

Occam Group
Integrated Assurance

Service Definition Document

OCCAM GROUP

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Whilst your systems may be complex, your support solutions need not be. We believe in providing straightforward, high quality, good value engineering consultancy and support.

We aim to use our knowledge and expertise to develop a safer and more sustainable future because we recognise the importance of having a positive impact on the future of our planet and society.

About Occam Group

Who We Are

Occam Group is an agile consultancy that provides proportionate and pragmatic assurance support to both traditional and cloud-based systems, covering a wide range of systems engineering disciplines.

We offer a reliable, flexible, and tailored service that adds value to our clients' programmes and systems.

We have proven success in defence, rail, civil maritime, aerospace, and nuclear sectors, and are continually expanding into new sectors with an ever-increasing client-base.

Why Occam Group?

Reliable



Either through remote delivery, or as embedded team members, we are trusted by our customers to deliver. We have the flexibility to work around your needs and meet your programme, however tight the timescales. Our openness and integrity fosters strong relationships, enabling issues to be dealt with quickly and effectively.

Proven



We have a track record in using our expertise to work with stakeholders and deliver value for money, regulatory compliant outputs that are needed to make our customers' projects a success. As winners of the IET Innovation in Safety award, we know how to work at the cutting edge, to support our customers in the best way possible.

Independent



As a privately owned company with no vested interests, we can be relied upon to provide truly independent advice and support, ensuring that our customers do not face any downstream challenges regarding conflicts of interest.

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Assurance Services You Can Trust

Occam Group operates over multiple industries and provides integrated assurance services. We work with you to identify areas of support, and offer a simple single source solution, so you don't have to manage several contracts.

We have built a close network of trusted professionals, sub-contractors, and associates, to allow us to offer our clients an expanded range of services, and resilience.

The following sections describe our key areas of expertise.



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Safety Management and Support

Helping manage your safety risks…

We can help you identify, analyse, and control the safety risks associated with your facilities, platforms, and systems, giving you more time to concentrate on other issues.

…enabling you to meet regulatory requirements…

Our intimate knowledge of safety regulations enables us to deliver the required outputs right, first time, and facilitates acceptance by the regulator, thereby avoiding delays to your programme.

… and realise a reduction in your costs

Not only do our value-for-money services enable you to spend less on safety support, but we can help reduce overall project costs, by ensuring that safety issues are identified and dealt with early in the programme, avoiding expensive downstream re-design.

Skills

Safety Management Systems & Plans

- Development and implementation of pragmatic Safety Management Systems that enable you to sustainably manage risk across your portfolio.
- Authorship and enactment of concise Safety Management Plans that clarify roles, responsibilities, and interfaces, and ensure that planned safety activities align with overall programme requirements.

Safety Case Development

- Structuring and presentation of safety arguments and supporting evidence in regulatory compliant safety case reports, ensuring that stakeholders can quickly understand safety issues.
- ALARP optioneering and argument development, allowing you to understand what is reasonably practicable; ensuring that you can effectively control risk without having to spend more than you need to.

Hazard Identification

- Expertise in hazard identification techniques including SWIFT, STPA and HAZOP (iaw BS EN 61882) that support robust identification of the hazards associated with your system.
- Effective management of Hazard Logs, in your preferred hazard log tool, giving you an up to date and accurate picture of the overall level of risk your organisation is holding.

Legislative Compliance

- Assistance in compiling and presenting evidence of adherence to regulation and statute, providing a clear picture of legislative compliance and non-compliance.
- In instances of non-compliance, either development of plans to achieve compliance, or authorship of submissions for exemption where these are required.

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Design Substantiation

- Development of Design Substantiation Reports required to justify the validity of risk control measures claimed in your safety argument.
- Assessment and substantiation of Safety Instrumented Systems against the requirements of BS EN 61508:2010.

Safety Risk Management

- Risk assessment driven safety requirement derivation, enabling you to understand what steps must be taken to control safety risks.
- Expertise in Probabilistic Safety Assessment techniques (e.g. Fault Tree and Event Tree Analysis) that support quantitative assessment where required.

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Environmental Management and Support

Helping manage your environmental impacts…

We will work with you to identify potential cradle-to-grave impacts on the environment from your services, facilities, platforms, and systems, so you can work to minimise these early in the lifecycle.

…enabling you to meet regulatory requirements…

Using our knowledge of environmental law and regulations enables us to deliver the required outputs right, first time, to demonstrate compliance with requirements.

…and drive towards a more sustainable future

We can work with you to develop ISO 14001 and ISO 50001 management systems that ensure protection of the environment is integrated into your business operations. We can also advise on Net Zero strategy development, enabling your business to obtain larger government contracts that require this.

Skills

Environmental Impact Assessment

- Identification of environmental impacts from embodied and emitted materials and energies throughout the lifecycle. Screening and prioritisation of impacts to ensure effort is focussed on where it matters.
- Develop mitigating actions to impacts in order to achieve the Best Practicable Environmental Option through influencing the design and support solution of systems and services.

