# Innovation Call for Rat Tracking Solutions

23 Apr 2019



- 1. Administrative Details on the Innovation Call
- 2. Background and Scope of this Call:

(A) Mapping of underground rat burrow network

(B) Tracking the location and movement of rats

3. Q&A Session

#### Key dates and indicative timeline

- 9 Apr 2019 : Launch of Innovation Call for Rat Tracking Solutions
- 23 Apr 2019 : Briefing session
- 22 May 2019 : Closing date of call. Submission of softcopy application by 11:00 hrs
- May Jun 2019 : Evaluation and clarification of proposals
- Jul 2019 : Award of projects

<b>Applicant – Nature of Organisation</b>	<b>Funding Support</b>
Institutes of Higher Learning/Research Institutes	Up to 100% of qualifying project cost
Local Small and Medium Enterprises	Up to 70% of qualifying project cost
Large Local Enterprises	Up to 30% of qualifying project cost
Multi-National Companies	Up to 30% of qualifying project cost

#### Evaluation criteria

<b>Evaluation Criterion</b>	Weightage (%)
1. Effectiveness of solutions	30
2. Feasibility of deployment in actual operational environment	30
3. Expertise and capacity to execute the project	20
4. Cost competitiveness	20
Total Score	100

# Background and Scope of this Call

#### Challenges of Current Rodent Surveillance Efforts

- Rat underground network is inaccessible and hidden from human sight
- Lack of information on extensiveness of underground rat burrow network, rat breeding grounds, extent of the rat infestation and the pathways taken by rats
- Rats can adapt to man-made structures such as underground drains/lines, bin chutes, false walls and structural defects

• Two Work Areas:

(A) To map the underground rat burrow network(B) To track the location and movements of rats

- Proposals can be submitted for either Work Area or both Work Areas
- Proposals may be awarded in full or in parts

## Work Area (A):

#### To map the underground rat burrow network

#### **Desired Outcome:**

- A mapping solution that gathers information on key features of the underground rat burrow network, with visualisation of the data
- Applicable at grassy area and concrete building substructures such as housing block bin chutes

#### Work Area (A):

#### To map the underground rat burrow network

#### Key Requirements:

- ✓ Detect and map the underground rat burrow network to a depth of 2 metres from the surface
- Enable the system users to meaningfully visualise and interpret the information and data collected, including but not limited to:

   a) the location, depth and size of burrows
   b) (optional) identify whether the burrows are active and any signs of rat infestation
- Provide a user-friendly interface for the user to visualise, understand and process the outputs into digital file format(s) for further analysis

# Work Area (B):

#### To track the location and movements of rats

#### **Desired Outcome:**

A rat tracking system to:

- Trace the pathways taken by rats with timestamps
- Capture information and provide insights on rat behaviour
- Localise and visualise the movement patterns

#### Work Area (B):

## To track the location and movements of rats

A possible scenario of a rat's routine path is illustrated below

Nesting ground:

e.g. burrows in open fields

Movement platform:

e.g. covered/underground drains, piping, sanitary lines, bin chute substructure

#### Movement platform:

e.g. covered/underground drains, piping, sanitary lines, bin chute substructure

Food source sites:

e.g. nearby food shops, wet markets, bin chutes, bin centres

# Work Area (B):

## To track the location and movements of rats

#### Key Requirements:

- Device(s) that can be attached to rats for tracking, or any other tracking methodologies, and establish rat routes with timestamps and movement patterns over a period no shorter than 2 weeks
- Transmit/retrieve collected information and data, with data analysis /interpretation functionality
- Provide information on the rat nesting grounds and potential nearby food sources, information (e.g. photos/videos) on rat behaviour, its travel pattern and travel distance for food sources
- Provide a user-friendly interface for the user to visualise, understand and process the outputs into digital file format(s) for further analysis

- Proposals are to include:
  - R&D (not merely using commercial-off-the-shelf products)
  - study design of the R&D phase and validation methodology of data results
  - resource requirements and deployment strategy of the proposed methodology
- Duration of project: not exceeding 18 months
- Disbursements of fund is on a reimbursement basis, subject to project milestones and deliverables achieved
- Submission of proposals in softcopy only (signed and with organisation stamp)
  - Closing date of call: 22 May 2019, 11:00 hrs
  - Submit via email: vectorcontrol\_innovation@nea.gov.sg

# Q&A Session

For the application form and more information on the innovation call, please visit NEA's website:

http://www.nea.gov.sg/grants-awards/innovation-call-for-rat-t racking-solutions

For enquiries regarding this innovation call, please email NEA at: vectorcontrol\_innovation@nea.gov.sg



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