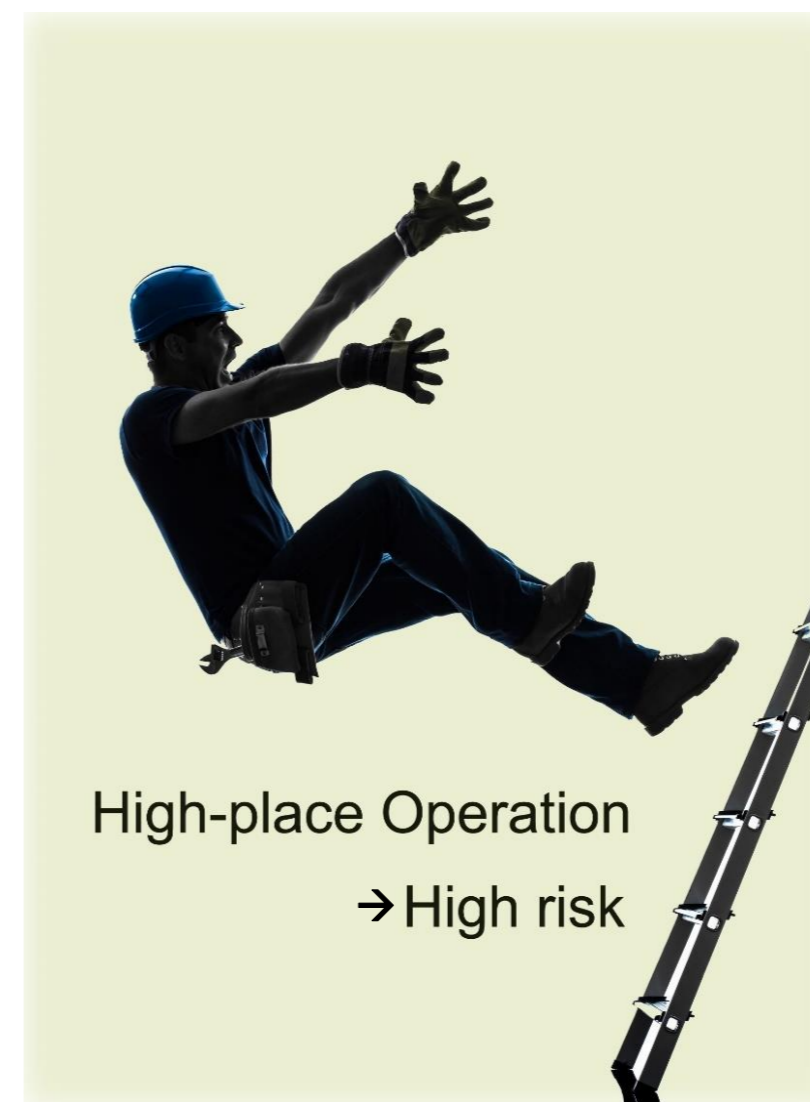




Automatic Robot System for Indoor High Rise Spray Painting

Project Motivation & Objectives



- Traditional high ceiling painting is manually done by means of ladders or hydraulic lifts.
- Disadvantages: (i) Time consuming (ii) Often results in unreliable painting quality (iii) Has lethal danger to painting workers (high-place operation up to 10 meters).
- Aims to develop a mobile robot system equipped with a novel long reach mechanism for high ceiling and wall painting applications.
- Robot will be test-bedded in a suitable construction site at the end of the project.

Methodology

- Modular design, 3D scanning imaging technology & airless spray painting technology.
- Configurable & foldable manipulator mechanism for automated long-reach spray-painting tasks.
- Automatic planning of spray painting tasks: scan, model generation and trajectory planning for painting gun.

