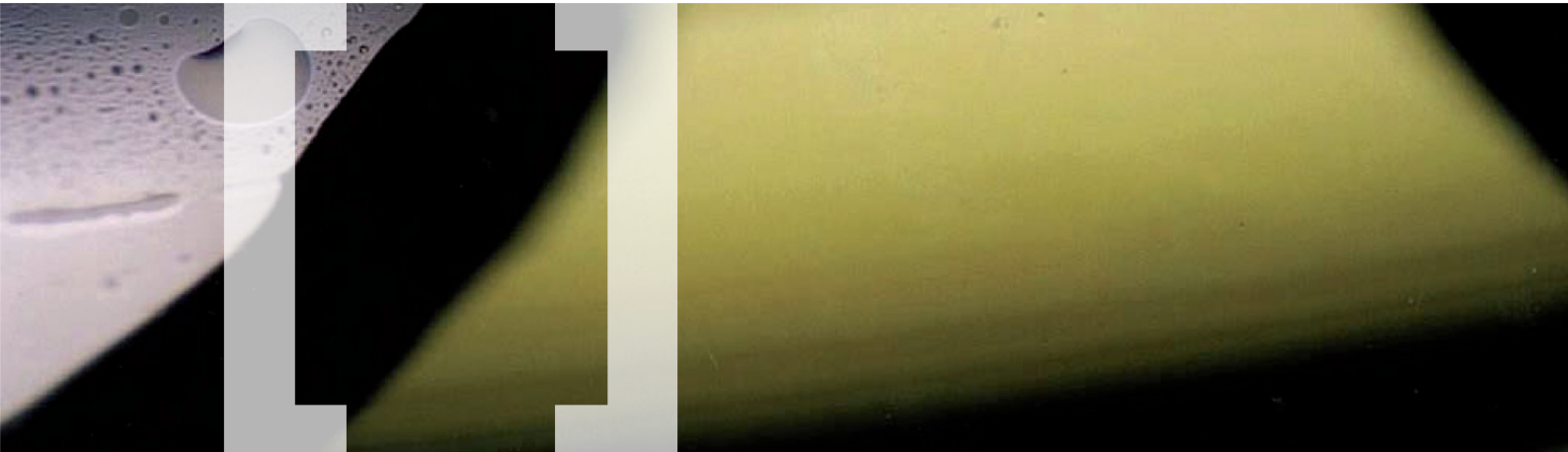


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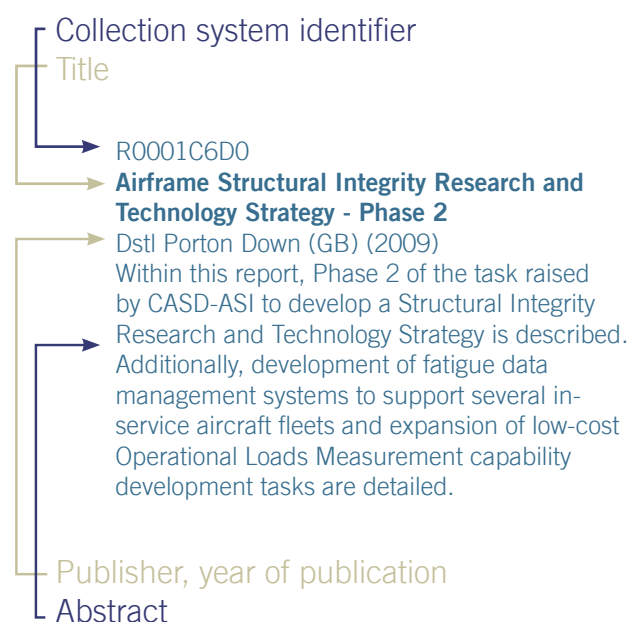


