ANNEX “A” - STATEMENT OF WORK

Title: Design and Development of a Prototype Tactical Combat Respirator Facepiece

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 tactical combat respirator facepiece with significantly reduced physiological / psychological 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 early concept design work from DRDC Suffield with state-of-the-art expertise in industrial design approaches, materials and advanced manufacturing processes to produce a combat functional, low burden respirator facepiece device. Consideration must be given in the design of the respirator facepiece to either integrate with a discrete air purifying filtration device or incorporate this feature in the platform itself.

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 tactical combat respirator, identify and validate leading-edge materials and technologies that will significantly reduce physiological/psychological burden, improve ergonomic functionality and address mission orientated protection for the future security environment

- Using the materials and technologies identified earlier, develop and validate sub-system components; formulate a design strategy to integrate sub-systems into a minimum of two tactical combat respirator concepts

- Implement the concept design strategy and build two non-functional prototype tactical combat respirators; refine each concept to a final version and if warranted, down-select to the most promising concept

- Using the final non-functional prototype tactical combat respirator as the conceptual model, build a functional prototype (of each). Here the term “functional” should not be interpreted as necessarily ready to commercialise, ie, it does not need to be a confirmatory pre-production model

- Evaluate the system level performance of the functional prototype tactical combat respirator using accepted methodologies to assess physiological/psychological 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 a functional prototype of a tactical combat respirator 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 tactical combat respirator conceptualisation.

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 tactical combat respirator, the contractor will retain ownership of the principal foreground IP generated in this contract, which is the tactical combat respirator. Should the Crown develop a sub-system component by separate means that is used in the tactical combat respirator, the Crown must retain ownership of the IP for the specific sub-system.

Notwithstanding the ownership of the tactical combat respirator 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.