

Annex C – Statement of Requirements

The Authority has a requirement for the supplier to address the questions below as part of the contract deliverables. The Supplier should provide a Technical Proposal that addresses these requirements, including commitments to holding start up meetings and monthly teleconferences, as detailed below. Be aware that the Technical Proposal will likely be used as the basis for the Scope of Work in any future contract, and therefore should cover all requirements, including reviews and meetings.

Tasking start up meeting

Presentation pack to include:

- Team members and roles
- Proposed way forward
- Expected outputs
- Commercial aspects
- Review of deliverables
- Risks/issues

Monthly tele-conference meetings

- Update on technical progress
- Progress report against project schedule.
- Review of risk management plan.
- Commercial aspects.
- Review of deliverables.
- Risks/issues.
- Supplier performance

Task1

Produce a summary literature review of the principles of generalisation and factors which may affect operational detection dog generalisation performance to add to the existing literature previously reviewed and produced by the Authority (this will be supplied on award of contract). This should consider evidence from the field of detection dog/animal behaviour science and should also draw on wider evidence, if deemed relevant and applicable, from fields beyond detection dog behaviour (e.g. experimental psychology). The literature review should aim to suggest practical ways to maximise detection dog odour generalisation to desired substances.

- a) Consider generalisation literature from a range of subject areas e.g. detection dog science, animal behaviour, experimental psychology etc.
- b) Consider practical ways to optimise detection dog generalisation based upon the literature.
- c) Provide a Microsoft word copy of the summary literature review to a standard suitable for publication in a peer reviewed academic journal

Given a limited number of odorant training samples with specific characteristics, e.g. a simple, mono-molecular odour, a complex odour mixture, a low odour substance and a high odour substance, devise two odour training protocols for training detection dogs. One of these protocols is likely to be for a dog with a relatively static training kit and the other one for a dog with a wide

range of training substances. Please note, the above is provided as an illustration of the variety of substances and types of detection dog which may be specified and further details will be provided on award of contract. The odour training protocols should be based on the current science, obtained through the literature review. The protocols should be designed to promote generalisation to substances with a similar odour profile, or different quantities of a target substance, to a level sufficient for operational purposes (approximately 70 - 80%). However, the protocols should also maintain sufficient discrimination to minimise false alarm and 'nuisance' positive responses and also limit training burden. Whilst devising the protocols, consideration should be given to, but is not limited to, the potential effects of all key principles identified in the literature review (e.g. peak shift, latent inhibition, overshadowing, training on odours in series or in parallel etc.). A scientific rationale should be provided for the decisions made when developing the protocols including an explanation of how theoretical effects apply to practical training and the extent to which varying these is expected to alter training outcomes.

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Provide a new recommended methodology, considering scientific evidence obtained from the literature review, which provides a more efficient way to monitor generalisation performance over time in operational detection dogs. **Redacted under FOIA Section 26 – Defence.**

Whilst developing the methodology, consideration should be given to, but is not limited to, use of rewards and reward schedules, number of presentations of targets, the use of novel and familiar distractors and how to prevent indications on packaging.

A Final Technical Report and Final Technical Presentation should be produced, containing:

- Summary literature review on the topic of generalisation.
- Two detailed odour training protocols for training and maintaining performance on a set of training odours within the given constraints in order to maximise generalisation and limit false alarms and 'nuisance' positive indications, including scientific justifications for the factors considered and the levels at which they have been set.
- **Redacted under FOIA Section 26 – Defence**
- A recommended methodology for efficient ongoing monitoring of generalisation performance in operational detection dogs over time.

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On award of contract, the supplier will be provided with model sets of specifications and limitations for two detection dog vignettes, which will include:

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More details will be provided on award of the contract, at which point the supplier will be required to discuss their preliminary ideas with the Authority and obtain feedback before commencing work.

Task 2

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The required work should address the questions outlined above in relation to the topic area in an efficient manner. This should include a thorough consideration of the existing literature relating to generalisation in detection dogs, building upon information previously obtained by the Authority, as well as relevant and applicable wider research and concepts identified in any other **Redacted under FOIA Section 26 – Defence**, psychology, human learning, wider odour detection science etc. For the odour training protocols, scientific justification, based upon theory / previous research, should be provided for the variables chosen and their proposed levels.