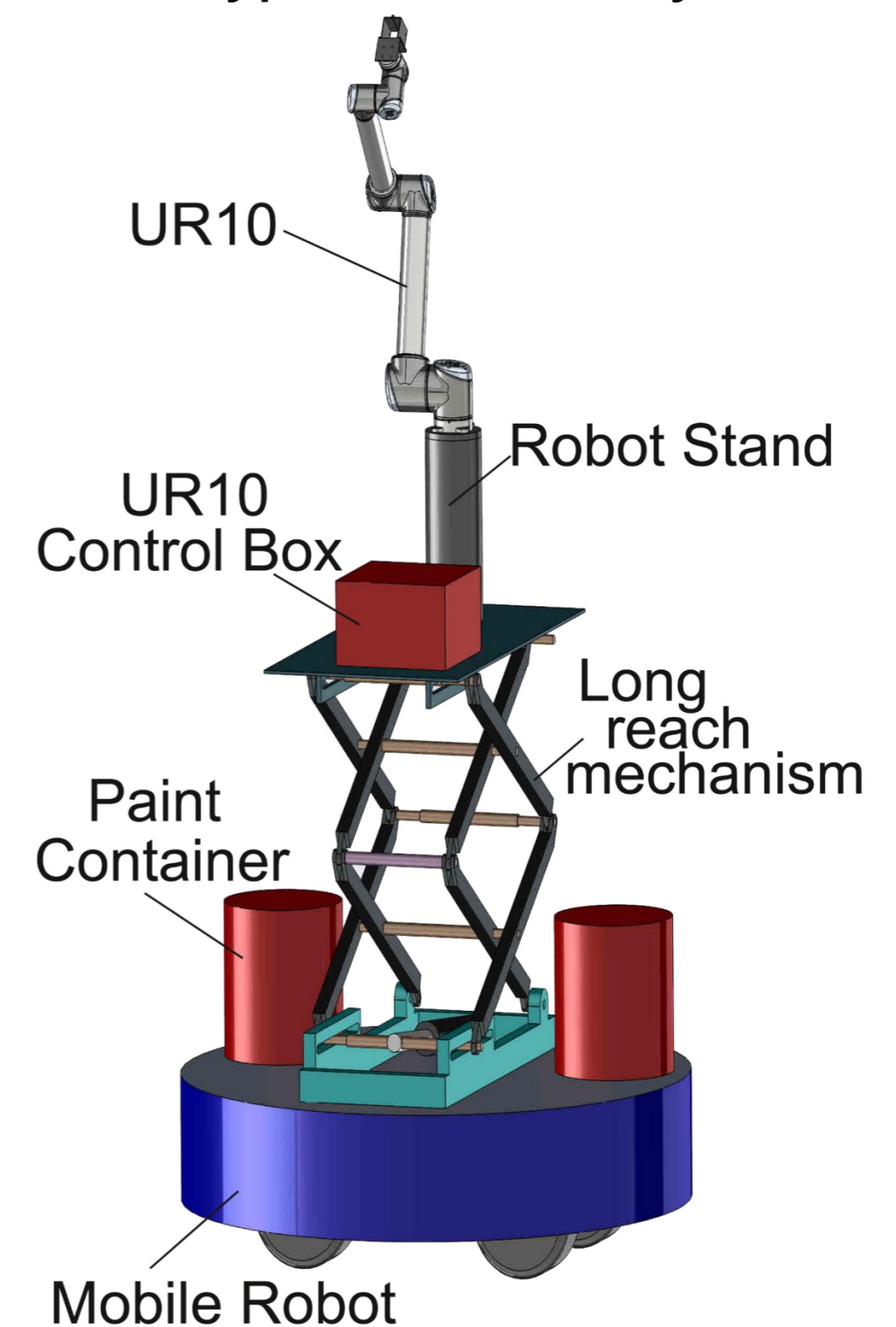
Progress

System design, 3D camera imaging recognition and airless sprayer painting are currently tested.



Airless sprayer testing

Prototype of Robot System



Principal Investigator & Co-PI:
 Prof Chen I-Ming
 Prof Low Kin Huat, Prof Yeo Song Huat
Team Members:
 Dr Ehsan Asadi, Mr Nie Jiancheng
 Mr Qiu Chen, Miss Soh Li Jing
In collaboration with
 Aitech R&D and JTC Corporation