**Transcript**

**Richard Paton:** My name is Richard Paton. I am studying a Bachelor of Electronic Engineering at La Trobe University. As part of my final year, I had to undertake a 12-month project, in which I completed a rimless wheel. The wheel is a perfect concept showing that I can produce a circular motion out of a set of linear actuators.

The rimless wheel is a one on cause function to predict the length of the next step. By doing this, I can map the area underneath the hub, producing forward motion. Reversing this process allows me to produce a backwards motion. Moving in opposite direction with each wheel produces a differential turn. And by adjusting the centre height of each hub, I can produce a slow arc. The main advantage to this system is the fact that it can level off on virtually any surface, allowing for measurements and science equipment to be placed in the centre of the hub.

(Machine sounds)

The rimless wheel is made up of two halves. Each half is driven by three linear actuators, consisting of an aluminium strut, a GT-2 timing belt and a motor, driven by a H-bridge and a microprocessor. The whole structure is held together using ABS plastic printed; all designed at La Trobe university.