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R0002C881

A survey of noise and vibration exposure onboard HMSML Gleaner

Institute of Naval Medicine, Alverstoke (GB) (2012)
A survey was conducted of the noise and vibration occurring onboard HMSML Gleaner during surveying operations in waters around Grimsby. Noise and vibration measurements were made in different locations on the motor launch. The vessel was operated in two different conditions: transit speed, and surveying operations. The data have been assessed and interpreted in accord with current standards and guidelines concerned with health and comfort aspects of human exposure to noise and whole-body vibration: Control of Noise at Work Regulations 2005 and Control of Vibration at Work Regulations 2005. Assessments have also been made in accord with the Maritime and Coastguard Agency's Code of Practice for Controlling Risks due to Noise on Ships (MCA COP). The highest noise level measured in the crew compartments on motor launch was 72 dB(A); the noise in the engine space was 98 dB(A). The maximum acceleration value measured on the seats was 0.38 ms(to the power of -2) r.m.s. Crew exposure to noise would not be expected to exceed the lower exposure action value (8-hour average of 80 dB(A)) for normal duty. The vibration exposure would not be expected to exceed the action value (8-hour average of 0.5 ms(to the power of -2) r.m.s.). The noise levels exceeded the levels specified in the MCA COP which could interfere with orders and communications on the vessel. Recommendations are made on the actions that could be implemented to minimise the risk of disturbance from exposure to noise and vibration.

R0002C883

A SURVEY OF NOISE EXPOSURE FROM THE TESTING OF A GNOME-1 ENGINE

Institute of Naval Medicine, Alverstoke (GB) (2012)
Noise measurements were made during the testing

procedure of a Gnome engine within the Gnome Engine Test House at RNAS Yeovilton, Somerset. Time histories of sound pressure were acquired onto a Bruel and Kjaer 2250 sound level meter whilst the engine was running. Measurements were made at the ear of the safety person whilst they performed leak checks during the testing of the engine. The data have been assessed and interpreted in accord with the Control of Noise at Work Regulations 2005. Noise levels (LAeq) during leak checks ranged from 109 dB(A), obtained whilst the engine was running at 15000 r.p.m. to 121 dB(A), obtained whilst the engine was running at 26000 r.p.m. The 'upper exposure action value' of 85 dB(A) was likely to be exceeded by safety personnel within the test cell whilst the engine was running after about 1 minute. The noise exposure of personnel performing leak checks and engine adjustments on the Gnome engine were unlikely to exceed the exposure limit value' specified in the CNAWR whilst wearing the Peltor H7P3H hearing protectors. Recommendations have been made including provision of Information and training on the forms of action that personnel may take to reduce their exposure to noise, a programme of maintenance for all hearing protection devices used and appropriate health surveillance for noise-exposed personnel.

R0002D427

An analysis of the likelihood of rollover/occupant entrapment and associated inhibitors to emergency ingress/egress on a range of Op HERRICK platforms

Dstl, Fort Halstead (GB) (2013)
The aim of this short study was to assess the current state of platform emergency ingress/egress, with focus on rollovers and to make recommendations where beneficial techniques relating to occupant safety could be transferred or introduced across platforms. The HERRICK platforms investigated were: MASTIFF; WOLFHOUND; RIDGBACK; HUSKY; JACKAL/COYOTE; FOXHOUND; WARRIOR; CVR(T); WARTHOG; MAN SV and HET. The study was completed in two phases, firstly analysis of HERRICK data to determine platform likelihood of rollover and the ratio of occupants to available egress points with the platform in three orientations. Secondly, analysis to determine the physical attributes of the platform in regards to a number of key areas, including: safety in the event of a rollover; internal access to egress points; internal operation of egress points and external access to the platform. These areas were investigated through engagement with Defence Equipment & Support Project Teams (DE&S PTs) and analysis of post operational user feedback reports. From the analyses it was determined that there is potential to rollout additional safety measures across elements of the fleet and increase consistency of their use where already in place.

R0002D4E1

An assessment of stretcher casualty decontamination procedures Part 1: Extant procedures using Fuller's Earth

Dstl, Porton Down (GB) (2013)

A trial was conducted at the Defence Chemical, Biological, Radiological and Nuclear Centre (DCBRNC) Winterbourne Gunner during December 2011 to assess the effectiveness of the extant procedure for the Chemical, Biological and Radiological (CBR) decontamination of a stretcher borne casualty. The trial showed, for a mannequin dressed in either Combat Soldier 95 (CS95) ensemble or in Personal Clothing System - Combat Uniform (PCS - CD), that an average of about 5% of the contaminant applied to the clothing was still present following the undressing and decontamination procedures. The higher levels of decontamination were found on unprotected areas such as the face, the lower arms, hands and the back of the head. The aim of the trial was to establish a baseline against which other procedures will be evaluated.

