

Group 4

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SMART - (Solutions to More Accessible Rail Travel)

Trinity College - 3B8 universal design and innovation – Dr. Gareth Bennett

Our mission - "To enable universally accessible rail travel"

The Problem

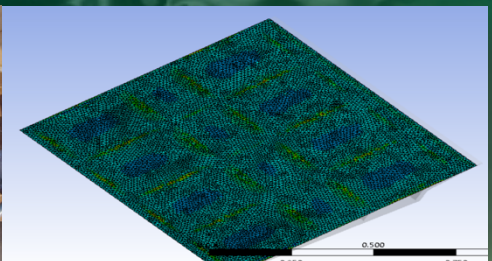
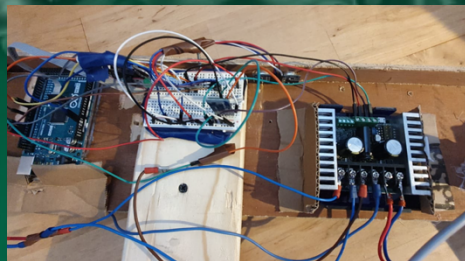


The current solution for access to Rail services for people with mobility difficulties is a manual ramp.

People affected must give up to 24 hours notice when they plan to use Irish Rail.

The current infrastructure significantly deprives these users of their independence.

Our Solution – The Autoramp



The Autonomous ramp manoeuvres into position when called upon by the user. Serial communications through a microprocessor indicates to two motors, the speed and directions they should travel.

FEA analysis our team has carried out allows for a load of up to 900kg on our ramp, giving a considerable safety factor to the ramp.



The Auto-ramp uses LED pathfinding to navigate its way to the locomotive and once it is within a sufficient distance to the train, the ramp is programmed to dead reckon exactly into position.

The ramp seamlessly falls into place on the lip of the train using a screw jack. The Auto-ramp adapts to the current rail infrastructure and increases usability for people with mobility difficulties.

Our Sponsors and Website



<https://autoramp.github.io/SMART/>

