printing and assembly, saving logistics between multiple subcontractors, reducing time to manufacture, and reducing project risks.

Captec provide our experience and manufacturing know-how through design for manufacture consulting and support services. During your initial development phases our teams assess risks and challenges of bringing a new design into manufacture, reducing development cycles and shortening your time to market.

Key Features

- ▶ State-of-the-art 5-axis CNC machining
- ▶ Custom enclosure engineering
- ▶ Electro-mechanical assembly
- ▶ Welding
- ▶ Wet and powder coat finishing to MIL/DEF standards
- ▶ Silkscreen and pad printing
- ▶ Laser and mechanical engraving



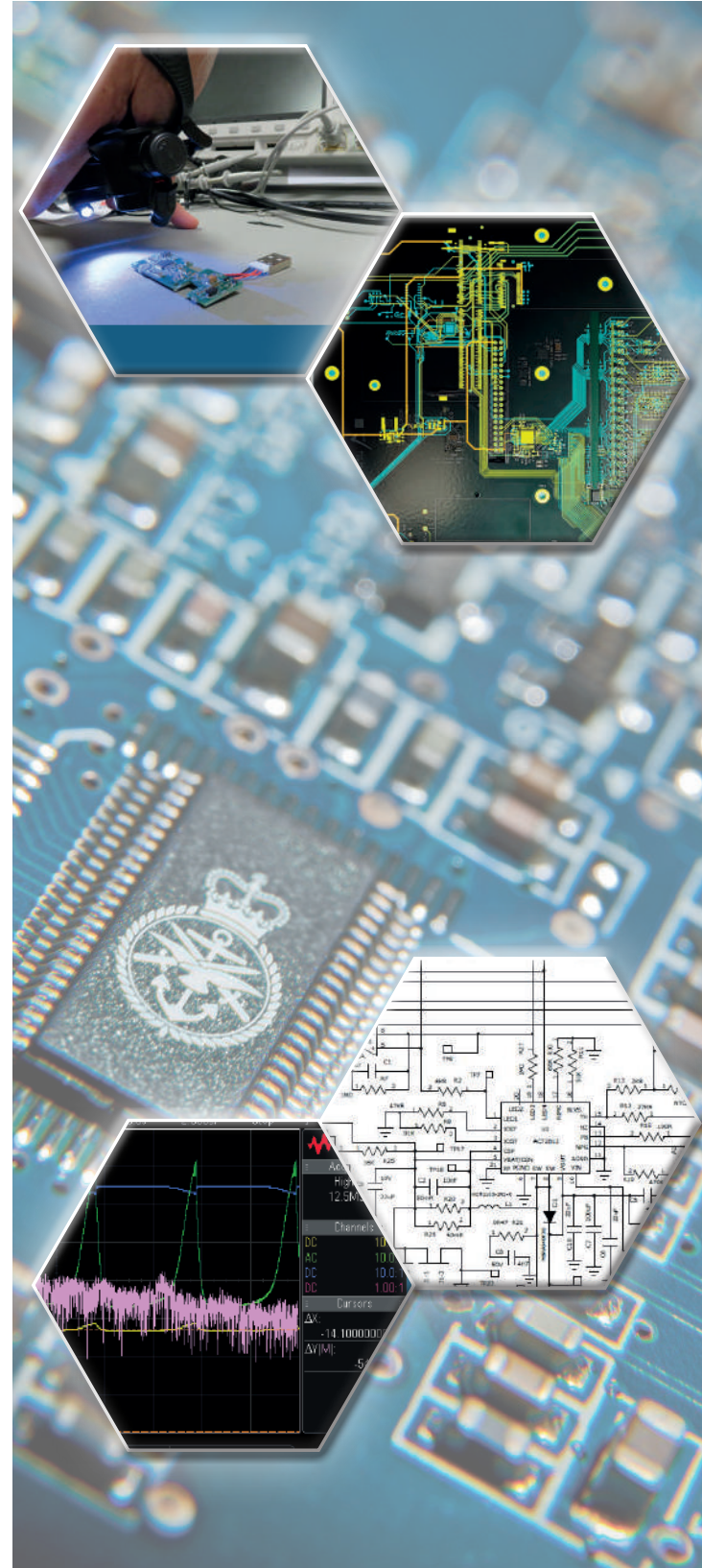
Electronic Subsystems

- ▶ Electronics and embedded software are advancing relentlessly, enhancing intelligence and capabilities within modern demanding defense applications. Captec has a tried and tested design and project managed process reducing development cycles and shortening your time to market.

To provide comprehensive multi-disciplinary engineering, we have expanded our capabilities to include end-to-end electronics design and embedded software development. These additional specialist skills, combined with the group's broader capabilities and experience in the defense sector allows us to be a one-stop trusted partner.

Why Choose Captec?

- ▶ Systems-level architecture design
- ▶ Single source for electronics, software interconnect, assemblies and enclosures
- ▶ Structured and object oriented design methodologies
- ▶ Turnkey electronics product or subsystem development
- ▶ Design for test, manufacture service, compliance and certification
- ▶ Extensive and proven experience in the development of embedded and real time software
- ▶ Reliability and risk reduction



Electronic Design & Manufacturing

- ▶ Captec's complete design, production, integration, and support services provide true end-to-end support for defense programmes. By eliminating the need to coordinate multiple subcontractors, Captec streamlines logistics, accelerates time to manufacture, and reduces both project risks and costs.

Captec brings specialist expertise across the full lifecycle — spanning consulting, requirements definition, feasibility, design, prototyping, certification, compliance, through-life manufacturing, component obsolescence management, and ongoing support.

With deep knowledge of specialized electronics for sensor and signal processing, combined with expertise in low-power wireless communications and IoT technologies, Captec enables the development and deployment of embedded electronics engineered for the most demanding operational environments.

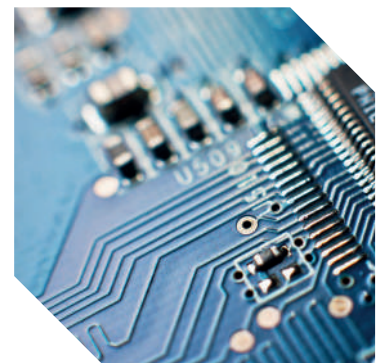


Electronic Hardware Design

- ▶ Sensor measurement, signal conditioning and processing
- ▶ Active dynamic noise cancellation
- ▶ Low power RF radio transceivers & antenna design
- ▶ Power constrained battery management
- ▶ Power supply design
- ▶ PCB design, prototyping and production management
- ▶ Component sourcing and obsolescence management

Embedded Software Development

- ▶ Structured and object oriented embedded software
- ▶ Real-time embedded systems
- ▶ High speed digital data acquisition and processing
- ▶ Multi threaded multi process software
- ▶ Device drivers
- ▶ DSP and image processing
- ▶ Closed loop adaptive systems
- ▶ Sensor to database



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TRIED TESTED & TRUSTED





CAPTEC

Delivering end-to-end, like no one else.
Bring us your challenge & experience the difference.

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