



Bike Transponders

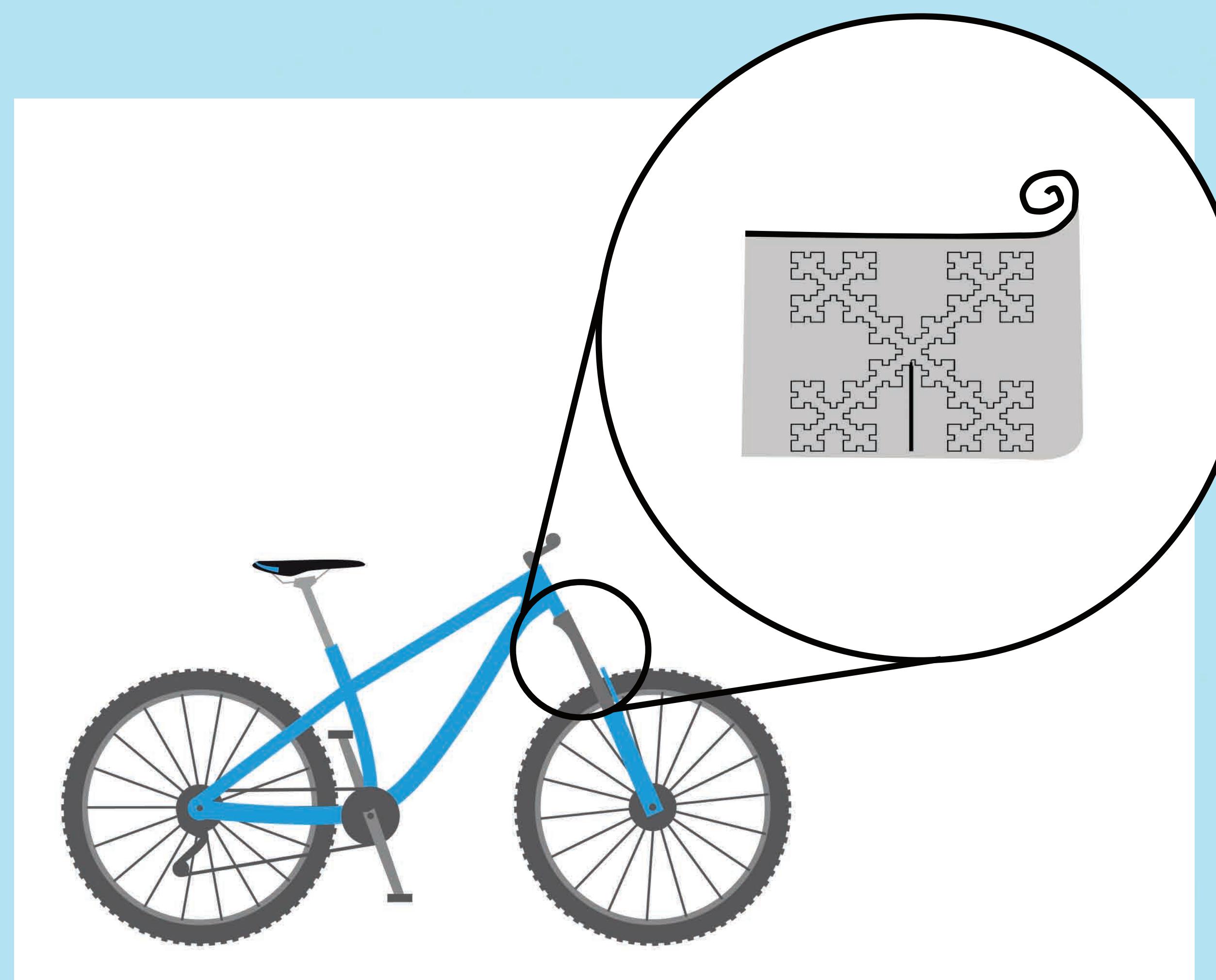
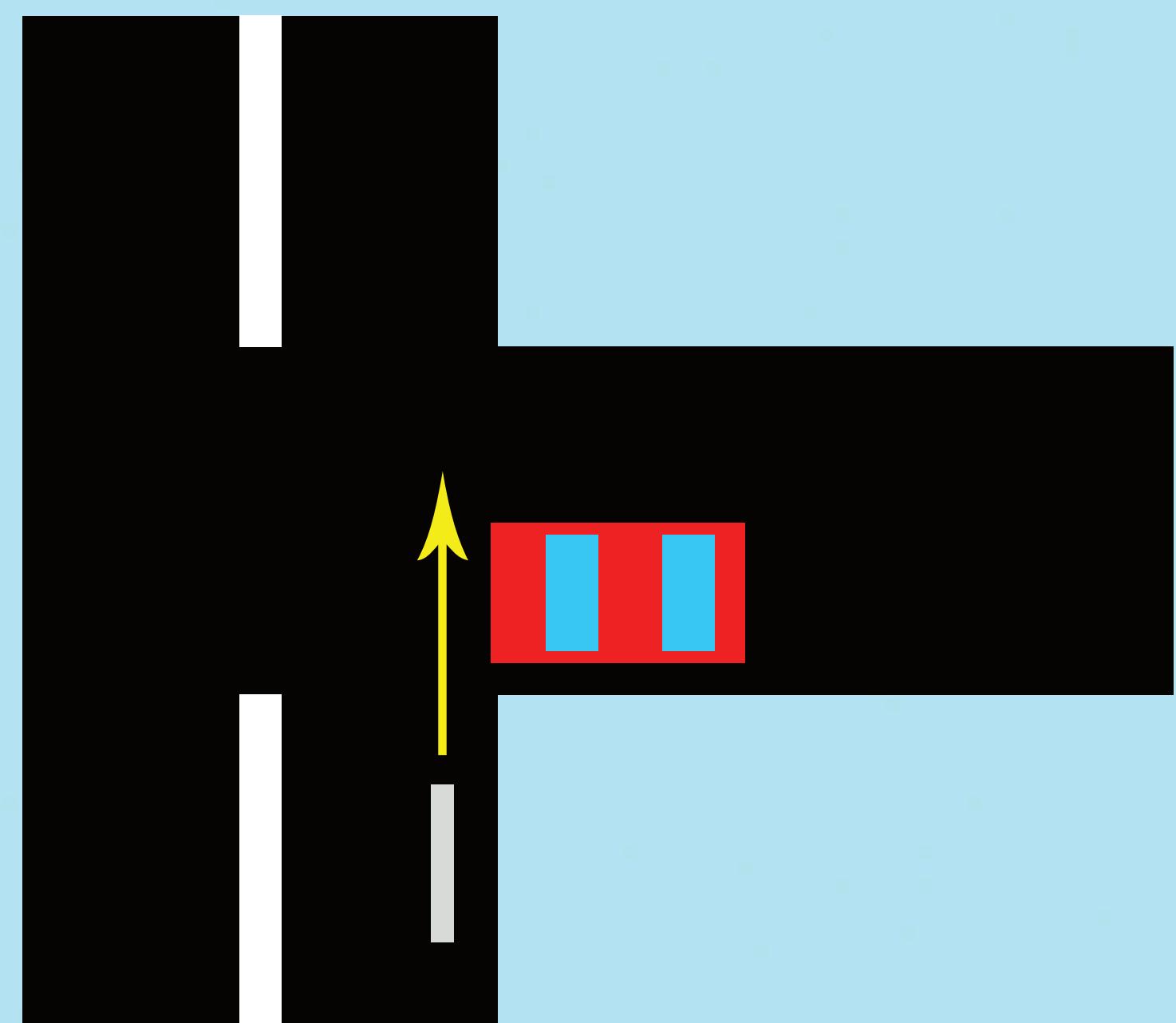
Allowing bikes and smart cars to ride together, safely

