TOP 10

N. project: L1-126 **category: Cross-modality**

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RA5

People Mobility - Systems and Services

Key Characteristics: Storage Solution • Enabling Disabled users to be more included • Hydrogen Powered •

Cross-Modality E-Bike/Wheelchair

Groningen is the cycling capital of the world, as over 60% of trips in the city centre are made via bicycle. Congestion is already starting to become a problem around the university and train station, and is more of a problem than traffic jams.

Current e-bikes are not as efficient in space or energy as they could be. Wheelchairs could be autonomous to allow disabled users to keep up with traffic flow.

The project aims at creating a foldable e-bike which has a unique folding function, allowing it to be stored/pulled along effectively, as well as an autonomous wheelchair which can keep up with traffic flow, and is better integrated within social situations, moving away from social exclusion. Also included are:

1. Sstorage point for the bike and wheelchair, which charges them simultaneously
2. Compact battery packs for swap and change function
3. Motor and Pedal Assist within the pedal axle, meaning the frame can be as thin and light as possible
4. Folding function allows it to be pulled like a suitcase
5. Small footprint allows ease of congestion. Stand is based on a tree, to allow more biophilia within the city. The stand stores both bikes and wheelchairs, and charges them at the same time. The arm lifts the bikes/wheelchairs up and down. The folding functions of the bike and wheelchair, allow more bikes to be stored
6. Wheelchair is completely autonomous, and connects to your phone. Takes you where you need to go, and allows the user to be connected within the society •