Legislation Compliance

- Using our experience of environmental regulations and legislation, we can compile comprehensive registers that demonstrate compliance with requirements.
- Our team has also experience in navigating the UK regulatory requirements associated with importing non-CE/UKCA marked US equipment into the UK.

Management System Development

- Whether at project, or organisational level, we have the experience to develop an environmental management system that complies with ISO14001, delivering you a recognised standard to help win work and deliver tangible improvement.
- Energy efficiency is a key contributor to improving environmental performance. Our team can work with you to develop Energy Efficiency Plans and an ISO 50001 management system to manage and reduce energy use and costs.

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Independent Audit and Advice

“Proportionate to your project…

Different projects require different levels of audit. We focus our ISEA activities to ensure a proportionate level of audit that identifies the real safety issues without incurring excessive effort and cost.

…and pragmatic in delivery…

Our objective and impartial judgements are also pragmatic. They focus on observations / deficiencies that are truly safety and environmental impact related; we do not comment on inconsequential related issues, such as writing style and typographical mistakes.

…enabling a reduction in your programme risk”

We identify safety and environmental issues early, allowing sufficient time for resolution measures to be put in place, thereby minimising the risk of programme delays and overspends.

Skills

Safety and Environmental Management System Audits

- Conduct of audits to provide assurance that safety and environmental management processes are in place, adequately documented, effective in achieving safety and environmental outcomes, and compliant with policy and standards. Categorisation of non-compliances, together with identification of areas for improvement to further improve levels of safety and environmental protection within your organisation.

Safety and Environmental Case Audits

- Development of Audit Plans, clearly presenting the audit objectives, the programme of audits, and the audit criteria that will be deployed.
- Objective, evidence-based audits that are not simply assessments of compliance with process and policy, but instead focus on the robustness of the safety and environmental arguments presented.

Periodic Safety Review

- Planning, conduct and reporting of Licensee / Authorisee reviews including assessment of design, equipment, operations and safety cases against current standards.
- Development of novel PSR / PRS strategies designed to scrutinise nuclear organisations who do not manage physical plant and equipment but hold formal nuclear safety responsibility.

Safety and Environmental Panel / Committee Input

- Independent support and input at safety and environmental meetings. Authoritative judgements on real safety and environmental issues, together with genuinely beneficial, pragmatic advice that provides a route to resolution, without compromising independence.

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- Specialist independent safety membership of Nuclear Safety Committees in accordance with Licence / Authorisation Condition 13 to provide an independent view of the 'health' of nuclear safety in the licensee / authorisee organisation.

Independent Nuclear Safety Assessment (INSA)

- We provide expert INSA and Independent Peer Review (IPR) to scrutinise nuclear safety cases, making formal judgement on the adequacy of hazard protection.
- Advice on submissions to regulators, from initial strategies through to final licence / permissioning / authorisation documentation, to help ensure regulatory approval.

Formally Delegated Advice and Governance

- Members of our team have held formal letters of delegation to conduct regulatory compliance audits and assessment to enable approval for use of complex systems.

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Materials Assurance

Navigating hazardous substance legislation…

Hazardous substance legislation is constantly evolving. Although this has a positive effect on health, safety, and environmental protection, businesses are faced with an increasing burden of continuous legislation monitoring and non-compliance anxiety. We will work with you to assess your inventory against key regulations such as UK REACH, ROHS, and POPs, and proactively implement solutions to ensure you remain compliant and competitive.

…and improving the sustainability of your inventory, whilst reducing obsolescence risk…

Your workforce is your most important asset. We can develop a substitution programme that considers regulatory risk and the certification requirements of your industry, to keep your workforce, and downstream users, safe. With proven experience in diverse sectors from aerospace to rail, and from civil nuclear to defence, we understand the challenges you face, and work with you to qualify more sustainable materials and processes to future-proof your inventory.

…to augment your value proposition and improve your resilience

A supply-chain is as strong as its weakest link. Whether you're a supplier or end user, we understand your requirements and obligations. Having supported major acquisition programmes from concept to disposal, an investment in us is an investment in your bottom line, saving you money in the long run by mitigating potential liabilities and ensuring regulatory adherence. Our proactive approach not only safeguards your operations, but also enhances your competitiveness in the marketplace, positioning you as a trusted and reliable partner to your clients.

Skills

Materials Assurance Strategy

- Strategy development that considers your industry, supply-chain, and objectives; be that sustainability, compliance and obsolescence risk management, or competitiveness.
- Materials management plan authorship that clearly articulates a route to success aligned with your programme requirements.
- Support with materials-related aspects of safety and environmental case arguments.

Legislation Compliance

- Assessment of regulation requirements relevant to your business operations for key hazardous substance regulations, such as UK REACH, ROHS, CLP, BPR, and POPs.
- Determination of communication and notification obligations for both your company, and up-stream & down-stream actors in your supply-chain. Preparation of supplier questionnaires and competent body reports.

