DIT045 Exemplar 4: Connected Bicycles

Fall 2017

Summary

Cycling is a great way to save fuel, costs, and get exercise. Most large cities support cyclists by providing lanes or other infrastructure, helping the city to avoid traffic congestion via cars. The rise of connected technology provides a unique opportunity to do more with our bikes. How can we use technology to keep track of and optimize our cycling? Interesting data to collect could be distance travelled, bike status (e.g., broken or worn parts), or bike location (in case of theft). Interesting data to display could be current traffic information for cyclists, predicted weather, route changes or blockages. Security information could include a notification when the bike is touched, or when the lock is unlocked. Alarms could be started or stopped remotely (like with a car alarm). Bikes could detect new riders via weight or height and the program could respond according to parameters set by the users. There are many interesting ways to take advantage of technology to enhance our cycling experience.

More Detail

There is a rise of development of “e-bikes”; electric bikes which provide some power to (partially) avoid pedalling. The idea for this product is not to (semi-)automate bike pedaling or movement, but use technology to connect cycling activities to existing technology, allowing users to measure and monitor relevant aspects (and “i-bike”). What sort of information should be collected and displayed? What sort of devices should the “i-bike” connect to? What sort of users would use it? Who else is affected by the device? Can it be used at a municipal level for city planning? Law enforcement? Should it be? How can privacy and security be protected?

Novelty

Its fine to take inspiration from existing software and tools, but the requirements for your products should finally describe something which is sufficiently unique and could be a potential competitor to existing applications. In this case the idea is to go beyond with e-bikes offer, thinking in a more connected, human-powered direction: the i-bike.

Further Information

This description is intended to give a good start on developing requirements for the potential system. It’s possible that further information or clarifications may be needed in order to model and specify the requirements. You can ask the various stakeholders involved in the domain questions using the discussion forum on GUL. Find the discussion forum for this exemplar. Ask a clarifying question, making sure that you indicate which stakeholder you are asking. The “stakeholder” will provide you an answer. Answers and responses are shared between all teams working with this exemplar.