Future Capability Group Open Innovation Laboratories

Robotic & Autonomous Systems Application Interface Strategy Paper

# Version Control

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| **Version Number** | **Description** | **Date** | **Comments** |
| 0.1 | Initial content creation for discussion | 28 Feb 22 |  |
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# Governance

Under governance of Future Capability Group (FCG) Open Innovation Laboratories (OIL)

* MOD Task Sponsors:
  + FCG: Col Dan Anders-Brown
  + ERCOE:
* Task Lead:
  + MOD: TBC
  + Industry: TBC
* TD Info Support: Steve Green

# Background

OIL is a Team Defence Information (TDInfo) mechanism for industry engagement in support of FCG programmes and areas of interest which as part of the Human Machine Teaming (HMT) Concept includes commercialising the development robotic and autonomous capability for deployment on the battlefield.

Context

For many years Defence has looked to adopt open and modular systems architectures to enabling technology insertion, accelerating capability development and managing cost through access to commercial solutions.

Today’s capability is becoming more digital and digitised in nature and therefore as part of the architectural approach there is a need to understand the potential for Application Interfaces (API).

As part of the Expeditionary Robotics Centre of Expertise and Multi Domain Integration Programmes FCG want to investigate the potential of open APIs in enabling agile development and interoperability across its range of currently independent robotic systems.

# Requirements

This task will consider wider sector API strategies, industry leading practices, observations and lessons from Robot Dog Olympic Hackathon event and current architectural approach to RAS capability in Defence to make recommendations and potential call for action in adopting an API framework across its RAS capabilities.

# Task

Over a 12- 16 week period the task team will undertake the following:

* Scope and Bound Defence RAS API vision and challenge
* Conduct a cross sector API literature trawl and document review
* Establish an API strategy and framework good practice
* Map and gap against Defence RAS challenge space
* Document findings including conclusions, recommendations, and call to action

# Output

The paper will describe the defence challenge, provide examples of API practices across sectors and make recommendations for how Defence API strategy and development framework could accelerate RAS:

* Accelerating Capability Development
* Enabling Interoperability
* Assure openness and modularity
* Create conditions for Agile Development Operations
* Set standards for information exchange requirements and application interfaces.

# Task Group

This is a joint activity between MOD & Industry facilitated by TDInfo.

To be successful this task requires a mix of experience and background and people from the following organisations have already expressed interest in supporting:

* Babcock
* D2IQ
* Fujitsu
* Google
* IBM
* KBR
* Mulesoft
* Salesforce

# Task Duration

Task would run from May 22 to August 22 and produce a short paper and presentation the findings.

# Communication

1. The outcomes will be presented at a Team Defence Information Out Brief session
2. The paper will be available for download from the TDInfo website
3. The paper will be distributed to a selected MOD and Industry target group
4. The recommendations will inform future FCG RAS and MDIS activities

# Ways of Working

* All outputs will be publicly available
* Content will be created collaborative
* Content is to be peer reviewed and agreed
* Regular touch point ‘Teams’ calls will be scheduled to assess progress and direct the work
* Outputs will be released under creative commons licence[[1]](#footnote-1)

Annex A to

API Task From

Dated:

## FCG OIL Robot Dog Olympics

### 12-13 or 14-15 May 2022

### Innovation Hub MOD Abbey

Text

Description automatically generated with low confidence

Use your Dev Ops skills to overcome the Defence challenge and win the first FCG OIL Robot Dog Olympics

Pitch your programming skills, form collaborative teams and compete against your peers.

Utilise your creative edge and agile Dev Op capabilities pulling down open content to ‘train’ your robot dog to operate at range, overcome the challenges and win

Over 2 days 4 multidisciplined teams of up to 10 individuals from across MOD, industry and academia will form to compete. Register your interest today to secure your place at one of these events:

* Event 1: 14-15 May 22
* Event 2: 16-17 May 22

1. https://en.wikipedia.org/wiki/Creative\_Commons\_license [↑](#footnote-ref-1)