R0002D1CF

An overview of 2 and 3 letter codes used to represent the UK in Intelligence Surveillance and Reconnaissance standards

Dstl, Porton Down (GB) (2012)

This report provides an overview of the current situation with regards to the use of 2 and 3 letter country codes v/hen referring to the UK in technical ISR related standards. Specifically it addresses the use of the country codes "UK", "GBR" and "GB" and whether UK policy should allow the use of "GBR" or "GB" when a standard requires it - it is commonly stated that the use of "GBR" is inconsistent with UK policy. The potential interoperability issue at stake here is that in a joined-up coalition environment our allies will not be able to discover UK data and if they do have it, they may not treat it appropriately, which leads to a subsequent security risk. The report overviews the country code requirements for a set of technical ISR standards. It also describes the various available options for country codes and discusses a number of the common issues raised with regards to the use of the "GBR" and "GB" codes. Finally it provides an overarching discussion of this information and makes recommendations for the best way forward.

R0002C257

COTSEE Task 3 C-IED CCD Evaluation Design Report

QinetiQ, Farnborough (GB) (2012)

The opportunities available to the MOD to exploit Commercial-Off-The-Shelf (COTS) technologies to support cost-effective capabilities are increasing.

However, many of these opportunities will be missed by the MOD if a close watch on technology developments is not kept, liaison with commercial sector is not adequately maintained, COTS technologies are not evaluated nor exploited for MOD gain, and stakeholders are not informed as to the exploitability of these commercial products. This report describes the Capability Concept Demonstrator (CCD) designed to investigate the use of COTS Synthetic Environments for Counter IED (CIED) training for the 'All Arms' user. The CCD is based on previous work that shows that trainees competing with each other taking turns to play friendly and opposing forces (the 'Joust' concept) has training benefit. A tripartite industry team, led by QinetiQ, with XPI Simulation and Newman and Spurr Consultancy (NSC) worked between February and July 2012 to produce prototype software. The CCD event on 26 July 2012 involved volunteers from Royal Engineers Search team who used the prototype software developed by the team. The software is based on COTS technologies with Government off the shelf (GOTS) modifications; the aim being to produce a system which can be evaluated at relatively low cost.

R0002D923

Critical Infrastructure - scoping study

QinetiQ, Farnborough (GB) (2012)

Force Protection Engineering have developed a variety of protective accommodation and other protective elements that have increased the survivability of personnel within tactical bases. However, the protection of critical infrastructure has not kept pace and as a result it is potentially possible for an attack to result in no casualties but yet still disrupt the effectiveness of the force due to damage to critical infrastructure. This study has attempted to address the issue and identify critical infrastructure within the military Tactical Base context and examine those elements that should be protected to enhance the effectiveness of the Tactical Base.

R0002C0B9

Descriptions of Futureworlds for use in Conceptual Force Development studies

Dstl, Porton Down West (GB) (2012)

The report describes the 6 Futureworlds developed by Dstl for use in Conceptual Force Development studies. Each Futureworld represents a unique set of features in terms of 3 key characteristics - international / political relationships, the availability of resources and the societal influences - developed using STEMPLES analytical techniques and informed by DCDC's Global Strategic Trends, the National Security Strategy and other sources.

R0002C23E

ELS Task JOS Performance Measurement for Contractor Logistic Support (PM4CLS) - CLS Landscape / Scoping Phase

IBM UK Ltd, London (GB) (2012)

The performance of Contractor Logistic Support (CLS) contracts from a supply chain perspective is not known and as a result the Authority's understanding of the performance of the Defence Support Chain (DSC) in its entirety is incomplete. Primary Research Question: What Supply Chain and Inventory Management metrics are appropriate for measuring the performance of CLS contracts and how could and should D JSC implement a Performance Measurement for CLS (PM4CLS) system? This report covers the initial stage of the study addressing this question, which is a scoping phase. It provides - A picture of the general support landscape across DE&S, and a detailed view of the CLS landscape for an agreed representative sample of contracts; A sample of metrics that are currently used to monitor performance; an indication of how well these metrics help PTs (PTs) to understand the performance of support contracts; A review of the benefits of MOD collecting a standardised set of measures across all CLS contracts; A view of the attributes of such a standardised set, and; A look ahead to how further phases of the study could develop and implement such a PM4CLS suite.

