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Force Centric Capability Management

GCloud Service Description Document

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Force Centric Capability Management

1.1 Short Service Description

Force Centric Capability Management (FCCM) and the Defence Capability Hierarchy (DCH) is a proven systems-based philosophy, methodology and taxonomy which maps operational outcomes to solutions. It ensures organisations understand the impact of decisions and actions, allowing them to deliver coherent and integrated capability which better-exploit digital and cloud-based infrastructures.

1.2 Key Service Features

1. Taxonomy: a common capability hierarchy and taxonomy
2. Assist capability planners understand/communicate the complexity of capability.
3. System of Systems: design of forces as integrated capability.
4. Emergent Capabilities: identify emergent capabilities and integrate innovative technologies.
5. Top Down: enables a top-down structure and arbitrates disagreements.
6. Design Optimisation: of forces as systems not individual assets.
7. Outputs: Generates concepts, force designs to deliver defence outputs.

1.3 Key Service Benefits

1. Advice on FCCM, DCH and capability management/delivery.
2. Understand the whole concept to capability force development environment.
3. Development of Force Level Output (FLO), CONOPS, CONEMP
4. Development of Force design artefacts.
5. A systems approach to CONDEV, CAPDEV and WARDEV.
6. We lead on the implementation of the DCH/FCCM approach.
7. We lead Mission Systems Integration and Mission Engineering.
8. Capability management from strategic input to through-life management.
9. We bring innovation to future concept and capability design.
10. We can lead skills transfer for the DCH/FCCM approach.

1.4 Service Definition

PA has a large and mature architecture and systems Thinking capability. Architecture and Systems Thinking are core PA services. We have skills at all levels, across all domains, and all leading technologies and patterns. Our teams work across the full lifecycle, from defining the enterprise architecture and transition roadmap through to hands-on delivery. We have used this expertise to develop the DCH and FCCM and implement it in the SDST.

The Defence Capability Hierarchy (DCH) and Force Centric Capability Management (FCCM) offer a systems-based philosophy, methodology and taxonomy which provide context to P3M. DCH/FCCM helps Defence ensure that it better understands the impact of decisions and actions as it seeks to deliver coherent and integrated capability to users, especially those on the front line to better exploit digital and cloud based infrastructures

Land force development: CONDEV, CAPDEV and WARDEV will be underpinned by DCH/FCCM approach. Traditionally, design has sat at the system level; with forces generating force elements (FE) along 'traditional' lines – with a focus on platforms. Interoperability was achieved through voice, staff work and familiar FE structures. However, advances in technology and the pace of operations means Defence now faces new challenges that demand far greater integration and speed of action. There is a need for a systems approach to force design.

The DCH/FCCM approach generates common capability frameworks (hierarchies) and taxonomies, which helps capability teams design their force concepts. This mapping of capability helps the user understand the system of capabilities required to deliver it aligned to defence objectives. By incrementally maturing design through the system levels, DCH/FCCM offers the opportunity to identify new emergent capabilities, solutions and integrate innovative technologies. This approach therefore enables a top-down, holistic view of capability, enabling arbitration over how system and sub-system boundaries will be drawn across and within domains.

DCH/FCCM begins with outputs that deliver against Defence's higher-level objectives, and then the concepts and design to deliver those outputs through FEs. This generates interoperability and design that can flow down through CAPDEV and WARDEV. In turn, as systems are delivered, they can be verified and validated, not just against the platform/mission system requirements but up to Force level to ensure full interoperability from fielding. This delivers greater interoperability through designing capabilities for integration that flow down, emergent capabilities, and enables capability teams to design the FEs the future operating environment demands.

DCH/FCCM was devised in response to the increasingly complex changes faced by Defence and the need against this to understand a single capability picture that presents a clear and holistic view of capability over time. To enable this, DCH/FCCM is designed to optimise the design of the force, not optimise the design of the individual asset, thereby enabling a systems approach to force design.

The DCH/FCCM approach is controlled by a series of Capability Planning Groups (CPGs) that support key FEs. DCH/FCCM describes a series of levels of capability, with each level comprising a series of artefacts and assigned a sponsor. These levels are shown below.

