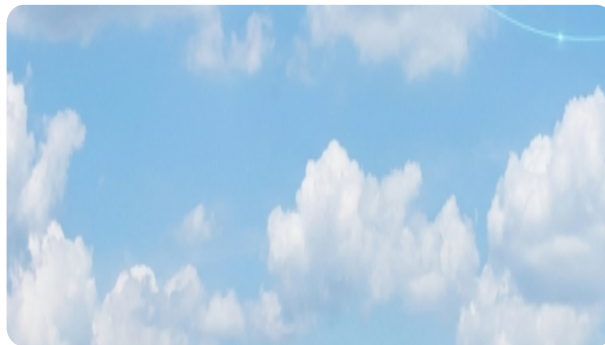
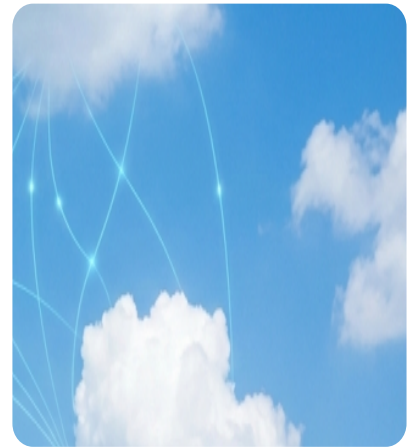




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Defence Enterprise Architecture

GCloud Service Description Document

Bringing Ingenuity to Life.
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Defence Enterprise Architecture

1.1 Short Service Description

PA's Enterprise Architecture Service aligns the architecture runway with Defence strategy and outcomes. We drive coherence across people, process, data and technology from enterprise to tactical edge. We prioritise value-led investment, strengthen governance for agile delivery, optimise cloud adoption and integrate disruptive capabilities safely, securely and at pace.

1.2 Key Service Features

1. Assess Defence architectures to identify blockers, risks and constraints
2. Build capability models aligned to concepts, services and outcomes
3. Define technical capabilities for Digital Backbone and cross-domain integration
4. Develop target architectures enabling secure, modular multi-classification services
5. Produce roadmaps delivering incremental value from enterprise to edge
6. Use sprint-based delivery to steer architecture runway iteratively
7. Manage architecture backlogs to reduce technical debt and risk
8. Design and operate pragmatic governance focussed on delivering defence outputs
9. Apply accelerators, libraries and reference architectures to improve reuse
10. Develop rainbow team operating models and effective working practices

1.3 Key Service Benefits

1. Coherent architectures accelerate decisions and capability for Warfighters
2. Shared target state across sensors, decision-makers and enterprise services
3. Clear standards and patterns reduce assurance burden and risk
4. Faster iteration through controlled architecture runway supporting Agile delivery
5. Investment decisions prioritised by mission value, risk and readiness
6. Early identification of integration and security boundary risks
7. Roadmaps guide legacy-to-cloud modernisation from enterprise to edge
8. Traceability from operating concepts to technical capabilities and services
9. Reduced technical debt improves interoperability, reliability and performance
10. Access to experienced enterprise, solution and cloud Defence architects

1.4 Service Definition

The Enterprise Architecture service identifies business needs driven by external factors such as competition and internal factors such as a company's business objectives and current IT landscape. Our service recognises that traditional approaches are not sufficiently agile enough to respond to changes in business circumstances and market over time. Our agile Enterprise Architecture service will help you determine how to use technology to deliver competitive advantage, whilst ensuring that the right infrastructure foundations are in place to mitigate against risks including cyber security, performance, reliability and availability. Having a clearly defined and agreed Enterprise Architecture will decrease technical complexity and improve efficiency.

PA's Enterprise Architecture approach aligns IT delivery with the business strategy and provides direction and guidance across the organisation or a major delivery programme with multiple Projects or Value Streams. Using the Enterprise Architecture service allows you to define the priority aspects of the architecture to inform your delivery and to proactively manage the architecture risk by prioritising the backlog.

The EA approach is based upon

- A lightweight operating model to provide enterprise agility
- Business Capability Analysis and mapping to IT products to define how IT is used to drive business value.
- Gap analysis identifying opportunities to use IT to improve business capabilities or enable business change.
- Target Architecture and Roadmap to deliver the desired business value in the most efficient way
- An Agile Architectural Assurance Process which provides sufficient governance without impacting flexibility
- An Enterprise Architecture Maturity Assessment process to assess current architecture maturity and identify opportunities for improving Enterprise Architecture capability within the organisation.
- We also support clients in building their internal architecture capability, providing training, knowledge transfer, and mentoring and coaching.

Lightweight Operating Model

PA brings over 80 proven artefacts and multiple industry standard frameworks to accelerate the establishment of a lightweight architecture operating model. This includes processes, structure, and ways of working to optimise the Architecture function. Our architecture methodology provides an overarching framework of principles, patterns, standards and processes to enable architects within projects, programmes and Value Streams to make empowered decisions. In this way, we ensure that the architecture approach is "just enough" whilst being tuned to your specific needs.

This approach has been successfully used across large scale clients to set up and operate effective architecture functions, and transition from existing architecture functions to a more efficient and agile future state.



Target Architecture and Roadmap

We will define the Target Architecture mapped to the business strategy, to ensure that the direction is clear. From the Target Architecture, we will develop an architecture roadmap of the transition architectures so that there is visibility and transparency on the path to the target state. For each transition state, we will identify the incremental business benefit to be delivered.

To complement these, we will define a set of associated capabilities views, standards and patterns libraries. All these will be provided as accessible and easily maintainable digital tools

What does this give you?

- A clear and visible view of the target state.
- Clear linkage between the business capabilities and the technical capabilities that enable their delivery.
- Clear set of transition states to be able to move to the target state.
- Set of clear standards, patterns and principles to be used across the suite of delivery initiatives. .