R0002C443

Health Usage Monitoring Systems

Dstl, Porton Down (GB) (2012)

This report fulfils the milestone detailing a literature review of previous key MOD HUMS research drawing together the significant activities in the development of HUMS in the Land Domain since themid1990's The report was funded under the Programme Office (Land) Mounted Sustain, GM7(M), RAMD, Ageing, maintainability and Durability (AMD) research Programme. This literature review draws together key previous MOD research undertaken on HUMS/CBM/SIE to inform the current Mounted Sustain research programme. The findings can also be used by HQ Army, DE&S, the SIE (LAND) WG and various other organisations for the benefit of developing a unified HUMS/CBM/SIE approach.

R0002D93C

Information Superiority SANDBOX Strategy 2012 - 2015

Dstl Porton Down (GB) (2012)

There are currently a large number of experimental, testing and integration environments within MOD and industry which lack a coordinated approach to their use, their capability and availability for C4ISR experimentation and development. The Information

Superiority (IS) SANDBOX aims to improve understanding of C4ISR requirements and bring coherence across these facilities and development environments, enabling better engagement with Other Government Departments (OGD), industry and academia, improving the output of research and development and realising savings to MOD. This strategy identifies the goals and objectives of the IS SANDBOX together with an outline of a delivery model, which endeavours to meet MOD requirements for C4ISR experimentation over the next three years. The strategy does not attempt to articulate the processes that will make this possible but instead focuses on the requirements, opportunities and outputs that will enable efficient and effective C4ISR development.

R0002C9C7

ISTAR OF Land Campaign Plan - The Development Methodology

Dstl, Porton Down (GB) (2012)

This document is intended for those seeking to understand and use the information generated by the ISTAR of Land Campaign Plan (CP), either for the purpose of conducting further study in the area, or for the purpose of using the results to underpin development in ISTAR of Land. It covers the methodology used to develop each of the three components: the 'As Is' Programme, the 'Should Be' Capability Analysis and the prioritised series of mitigations and interventions. The overall analysis was conducted against Op Herrick and then Future Force 2020 using a combination of scenarios.

R0002D503

Land RAMD intermediate report on Structural Ageing

Dstl, Porton Down (GB) (2013)

The report is a milestone deliverable under contract STECH/008. It is an interim report from the Land Mounted Sustain (RAMD) research programme. It describes the structure and status of the Structural Ageing (SA) research which is aiming to develop processes and analyses that enable asset integrity management of structural ageing Land vehicles. The top level of the SA management process is governed by a Decision Support Framework which enables equipment managers to identify gaps in knowledge of structural integrity issues and identifies the tools and process to manage them. The tools and processes being developed are described, these are: identification of structurally significant Items (SSIs); the measurement of significant flaws (by semi-skilled personnel); the quantification of the effect of flaws on the structural integrity, i.e. determination of tolerable flaw size and mode of failure; and the rate of structural ageing with respect to usage.

R0002C8F8

Lynx Mk. 9A Mission Essential Competencies (MECs) Summary Report

Dstl, Portsmouth West (GB) (2012)

To meet the challenges operators face in preparation and training, Dstl uses a methodology that focuses on mission execution in a non-permissive environment, Mission Essential Competencies (MECs). MECs are higher order individual, team, and/or inter-team competencies that a fully prepared pilot, operator, crew or flight requires for successful mission completion under adverse conditions in a non-permissive environment. The methodology is unique in that it focuses on identifying the competencies required for mission completion during combat, as well as Knowledge, Skills, Supporting Competencies and Experiences. It relies on expert operator input to prioritise both the importance of Experiences and the environments/methods by which they are best gained. The MECs process was carried out on the Lynx 9A helicopter operated by Joint Helicopter Command. During the process, Lynx 9A subject matter experts identified six MECs, 15 Supporting Competencies, seven Knowledges, 77 Skills and 71 Experiences deemed necessary to carry out the Lynx 9A role. This report describes the MECs process and defines those outputs.

R0002D4DD

Man Worn Power and Data

Dstl, Porton Down (GB) (2013)

The overarching aim of HERCULES is to reduce the physical and cognitive burden on the dismounted soldier. It is possible to approach this problem by improving the physical conditioning / preparedness of the soldier thereby making the extant load relatively lighter. This work investigated the option of replacing the array of cables and connectors associated with Dismounted Close Combat (DCC) communication equipment with a more ergonomic and cable-less design in which these elements were better integrated with the Osprey vest.