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Authorisation and Exemption Management

- Support with implementation and maintenance of UK REACH authorisation requirements such as exposure monitoring to ensure the health and safety of personnel, and compliance with conditions of the authorisation.
- Where applicable, authorship of defence exemption applications and associated supporting evidence, such as chemical safety reports, socio-economic analyses, and risk assessments.

Hazardous Materials Portfolio Management

- In depth analysis of your inventory, and interfacing with your supply-chain, to determine compliance and obsolescence risk.
- Safety Data Sheet review to ensure compliance with CLP, COSHH, and UK REACH regulations.
- Substance CAS number indexing and restriction assessment to identify current or upcoming restrictions on use.

Through-Life Materials Support

- Hazardous substance contract requirements setting advice and guidance to reduce ambiguity in disclosure and data requirements. Tailoring of defence-specific conditions, such as DEFCON68.
- Tailored advice on preparing for your equipment end-of-use scenario. Whether that be re-use, sale, recycling, or disposal. Hazardous substance disclosure report authoring.
- Legislation horizon scanning and substitution strategy.

Material Selection, Substitution, and Qualification

- Materials and process substitution advice and research that considers safe and environmentally friendly alternatives that are resilient to changes in legislation and obsolescence.
- Technical suitability and qualification of new materials by both desktop assessment and physical test programmes; including fire, toxicity, mechanical and corrosion testing. Analysis of test results to support industry certification.

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Independent Technical Evaluation

We deploy a broad range of expertise…

Covering aspects such as capability integration, system handling, human factors, structures, and systems.

…providing detailed in-depth analysis of data…

Assessing artefacts such as certification strategies, trials plans, test reports, software/complex electronic hardware designs, interface control documents and permit submissions.

…to enable capability to enter service

Using our wide range of experience and technical expertise to evaluate and advise on certification processes and compliance evidence, we help our customers get capabilities in use as soon as possible.

Skills

Trials Evaluation

- Review and advice on trials plans to ensure that planned trials deliver the evidence needed.
- Evaluation of test data to ensure appropriate conclusions are drawn that support certification requirements and provide underpinning evidence to safety claims.

Human Factors Assessment

- Ensuring work organisation and job design meets appropriate standards.
- Evaluating crew workload to ensure appropriate design and manning.
- Critical review of human machine interfaces to ensure compliance with good practice and relevant standards.

Certification Advice

- Developing tailored certification route maps to help guide customers through complex processes.
- Developing and implementing risk-based certification processes for organisations to enable flexibility and encourage innovation.

Safety Assessment

- Review of wide-ranging safety analyses including: FMECA, hazard analysis, munitions studies, Threat Hazard Assessment Reports, Functional Hazard Assessments.
- Assessment of safety submissions and permissioning statements.

Standards Compliance

- Assessing suitability of evidence of adherence to regulation, standards and statute, providing a clear picture of compliance and non-compliance.

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- Where straight forward compliance is not achievable, we advise on alternative acceptable means of compliance strategies so that programmes can progress without delay.

Design Evaluation

- Evaluation of structural properties and through-life fatigue against relevant codes such as ASME and British Standards.
- Assessment of substantiation of Safety Instrumented Systems and Programmable Elements against the requirements of BS EN 61508:2010.
- Assessment of complex weapons against Def Stan 07-85 and NATO STANAGs.

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Human Factors

Ensuring the human element is understood…

We understand that the human element of a system can be seen as a limitation, but it is also important to recognise the advantages of human factors integration in maximising the capability of a system.

…to deliver high performing systems…

By studying human performance and how humans help make things goes right in safety critical applications, we can design systems and work tasks that maximise the potential of systems.

…and reduce safety risks

Through considering the capabilities and limitations of human during design and operation of systems, we can reduce risk by minimising human and organisational errors and enhancing human performance.

Skills

Human Reliability Analysis

- Human Error Probability (HEP) assessment using techniques such as Human error assessment and reduction technique (HEART) and technique for human error-rate prediction (THERP).

Tasks Analysis

- Conducting Hierarchical Task Analyses (HTA) and Human Error Identification (HEI). Facilitating remedy workshops to introduce changes to task design.
- Gathering detailed analysis data from trial programmes via observations structured around task swim-lanes, interviews, Learning From Experience workshops and manning studies.

Culture Investigations

- Conducting safety culture audits of organisations to support continual improvement. Methods utilised include document reviews, questionnaires, interviews, observations and focus groups.
- Development of performance indicators and dashboards to help inform and focus improvement action.

Organisation Design & Assessment

- Organisational Baseline development to ensure delivery of high performing safety organisations against the Nuclear Industry Code of Practice.
- Development of training and competence requirements, job specifications and guidance to enable clear delegation of responsibilities.

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Task Substantiation

- Analysis of Performance Shaping Factors to form an argument for the suitability of a task. Covering aspects including: Individual's characteristics; Task characteristics; Environmental conditions; Organisational factors.
- Authoring of substantiation reports detailing claims, arguments and evidence on the acceptability of work organisation and job design.

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