ANNEX “A” - STATEMENT OF WORK

Title: Design and Development of Low Burden Body Protection: Hierarchical Materials and Tactical Assault Uniform

Background

Canada and her allies continue to face a complex array of security challenges, including the proliferation of weapons of mass destruction and the possible terrorist use of Chemical Biological Radiological Nuclear (CBRN) devices. To capably interdict or respond to these and other emerging asymmetric threats there is a need for specialised clothing and equipment for the individual that will ensure operational tempo is maintained whilst mitigating physiological effects and providing protection from harm. DRDC Suffield is developing and studying new approaches to body and respiratory protection for application in operations and missions where hazardous compounds may be intentionally used against them.

Objective

To develop a low burden protective fabric and protective tactical assault uniform, which as a system, affords significantly reduced physiological burden, improved ergonomic functionality and mission orientated protection for the future security environment. This will be achieved by considering appropriate concept of operations and system performance data and proven concept design work from DRDC Suffield with state-of-the-art expertise in materials and advanced manufacturing processes to produce i) an advanced prototype for a hierarchical protective fabric, and ii) a combat functional prototype protective tactical assault uniform incorporating the hierarchical protective fabric.

Scope of Work

In consultation with the Technical Authority (TA), the Contractor will be required to carry out the following work, consisting of six (6) milestones:

- Given a database of performance requirements for a hierarchical protective fabric system, identify and validate leading-edge materials and technologies that will specifically address requirements for fire retardancy, aerosol protection, chemical vapour adsorption/neutralisation, super-repellency, optimised thermal insulation and evaporative resistance, moisture management and high wear robustness. At the same time, the hierarchical protective fabric must contribute to limiting physiological burden and improving ergonomic functionality whilst providing mission orientated protection for the future security environment

- Using the materials and technologies identified earlier, develop a minimum of three hierarchical fabric systems and validate their physical, physiological and protection parameters and performance attributes; refine each fabric system to a final version and if warranted, down-select to the most promising concept; formulate a design strategy to integrate fabric systems into a minimum of two tactical assault uniform concepts

- Finalise design of two functional protective tactical assaulter uniform concepts; Implement the concept design strategy and build two functional prototype tactical assault uniforms; refine each uniform to a final version and down-select to the most promising concept

- Using the final down-selected functional prototype tactical assault uniform as the model, build sixty-four (64) functional prototype protective tactical assault uniforms, thirty-two (32) each, with the two most promising hierarchical fabric systems
- Evaluate the system level performance of the functional prototype tactical assault uniform using accepted methodologies to assess flash fire protection, physiological burden, ergonomic functionality and mission orientated protection

- Provide input and support for presentations and/or technical papers prepared for various DND briefings, scientific meetings and symposia

Meetings

Meetings will be scheduled with the TA every four months. For budgetary purposes, two meetings must take place at the contractor’s site and the third at DRDC Suffield. In the event of conflicting schedules, teleconferences must be organised.

Reports and Deliverables

The project must deliver an advanced prototype for a hierarchical protective fabric, and a combat functional prototype protective tactical assault uniform incorporating the hierarchical protective fabric as expressed in the objective above. A final report is required that documents the materials, technologies and sub-systems used in the development of the final concept. The format of the report must be electronic on a suitable storage media.

Government furnished support/equipment/information

The government must provide the contractor with written material describing the concept of operations and performance requirements for a hierarchical protective fabric and a protective tactical assault uniform.

Acceptance criteria

Acceptance of the work conducted in this contract will be determined by the TA based on receipt of all deliverables detailed above and a review of the final report. The work will be monitored regularly for adherence to the proposed work plan and any modifications from this plan will require the approval of the TA.

Intellectual Property

All background intellectual property (IP) will be identified by the holder and remain the property of the originator. All project participants must make available to all other project participants at no charge, any background IP required for the successful completion of the project, and where applicable, non-disclosure agreements must be established.

To facilitate possible commercial exploitation of the hierarchical protective fabric and the protective tactical assault uniform, the contractor will retain ownership of the principal foreground IP generated in this contract, which is the hierarchical protective fabric and the protective tactical assault uniform. Should the Crown develop a sub-system component by separate means that is used in the hierarchical protective fabric or the protective tactical assault uniform, the Crown must retain ownership of the IP for the specific sub-system.

Notwithstanding the ownership of the hierarchical protective fabric and the protective tactical assault uniform which is the principal foreground IP generated in this project, this foreground IP must be made freely available to the Crown to use for their internal purposes under a non-exclusive royalty-free license.