R0002D877

MMS (Multi Mission System) TDP (Technical Demonstrator Programme) Threat Data Pack

Dstl, Portsmouth West (GB) (2013)

The MMS (Multi Mission System) TDP (Technical Demonstrator Programme) is a two year programme that investigates the technical feasibility of integrating a lightweight, air defence and ground engagement turret missile to a vehicle platform and the capability provided by such a system. A requirement of the programme is for a Threat Data Pack (this document) to be prepared which captures and collates guidance information; background material including the MMS threat set; IR signatures for generic examples of each threat; and flight profiles for the air targets.

R0002D98B

NATO SET154 “Signature Management System for radar and infra-red signatures for surface ships” - UK aspects and lessons learnt

Dstl, Portsmouth West (GB) (2013)

This report is written to summarise the activities of NATO SET 154, entitled “Signature Management System for radar and infra-red signatures of surface ships” This report concentrates on the lessons learnt and the UK aspects of the work of the group. The group was active from April 2009 to December 2012 with membership from Australia, Canada, Denmark, The Netherlands, Turkey and the UK. The group organised a workshop and the radar part of the SQUIRREL trial, held in September 2011.

R0002D402

Requirement for programmable countermeasures dispensing. Working paper

Dstl, Porton Down (GB) (2012)

This paper describes the benefits to be accrued from employing programmable countermeasure dispensing for the protection of airborne platforms against EO threats (note that the case for RF threats has been handled separately).

R0002D3A6

Rotary Wing Sustainment and Opportunities

Dstl, Portsmouth West (GB) (2012)

This study examines options, limitations and requirements for the United Kingdom Ministry of Defence (MOD) RW fleet leading to 2040. It explores the opportunities and issues offered by potentially restructuring the RW fleet. The RW Strategy (RWS) provides a baseline for RW planning upon the retirement of the Puma in 2025 and involves maintaining the remaining four core RW fleets until 2040 through life sustainment and life extension programmes. A number of opportunity points (OP) exist at which deviations from the RWS could potentially be undertaken. Nine OPs between 2015 and 2040 have been identified as natural junctures for continuing or redirecting the focus of the RWS. Platform-level critiques were undertaken at each of the OPs which were then used to inform fleet-level analysis. A number of representative fleets were looked at in order to understand the likely “trade-space” Conclusions were drawn and recommendations proposed

R0002D3EF

SE Tower Joint Operational Training and Simulation (JOTS) High-level Training Report

QinetiQ Ltd, Farnborough (GB) (2012)
QinetiQ is contracted by the Defence Science and Technology Laboratory (Dstl) Programme Office to deliver the Synthetic Environments (SE) Tower Joint Operational Training and Simulation (JOTS) project, which aims to develop a Concept Capability Demonstration (CCD) of a JOTS federation to support the new Joint Force Command (JFC) training, exercises and experimentation. The JOTS team consists of QinetiQ, Thales, Raytheon, Quintec and 4C Strategies. The purpose of the JOTS project is to provide a compelling and readily-exploitable demonstration of the JOTS Federation, and to show that it offers cost-effective solutions to meet the simulation needs of those in UK Defence who plan, design and execute Individual, Team and Collective Training; Experimentation, Mission Preparation and Joint Warfare activities. The JOTS project consists of 6 interdependent tasks, three of which are requirements focused. These are outlined below. This document provides the output from Task 1 - Stakeholder engagement and capability requirements analysis. The purpose of the requirements tasks is to capture the full breadth of a potential JOTS capability in support of Future Force 2020, with initial and intermediate outputs shaping the design and execution of a more focused JOTS demonstration. The approach undertaken was a literature review together with stakeholder interviews to identify policy/strategy/concept/and research drivers for the JOTS capability. The primary output of this work is a preliminary set of JOTS user requirements that will inform eventual development of a formal JOTS User Requirements Document (URD). Initial implications for the design and content of the JOTS demonstration have also been developed.

R0002C78C

Strategic Energy Supply Study - Concept of Analysis

Systems Engineering & Assessment Ltd, Frome (GB) (2012)
The Ministry of Defence (MoD) recognises the importance of an assured supply of energy to support and deploy military capability. Whilst the Department for Energy and Climate Change (DECC) has overall responsibility for energy policy in the UK, MoD must be able to identify and mitigate its own supply risks and issues. Consequently, work has been commissioned to understand Defence's vulnerability to energy shortfalls to drive the development of appropriate policy and processes, as part of MoD research into sustainability.