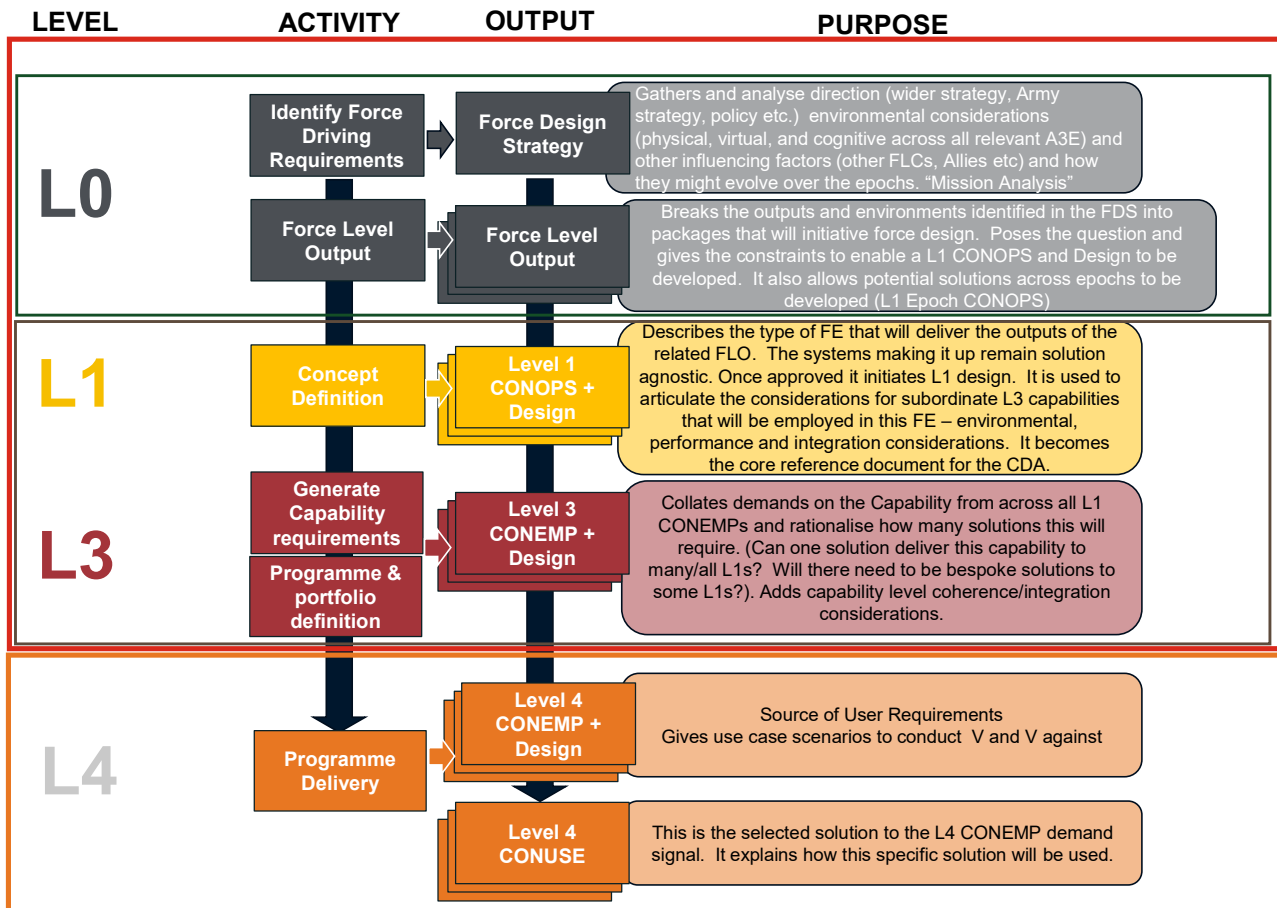


Figure 1 - FCCM Levels of Capability

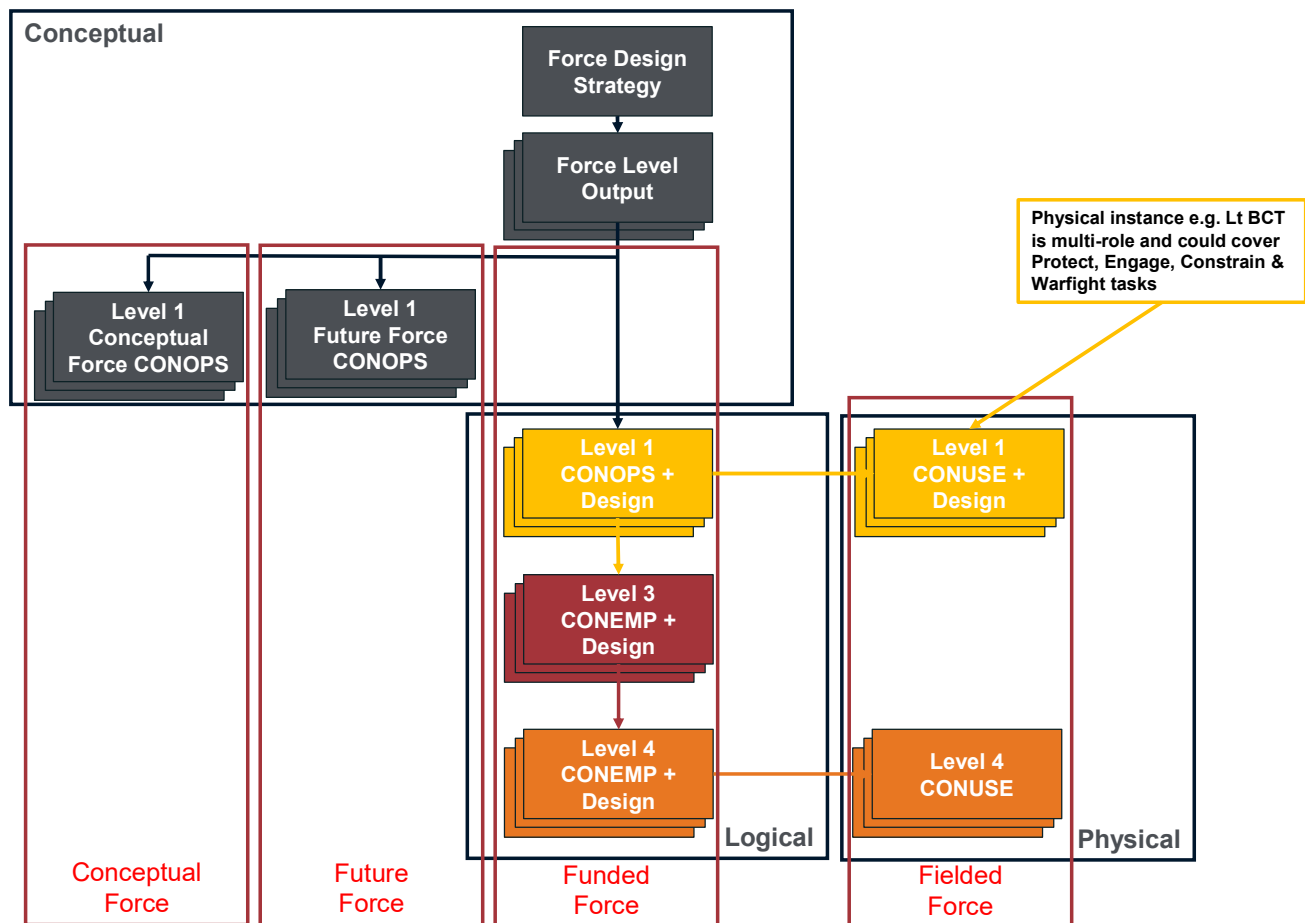


Figure 2 - FCCM cohering ConDev, CapDev and WarDev

Capability Hierarchy Model. For example, in the British Army, a system-of-systems is delivered as combined arms capability with the Land Component organising and operating in different capability groupings for different mission sets. The Capability Hierarchy Model (CHM) helps provides a mechanism that enables stakeholders at all levels up to 3* to easily develop a top-down and bottom-up narrative which contextualises Capability within Defence Objectives at the top and Delivery Programmes and Projects at the bottom. It provides a strong 'golden thread' narrative for the Army Operating Concept, the Force Structures that will implement it and the capabilities that they will be comprised of. By developing a structure by which the 'golden thread' can be clearly evidenced it is possible the demonstrate the impacts of a change to Strategic Objectives at one extreme or a change to a capability sub-system at the other.

