Self-balancing Robot

**The basic function**

2-wheel self-balancing robot which speed and orientation can be controlled. The user sets the speed and orientation of the robot using a mobile app. To prevent crashes, the robot is able to sense obstacles or holes and avoid them even though the users intent is different. When no speed or change in orientation is requested – the robot keeps balance and stays in place.

**Start of the drive function**

The self balancing function is **requested** by the user and starts as soon as the angle deviation of the vehicle is small enough to avoid overshoot. Additionally, the basic function is only started if there is enough space around the robot.

The start of the function is requested either by a pushbutton on the robot or by using the mobile app.

**Termination of the drive function**

The function is terminated in the following cases:

* the robot is lifted up,
* the angle deviation is too high,
* the termination is requested by the user via mobile app or pushbutton on the robot,
* the battery reached its critical point.

Revision:

09/08/2018: Basic function specified