Mars Robot DSL

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The Mars rover uses two separate bricks to connect all peripherals. Because of this the two bricks need to communicate about the status of the different actuators and sensors.

This communication could introduce small delays, and as stated in Section 1 the most imported requirement for the rover is that is always keeps itself safe. Therefore we propose a layout where the most important sensors related to safety are connected to the same block as the two main motors. This ensures that the robot can always keep itself safe, even when the communication between the two bricks fails.

	Brick 1	**Brick 2**
Actuators	Left Motor Right motor Measurement Motor	
Sensors	Light left Light Right Ultrasonic Front Ultrasonic Rear	Color Sensor Gyro Sensor Touch Sensor Left Touch Sensor Right

Table 1: Connection of the sensors and actuators to the Mars Rover

The touch sensor are not considered essential safety sensors as the mars rover is very sturdy and contact with blocks can already be mostly avoided by the ultrasonic sensor on the front.

If it turns out that two ultrasonic sensors on the same brick are problematic then the front ultrasonic sensor of brick 1 will be interchanged with the gyro sensor on brick 2.

3 Development process of Mars Robot DSL and corresponding Missions