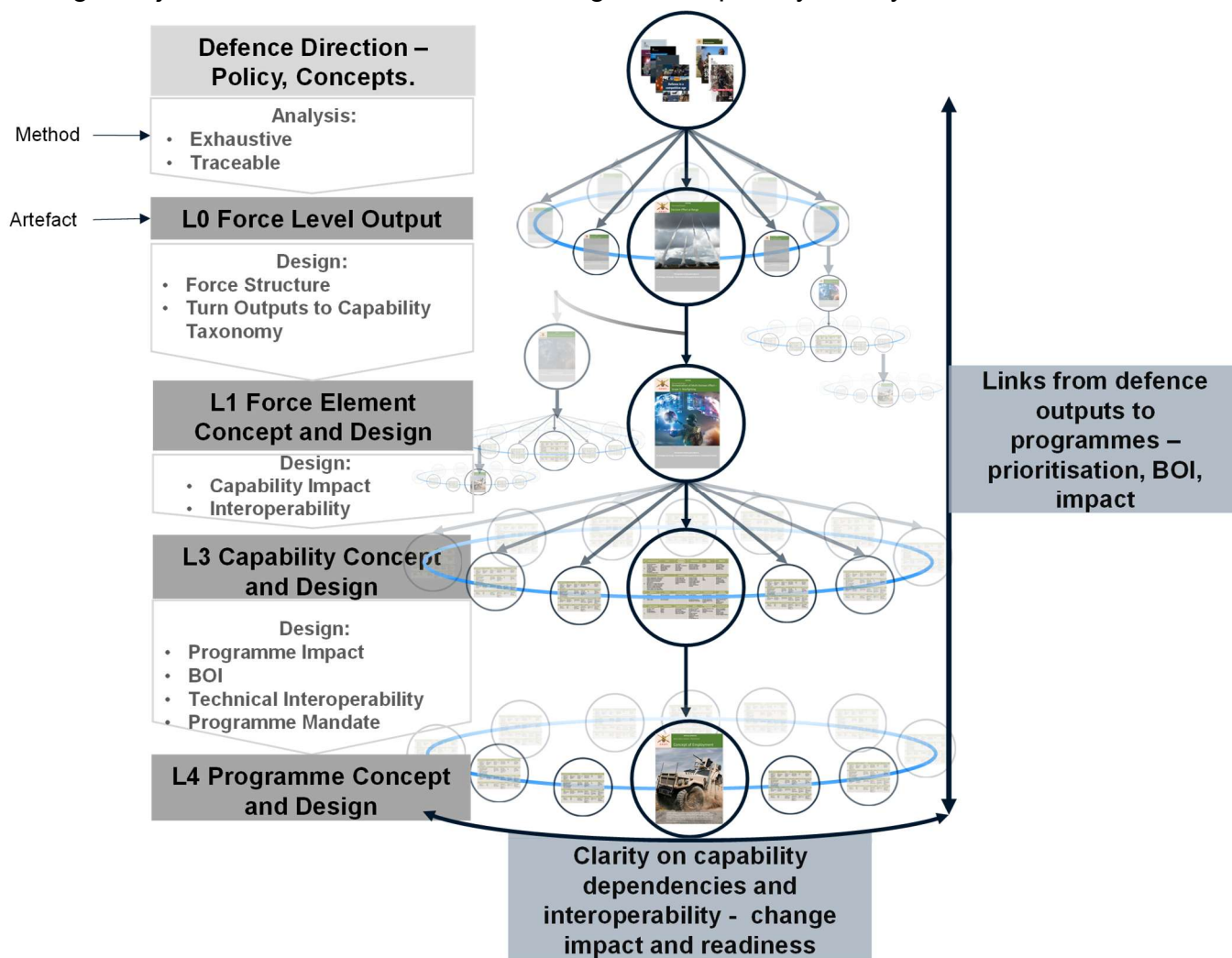


Figure 3 - The Capability Hierarchy Model

Capability Taxonomy. An associated Capability Taxonomy has been developed as a means of providing a consistent way of describing capabilities and their inter-relationships. The taxonomy is aligned to the CHM and derived from existing doctrine. The taxonomy is divided into 23 Level 2 Functional Capability Groups and a further 133 Level 3 Capabilities. If required, the taxonomy can be extended to include capabilities unique to each FLC and for new Capability Concepts.

Strategic Decision Support Tool (SDST). The design process is managed through the SDST – a digital solution which supports analysis and decision making around the underpinning capability and systems data. Our team of experts can use this to drive your outcomes or work with you to develop your skills to operate and exploit it.

1.5 Why PA Consulting Group (PA)?

A trusted partner for cloud, AI, and digital technologies

PA Consulting Group (PA) is a leading technology and innovation consultancy and one of the UK government's most trusted advisors, combining strategy, delivery assurance and deep engineering to turn complex ambition into assured outcomes. We bring end-to-end capability across cloud architecture, data and AI, cyber, and advanced technology R&D, backed by a track record of scaling innovation in the public and private sectors.

Our UK work is anchored by secure, standards-led delivery. PA maintains ISO/IEC 27001 certification across global operations, demonstrating disciplined information security and operational control, and applies UK government good practice (GDS, NCSC CAF) across cloud and digital programmes.

We combine consultancy with real engineering. At our Global Innovation & Technology Centre (Cambridge), 300+ scientists, designers and engineers operate extensive labs and studios to prototype and industrialise solutions, bridging physical and digital from concept to production.

1.5.1 Why PA for cloud, data and AI

