



## Cool Ideas Enterprise Open Innovation Challenge Statement

### A. Problem Statement/ Title:

Develop a cost-effective solution for human-less or virtual construction site monitoring by site supervisors, which can be applied to one or more of the following sites:

- I. **Building project sites:** where the site boundary is clearly defined, and there are many concurrent activities)
- II. **Precast plants:** may be located locally or overseas. the site boundary is clearly defined, and activities may be manual or mechanised)
- III. **Infrastructure sites:** where site boundary is less well-defined, and activities may be concentrated in a localised area or spread over a large one

### B. Background:

Site monitoring for these projects involves site supervisors such as Resident Technical Officers (RTO) and HDB officers walking or driving around the site to monitor site progress, such as:

- Ensuring that earth control measures are in good operations
- Monitoring potential water ponding that may result in mosquito breeding
- Observing of safety measures and proper housekeeping
- Detection of defects
- Construction quality control including placement of reinforcement

The inspectors will then consolidate the information and generate reports, which is time-consuming. These reports also do not reflect real-time progress. The expansive nature of the outdoor sites also makes it challenge for site supervisors to monitor the entire site. This is further aggravated by (i) the difficulty in employing trained RTOs (ii) the COVID19 pandemic demonstrating the importance of adopting technology for human-less site monitoring; (iii) travel restrictions to overseas locations.

Hence, HDB is looking for digital-based solutions that can significantly improve project delivery. The solution should allow for:

- Reduced reliance on labour
- More efficient site monitoring, inspection and documentation
- Real-time updates on project progress status
- Simplified data retrieval and mining process
- Data analytics and potential greater insights

### C. Technical Requirements/ Performance Criteria:

- I. User-friendly for HDB officers and end users such as site personnel
- II. Improve operational efficiency i.e. seamless and convenient
- III. Enhance the safety standards of the monitoring and inspection processes
- IV. Provide real-time updates and reduction in response time
- V. Enhance communication and collaboration between site personnel, consultants and client e.g. using customised apps
- VI. Anticipate potential issues at every stage of work for various types of projects
- VII. Demonstrate tangible time and/or cost savings in site monitoring, inspection and documentation. Comply with all relevant regulatory requirements on system development and data security e.g. audit log, login by authorised users only