Project ID:		**Client:**	Marc Carmichael
Project Title:	Portable Practice Processing Plant	**Affiliation:**	UTS Rover Team

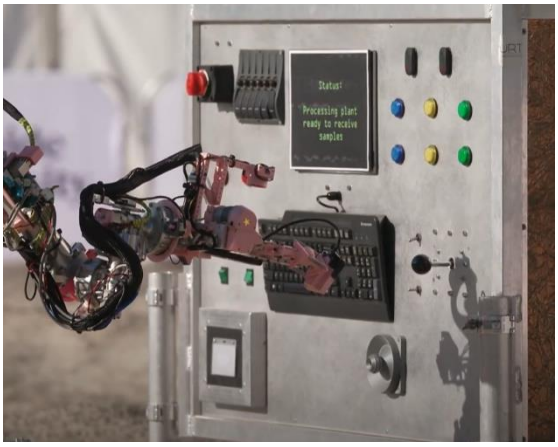
Description:

The UTS Rover Team is a student led semi-autonomous rover team that competes in the Australian Rover Challenge (ARC) every year, against 20+ teams from around the world. The 'Post Landing Task' is a challenge that tests the team's ability to interact with external systems in a lunar simulation environment, a key part of this task involves the 'Processing Plant' as shown below.

This DMMS project aims to assist the team in the preparation and practice leading up to the competition by building a practice 'Processing Plant'. This project is split into two main components, the mechanical design of a portable platform, and an embedded systems-based package.

Portable Platform: The practice Processing Plant must be easily broken down (minimal or no tools required) into a transport configuration in an SUV sized vehicle. Once set up the platform must withstand interaction with the rover without significant movement.

Embedded Systems Package: generates randomised tasks involving interaction with the keyboard, buttons, switches, and dials and reports the rover's performance in the task once completed. The generation of tasks and reporting of the Rover's performance should be communicated through a web or app-based GUI.



Deliverables:

- CAD design of portable platform
- Embedded solution for all interactive elements as listed above
- Documentation detailing the operation of data logging system and instructions for assembly and disassembly of system
- Manufacturing – once mechanical design is completed and approved complete manufacturing, testing and validation of system in conjunction with UTS Rover Team

Skills Required	Not required at all	Might be required	Some experience required	Moderate experience required	Significant experience required
Mechanical engineering				X	
Mechatronic engineering		X			
Electronics				X	
Programming				X	
Hands-on manufacturing			X		
CAD (e.g. Solidworks)			X		
Artistic Design	X				