- **Hyperscaler alliances without vendor lock-in.** PA is Premier Tier with **Google Cloud** (13+ years; 150+ certifications; specialisations in infrastructure, data analytics, app dev and security) and holds deep **AWS** and **Microsoft** credentials, accelerating secure data foundations and generative AI at scale while keeping advice independent and outcome-led.
- **Responsible AI you can trust.** Our Responsible AI framework, governance toolkits, and risk policy make AI adoption transparent, auditable, and compliant, embedding lifecycle controls, model documentation, and human-in-the-loop safeguards aligned to evolving regulation.
- **Impact beyond pilots.** We help organisations become *intelligent enterprises*, using data and agentic AI to create and protect value, with pragmatic roadmaps from use-case selection to scaled operations.
- **Proof through delivery.** Our client stories span enterprise data platforms, IoT and analytics (e.g., Rentokil Initial), and product innovation at scale (e.g., Unilever) where PA has put data and AI at the heart of continuous, market-leading improvement.

1.5.2 Cloud capability (assess, design, build, assure, run)

PA applies an assured cloud delivery approach to complex government and regulated environments, blending client-side delivery assurance, multi-cloud architecture, and resilient operations:

- **Strategy & readiness.** Maturity assessments, target operating models for hybrid/multi-cloud, and cost/benefit modelling; proportionate GDS compliance and ISO 27001 controls embedded upfront.
- **Design & architecture.** Secure, well-architected patterns across Azure, AWS, and Google Cloud; data platforms, identity and access, and cross-domain solutions for sensitive estates.
- **Build & deploy.** Cloud-native engineering, DevSecOps (CALMR), CI/CD, infrastructure-as-code; automated testing and quality assurance to accelerate safe release.
- **Migration & modernisation.** Legacy transformation, platform reviews, and workload migration tuned to resilience and cost; pragmatic FinOps to keep spend predictable and efficient.
- **Operate & optimise.** Observability, incident management, performance tuning, backup/restore, and change management, maintaining business continuity and reducing total cost.