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The Problem

In 2012 there were 726 reported bike accident deaths and 49,000 injuries according to the National Highway Traffic Safety Administration(NHTSA)'s report released in 2013. A huge 21% of people riding in inter cities did not even feel safe riding a bicycle as said in a 2012 survey by the NHTSA. Bike accidents have become an epidemic in the current day. The sheer risk of being hit by a motorised vehicle has steered many potential bikers away from switching their car for a more environmentally conscious and economical bike. The recent proposal to remove stoplights will add to the number of accidents between bikers and cars as an undesirable side effect. The majority of bike accidents are caused by cars, evident when the NHTSA says this in there bike safety web-article "A large percentage of crashes can be avoided if motorists and cyclists follow the rules of the road and watch out for each other."



The Solution

A solution to help reduce bicycle and vehicle accidents is to develop a dedicated short range communications(DSRC) transponder that will be implemented into bikes or purchased by consumers. Using vehicle to vehicle(V2V) technology, cars will be able to send out a signal that will be received by a DSRC transponder on a nearby bicycle. The transponder will send a message back to the vehicle alerting the driver of a bicyclist sharing the road, how far the cyclist is, and the direction in which he/she is traveling in. The time it takes from sending a signal to the bicycle and receiving a message back from the transponder will be measured to determine both the distance from the vehicle to the bicyclist and direction of the cyclist based on the vehicle's direction. In the future, V2V communication will lead to having no traffic lights at intersections. Using the DSRC transponder, the vehicles and infrastructure will know there is a bicyclist near by and can alert other vehicles near by using V2V communication.