R0002D733

SUBMARINE EXPOSURE LIMIT REVIEW: SULPHURIC ACID MIST

Institute of Naval Medicine, Alverstoke (GB) (2012)
The toxicology of sulphuric acid mist is reviewed with a view to setting limits for exposure in HM submarines. A health based time-averaged exposure limit is derived for continual patrol exposure. The limit recommended in this report should form the basis for the setting of an operational Submarine Health-based Action Levels (SHALs).

R0002C884

Summary of findings from research into Type 23 efflux deflectors

Dstl, Porton Down (GB) (2012)
This briefing note covers the key findings from research into potentials for replacement and repair of efflux deflectors on Type 23 Frigates, and includes the results of asbestos testing on decommissioned deflectors from Type 22 Frigates. It outlines the standards that must be adhered to when considering any alterations to the material currently used and the type of testing that would be required in order for qualification of new or altered material. Key recommendations are made, with reference to the full report (DSTL/CR66873) for further details.

R0002D932

Synthetic Environments Ray Tracing Exploitation (SERTE) Task 6 report

XPI Simulation Ltd, Chessington (GB) (2012)
This document is the final report for Task 6 of the Synthetic Environments Ray Tracing Exploitation (SERTE) programme. Task 6 - Sensor Simulation for Wildcat Lynx is particularly looking at the features needed for sensor simulation for the Lynx aircraft. The task started in July 2012 and completed in January 2013. MOD stakeholders were engaged at the beginning of the task and suggested the requirements for sensor simulation. As a result, a sensor simulation which had time variant effects was developed and demonstrated. The thermal history effects demonstrator based on the Real Time Ray Tracing Engine (RealRT) has shown that it is possible to simulate high fidelity IR simulation using ray tracing techniques.

R0002C5EE

Synthetic Environments Ray Tracing Exploitation (SERTE) Task 7 Final Report - Additional Real Time Ray Tracing Capabilities 22 pages including separate Appendix A, 22 pages

XPI Simulation Ltd, Chessington (GB) (2012)

The task looked at three separate areas: 1. Rendering of height data directly using ray-tracing, thus removing the need to convert the data to traditional polygon structure. 2. A scoping study for the CDAS support to determine which if any features of CameoSim need to be integrated into RealRT. Also as part of this sub-task there needs to be a review of the hardware's ability to provide high dynamic range outputs. 3. The ability to store multispectral datasets within the standard Database formats such as CDB. The height rendering sub-task has shown that it is possible to render height data directly without the need for conversion to polygons at any point. However the best methods found are not the same generic ray-tracing methods used in RealRT but it does use some of the techniques of ray-tracing to perform the task. There is merit in the use of these types of rendering techniques in simulation systems either with generic ray-tracing or more likely in the short term in conjunction with standard Raster rendering for the objects. The scoping study has shown that the main issues for the EO protection group is the ability to provide bright enough images to cause vision persistence. Ray-tracing can produce the values for the brightness but currently devices capable of providing the level of brightness to the user are not readily available if at all. The study of possible devices should be continued but is outside the scope of expertise of the current team. However further work should be considered to provide the EO protection group with a system that can provide better visual and particular weapon effects on their current VBS2 system. This will enable them to keep the flexibility of the current system and current assets but improve the flexibility and performance of the system. The research into the storing of multi-spectral dataset in standard formats such as CDB; has shown that although these standards handle the storage of the materially mapped dataset, they do not do this at the level required for multi-spectral rendering. They also do not store the required rendering information of the material apart from within proprietary extensions. It is suggested that the multi-spectral data community is engaged along with the developers of CDB to help develop standard methods of holding the data required for the rendering of multi-spectral datasets.