- **Client-side delivery assurance.** Forward-looking, risk-based assurance that keeps complex programmes on track, covering governance, architecture, testing, migration, service readiness and cutover. See our *IT Delivery Assurance* service.

1.5.3 AI, ML and data (from strategy to scale)

- **Strategy & governance.** AI blueprints, operating models, and policy; enterprise data governance; regulatory readiness; centre-of-excellence setup and change adoption.
- **Engineering & MLOps.** Data platforms on Azure/AWS/GCP, pipelines and feature stores; robust ML lifecycle with monitoring, drift detection and auditability.
- **Generative & agentic AI.** Secure integration of LLMs (including Copilot) into workflows for measurable productivity and quality gains, using guardrails, system cards and ROI framing.
- **Responsible AI.** Lifecycle controls and assurance tooling to manage bias, security and transparency.

1.5.3.1 Quantum and emerging technologies

PA's applied physics and quantum engineering teams help clients unlock near-term value, combining quantum techniques with classical systems for decision support, advanced sensing and secure communications:

- **Decision support & optimisation.** Hybrid quantum/classical algorithms to accelerate complex planning, routing and resource allocation where speed and quality of decisions matter.
- **Quantum sensing & RF.** Novel quantum radio and Rydberg-based sensing to enhance spectrum use, detection sensitivity and resilience in contested environments.
- **Commercialisation insight.** Advisory at the “whole-stack” level, hardware, supply chain, interfaces, and ethics, to move from lab to market within national strategies.

These capabilities are industrialised at our Cambridge centre, turning concepts into robust prototypes and pre-production systems across sectors like defence, energy and transport.

1.5.4 Cyber security and digital trust

Digital trust is central to PA's approach. We design security into architecture, operations and culture, aligning to NCSC CAF and GovAssure, and delivering testing, red-team, SOC design and OT/IoT security:

- **Transformation & architecture.** Secure-by-design patterns, cloud security, identity, and cross-domain data protection (including NCSC-approved Oakdoor data diode products).
- **Assurance & regulation.** CAF/GovAssure alignment and pragmatic remediation plans for government organisations.
- **Testing & resilience.** CREST-aligned penetration testing, red-teaming, incident readiness, and operational resilience.

1.5.5 What PA will bring

Ideation & Strategy

- Cloud strategy and advisory services
- Cloud readiness assessments
- Cost/benefit and ROI modelling
- Security and compliance by design.
- AI/ML and data strategy (blueprints, operating model, governance) with Responsible AI policy and guardrails.
- Quantum opportunity framing and whole-stack commercialisation roadmaps.

Design & Architecture

- Bespoke enterprise and cloud architectures
- Integration with existing IT infrastructures
- Hybrid/multi-cloud design
- Continuity and disaster recovery
- Data platforms and MLOps patterns
- Security, privacy and resilience embedded by design in technical designs
- User-centred-design
- Secure cross-domain solutions and high-side/low-side integration where required.

Development & Deployment

- Cloud-native engineering
- Containerisation, microservices and serverless
- DevSecOps (CALMR) with CI/CD and automated testing
- Generative AI and Copilot enablement with measurable productivity outcomes and run-controls.

Implementation & Migration

- Data migration and legacy modernisation
- Vendor selection and management
- Infrastructure-as-code with progressive, low-risk cutover.

Operations & Management

- Observability, incident management, SIEM/SOC design
- Performance optimisation and cost management (FinOps)
- Backup/restore
- User training and change adoption.

Innovation & Scaling

- Scalable cloud infrastructure to support growth
- AI/ML implementation and scaling
- IoT integration
- Ongoing innovation sprints and R&D, supported by our Cambridge engineering labs for rapid prototyping and pre-production.

1.5.6 PA is fully equipped to manage any challenges or requirements you may present

Across strategy, design, build and run, PA blends independent advice with hands-on engineering, operating to ISO 27001 and UK government standards, and backed by hyperscaler partnership depth. Whether the brief is modernising a sensitive cloud estate, industrialising AI responsibly, or de-risking a quantum-adjacent programme, we bring the multidisciplinary team to get from idea to reality, safely, quickly, and at scale.