What do the deliverables look like?

- Set of enduring Principles that future IT programmes should apply
- Decomposition of capabilities highlighting the relative strength displayed for each across the organisation
- Collection of artefacts that describe the existing high-level architecture
- Clear roadmap that reflects the organisation's priorities for future programmes of work – Driven through Gap analysis of Capabilities and Current Architecture against Business priorities

Insights and lessons learnt

- Share the knowledge freely – don't be too private
- Endorse the profile of the EA function across the organisation
- Create and maintain an Architecture Backlog

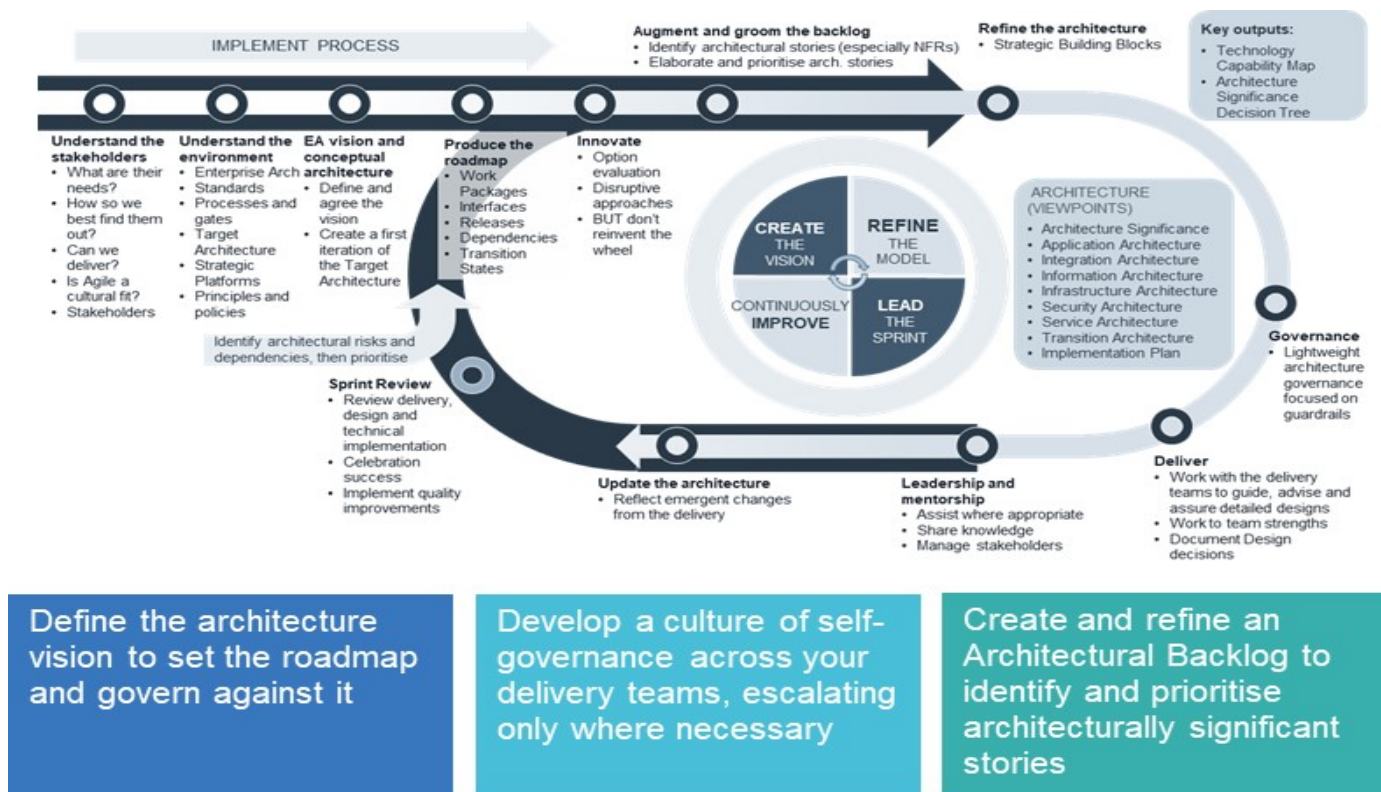


Agile Architecture Assurance Process

We will tailor our lightweight Architecture Assurance Process to your needs, ensuring that the delivered solution achieves the desired outcomes whilst minimising the impact of technical debt.

Our approach is to:

- Assess the business objectives and capabilities required to deliver them
- Determine the constraints in the IT that will constrain the business in meeting the objectives
- Define the architecture runway and associated backlog
- Identify, quantify and mitigate architectural risk and technical debt
- Prioritise the architecture focus based upon business value, total cost of ownership and architectural risk
- Define the architectural policies and standards for delivery to operate within
- Regularly review the backlog as business priorities change to ensure that the most pressing challenges are being resolved



Building internal architecture capability

We will help you to stand up your internal architecture capability. This includes:

1. Recruitment of appropriately skilled Architects to fill the roles defined in the Architecture Target Operating Model
2. Knowledge transfer to existing and new Architects to enable them to be successful as quickly as possible
3. Set-up of architecture and knowledge sharing processes and tools
4. Providing industry-leading Architecture training courses including using our network of partnerships

Our knowledge transfer approach is to progressively hand over responsibilities from PA Architects to internal team members.

1. Initially, PA will lead the architecture function with your architects participating
2. Your architects will then incrementally take on leadership responsibilities in collaboration with PA Architects
3. We will provide feedback on performance and recommend additional training requirements for the architecture function to operate independently.
4. We will hand over the remaining leadership responsibilities and monitor performance
5. We will identify any remaining training needs and upskilling actions prior to rolling off

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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