CSIIS Tasks Overview

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Overview of Tasks

The Command, Control, Communications, Computing, Intelligence, Surveillance and Reconnaissance (C4ISR) – Secure Information Infrastructure and Services (CSIIS) Research Programme has been established to respond in a timely manner to research needs across a number of technical disciplines/strands, including Networks, Services, Communications, Information Assurance, Knowledge Management, Information Management and Information Exploitation. Since its inception in January 2014, 10 tasks have been let.

The aim of each of these tasks is described in brief below.

Task 2-1-1 Airborne IP Node

MOD is seeking new ways of providing beyond line-of-sight (BLOS) communication capabilities, recognising that expanding the use of satcom in its current format is incompatible with future aspirations. The aim of the task is to examine the potential benefits, costs and risks associated with the concept of 'airborne IP nodes that provide medium to high capacity, low latency, data relay routing to users within the host air vehicle's line of sight.

A key starting point for this task is the work undertaken through ESII Task 27, Enabling C2 for Air, which has progressed techniques to deliver improved command and control for UK Air, Land and Sea air assets via a Joint information management and network approach.

Task 2-2-2 Information Based Security

This is a 10 week task to investigate the novel Information Based Security (IBS) concept, to determine how it can be applied within a MOD context circa 2022 and recommend future activities to enable realising an IBS paradigm. The task has specifically been requested[1] to investigate Vision and Concepts, Static and Dynamic Data Types and High Assurance Techniques and Technologies. This phase of the work will therefore focus on these three key themes.

Task 2-3-3 IM Optimisation Initial Scoping Study

This task aims to develop a research strategy for realising Optimal Information Management, of sufficient detail to include describing sub-tasks that will need to be undertaken and a plan consisting of spirals of development that sequences these by considering priority, need for early exploitation, inter-dependencies and relationship and dependency to activities proposed for the IA and CN strands.

Task 2-1-4 Maritime CIS

The aim of this task is to conduct preparatory activities in support of the development of a Mission Configurable (MC) Maritime C4ISR Test, Reference & Validation Facility.

Task 2-1-5 Air CIS

The task aims to identify and measure the potential improvements to the Close Air Support (CAS) Tasking Process that can be achieved by utilising a hybrid architecture and intelligent information services. The initial work is to define a manned experiment to validate the potential improvements to the CAS tasking process that could be realised through the use of a hybrid architecture and supporting intelligent information services.

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Task 2-1-6 Radio over IP

Radio Over IP (ROIP) and SwitchplusIP were previously demonstrated to MOD and stakeholders at the ISCO Snowdon Demonstration showing how an operator at a HQ location could communicate with two remote tactical radio networks over a high bandwidth IP infrastructure from a single, integrated position.

The experimental ROIP infrastructure developed for ISCO operated on a single security domain using the Exelis EnHCDR as the high bandwidth IP connection between the HQ operator and the remote radio nets, whilst Bowman ADR+ and SpearNet Team Member radios represented the remote Bowman VHF and coalition nets.

This task will investigate and demonstrate policy and technology for multi-domain ROIP using the Exelis SwitchplusIP Red/Black system. The work will address a number of research areas including information assurance within and between communications networks of differing security domains, enabling secure information exchange, interoperability and collaborative working whilst ensuring the integrity of protected information.

Task 2-1-9 Heterogeneous Networks

This task aims to highlight those candidate solutions that have the potential to advance the C4ISR land tactical/close combat network capability within the 2020 timeframe, through credible approaches consistent with the System of System (SoS) model, and which are cognisant of developments in technology as well as trends in the operational and procurement policy of the United Kingdom's allies.

Task 2-2-10 Secure Wireless HQ Scoping Study

This task aims to develop the MOD understanding of the technical avenues for realising a Secure Wireless Infrastructure capability, communicated through the identification of a number of Information Assurance (IA) focussed options for proof-of-concept and technical demonstrations which the MOD can subsequently elect to pursue through future research activities.

A balanced set of options is required, informing and taking into account MOD risk appetites, technical developments/interventions and procurement linkages and dependencies. These options will provide the Authority with the basis for potentially funding Technology Readiness Level (TRL) ~5 Demonstrators, based on the perceived benefits and risks of deploying secure wireless infrastructure in UK and overseas operations.

Task 2-1-12 Baseline the Close Combat C4ISR Land Tactical Environment

The aim of this task is to inform the direction, development and research into close combat C4ISR capabilities in the 2020 timeframe in support of the Assured information and infrastructure (Ai2) research programme.

It will provide a baseline description of UK MoD C4ISR capability in the tactical close combat Land Environment (LE) enabling subsequent gap analysis and assessment of the C4ISR capability in order to identify potential mitigations (as necessary) and develop roadmaps. It is scoped to provide the baseline description of UK MoD C4ISR capability and subsequent tasks will complete the gap analysis and produce the mitigations and roadmaps.

Task 2.-1-15 Free Space Optical Studies

This is a classified task.

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