1.6 A Genuine commitment to Social Value

At PA, we believe in the power of ingenuity to create a positive human future. Central to this ambition is our commitment to developing high-quality opportunities that enable individuals to acquire leading-edge skills, all within an environment that supports personal wellbeing and growth. We invest in our people through comprehensive training and development, ensuring they are fully prepared to tackle our clients' most complex challenges and advance their own careers.

We recognise that diversity drives innovation. Therefore, our recruitment practices are inclusive, welcoming individuals from all backgrounds. Every member of our team is empowered to reach their full potential through inclusive policies, processes, and a culture that is continuously improved using robust data.

We are passionate about creating genuine opportunities for those facing significant barriers to employment. Since 2023, our Digital Apprenticeship Programme has offered a Digital and Technology Solutions Degree through the University of Roehampton or Northumbria University. Our apprentices typically include first-generation professionals, college leavers, and individuals from ethnic minority backgrounds, many living in deprived areas. Additionally, we offer summer internships for undergraduates entering their final year, hosted at both our central London office and the Global Innovation and Technology Centre in Cambridge.

Economic responsibility is integral to our purpose. PA is accredited as a Living Wage employer, and where relevant, we ensure that our suppliers and subcontractors are paid at least the minimum living wage. We are also a signatory to the Prompt Payment Code, demonstrating our commitment to fair and responsible payments to suppliers.

Our carbon reduction targets have been validated by the Science Based Targets initiative (SBTi). We have a published carbon reduction plan and are committed to achieving carbon net zero by 2040, in alignment with PPN 06/21 criteria for UK public sector contracts exceeding £5 million. In 2024, we achieved a silver EcoVadis rating, reflecting our ongoing progress in sustainability.

We are dedicated to delivering targeted social value and will collaborate with you to determine the most effective approach for you, ensuring our efforts have the greatest possible impact.

1.7 Security Clearance

PA are fully compliant with industry best practices for information security, which includes compliance with the UK MOD Industry Personnel Security Assurance (IPSA) standard, against which we are independently audited every three years. PA also has multiple sites with FSC (previously List X) where our dedicated in-house Security Vetting team are based. This allows PA to achieve security vetting of its employees in a time effective manner ensuring the correct processes are always followed (In accordance with the Security Policy Framework/GS007). As a matter of standard process, PA puts all its eligible employees through the Baseline Personnel Security Standard (BPSS), set out by the Cabinet Office. Those employees working on, or planning to work on, government projects are automatically put forward for SC clearance which are processed via UK-SV (formally the Defence Business Services – National Security Vetting). PA also process DV vetting through the UK-SV and other agencies, these are generally client sponsored.

PA currently have a large pool of cleared individuals (80% of UK Staff). Should a resource be identified where clearance is needed, the PA Security Vetting team will then process the individual through the relevant clearance procedure. The team will also be able to validate all existing clearances held by PA employees when requested.

1.8 Next Steps

This service is intended to help customers develop and deliver successful outcomes regardless of the life cycle stage they are at. PA prides itself on working with clients and helping them to deliver outcomes whilst also providing them the ability to ‘stand on their own’ so that they can move their solutions forward without future involvement. Please contact us on GCloudFramework@paconsulting.com to discuss your needs further.



About PA.

We believe in the power of ingenuity to build a positive human future.

As strategies, technologies, and innovation collide, we create opportunity from complexity.

Our diverse teams of experts combine innovative thinking and breakthrough technologies to progress further, faster. Our clients adapt and transform, and together we achieve enduring results.

We are over 4,000 strategists, innovators, designers, consultants, digital experts, scientists, engineers, and technologists. And we have deep expertise in consumer and manufacturing, defence and security, energy and utilities, financial services, government and public services, health and life sciences, and transport.

Our teams operate globally from offices across the UK, Ireland, US, Nordics, and Netherlands.

PA. Bringing Ingenuity to Life.

Discover more at paconsulting.com and connect with PA on [LinkedIn](#) and [X](#).

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