R0002D947

Synthetic Environments Ray Tracing Exploitation (SERTE) Tasks 1 to 8 Final Report

XPI Simulation Ltd, Chessington (GB) (2012)

The Synthetic Environment Ray Tracing Exploitation

(SERTE) research programme was started in late 2010. XPI Simulation Ltd. (XPI - lead contractor) and Lockheed Martin UK Insys Ltd. (LMI) were selected to continue work initiated under the Synthetic Natural Environment Ray Tracing (SNERT) programme. The main aim of the SERTE programme was to take the initial ray tracing prototype, add features to it while improving performance, and try to exploit the technology in MOD simulators in the land, sea and air domain. SERTE tasks 1-8 covered a wide range of research areas with the main focus being on the experimentation and exploitation of Real Time Ray Tracing. This report is a summary of seven task reports which cover work carried out under the individual tasks, and as such does not include detailed technical information. The ray tracing prototype has been used to successfully demonstrate some impressive visual effects that are unavailable in raster graphics, and an ability to use existing tools and techniques to reuse legacy databases and other components. The research has shown that Real Time Ray Tracing can be exploited in training simulators now or in the near future.

R0002D448

The Effect of Physical Load on Marksmanship Efficiency - Summary of Relevant Information

Dstl, Porton Down (GB) (2012)

Dismounted soldiers routinely carry up to 60kg on operations. While the effects of load carriage (and associated fatigue) on physiological performance are understood, the extent of the specific detriment to dismounted lethal capability is not. This Study demonstrates that load degrades marksmanship performances during static live firing and live firing tactical training. Furthermore the load burden can adversely affect balance, strength and endurance, exacerbated by the effects of poor equipment integration; which in turn affects the stability of the fire position long enough to degrade a firer's ability to acquire, engage and ultimately hit the target.

R0002D4D8

The Optical Detection of LEO Satellites in Daylight

Dstl, Porton Down (GB) (2012)

This working paper is concerned with the detection of low Earth Satellites in daytime by using optical sensors to detect reflected sunlight. The paper indicates the signal to noise ratio that might be achieved and explores some of the system trades including the optimum choice of spectral filter.

R0002D41D

The Protection Against Aerosols Provided by an Australian Chemical and Biological Protective Garment (“Black CB Suit 2006”)

Dstl, Porton Down (GB) (2012)

An Australian CB protective garment and the materials it was made from were challenged with solid fluorescein aerosol and the deposition on surfaces below the fabric determined by fluorometry.

R0002D3F8

The Resources and Demands of the Military Stabilisation Support Group (MSSG)

Dstl, Porton Down (GB) (2012)

This report details the findings of a Dstl study to investigate the: 1) resource available to the Military Stabilisation Support Group (MSSG) from 2009 until 2012 in terms of its Reserve Force Pool and; 2) demands which the Group has met in recent years.

R0002CDCA

Transition Welding in the Secondary Propulsion Plant of Successor

Dstl, Porton Down (GB) (2012)

Issues related to fabricating and managing transitions between different metals and components in the secondary propulsion plant of the future submarine “Successor” are discussed. The joining of metals by fusion welding is the primary focus, with a review of existing techniques for fabrication and inspection included. The transitions that will require welding were identified from documentation provided by BAE Systems and existing procedures for fusion welding these dissimilar metals, along with appropriate Non Destructive Examination (NDE) techniques, were reviewed. For each transition the main considerations for producing and maintaining weld integrity are discussed and the areas of concern are highlighted.

R0002CBEC

Unilateral NMR Depth-Profiling to Quantitatively Measure Liquid Mass Distribution in Military Protective Fabrics under Contact Pressure

Dstl, Porton Down (GB) (2012)

Unilateral NMR profiling methods were developed to quantitatively measure the spread volume and penetration depth of a target chemical into military protective fabrics for a deposited drop on fabric subjected to consecutive applied pressures and fabric contacting a chemical on a non-absorbent surface with applied pressure.

R0002D4DB

Whole Body Vibration Mitigation Options for High Speed Craft

Dstl, Porton Down West (GB) (2012)

Personnel aboard High Speed Craft (HSC) experience large accelerations from boat motions and wave slams. These motions cause Whole Body Vibration (WBV), which causes extreme fatigue and risk of acute and chronic injury. Mitigating this WBV will improve the performance of personnel following a boat transit and reduce risk of injury over their career. WBV is regulated through EU regulation 2002/44/EC although MOD has exemption from the Secretary of State until 2015. To renew this exemption, MOD must show progress to reduce WBV exposure to as low as reasonably practicable. This report summarises the options available to mitigate injury risk, assesses and ranks them in order of those which are most feasible and are cost efficient. This is a culmination of research on this project and offers expert advice to support decision making for actions to take on legacy craft and future concept design. The recommended way ahead is a combination of options, which all offer mitigation in the very near term and/or are required to provide enhanced protection in the longer term.

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