

Autonomous Mars Rover

Catalysts

Ein Mars-Rover soll eine Strecke von mehreren hundert Metern autonom zurücklegen und dabei Hindernissen ausweichen.

A Mars Rover shall cover a distance of several hundred meters autonomously thereby avoiding obstacles.

Der Marssand ist sehr aggressiv. Der optimale Weg zum Ziel ist daher der kürzeste Weg.

Mars sand is very aggressive. The optimal path to the goal is therefore the shortest path.

Ein Sensor liefert Informationen über die Umgebung.

A depth sensor provides information about the environment.

Level 6

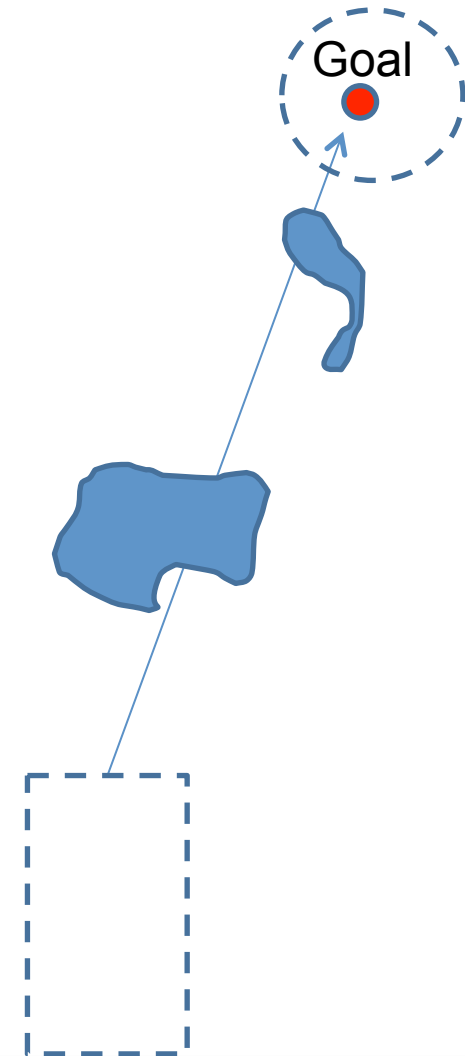
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During exploration of the planet, surface obstacles force the rover to change its path. The task is to reach a certain position (like in level 5) and drive round all obstacles that occur.

Obstacles can be large stones or rocks.

Once you connect to the Rover Simulator with your client (with map, username and contestId) you receive the rovers constraints (wheelBase and maxSteeringAngle) as well as the goal position (targetX and targetY) and the targetRadius (like in level 4)

In Level 6, the rover has a depth sensor. You receive the depth information from the sensor: 15 values covering an angle of 110 degrees.



Level 6

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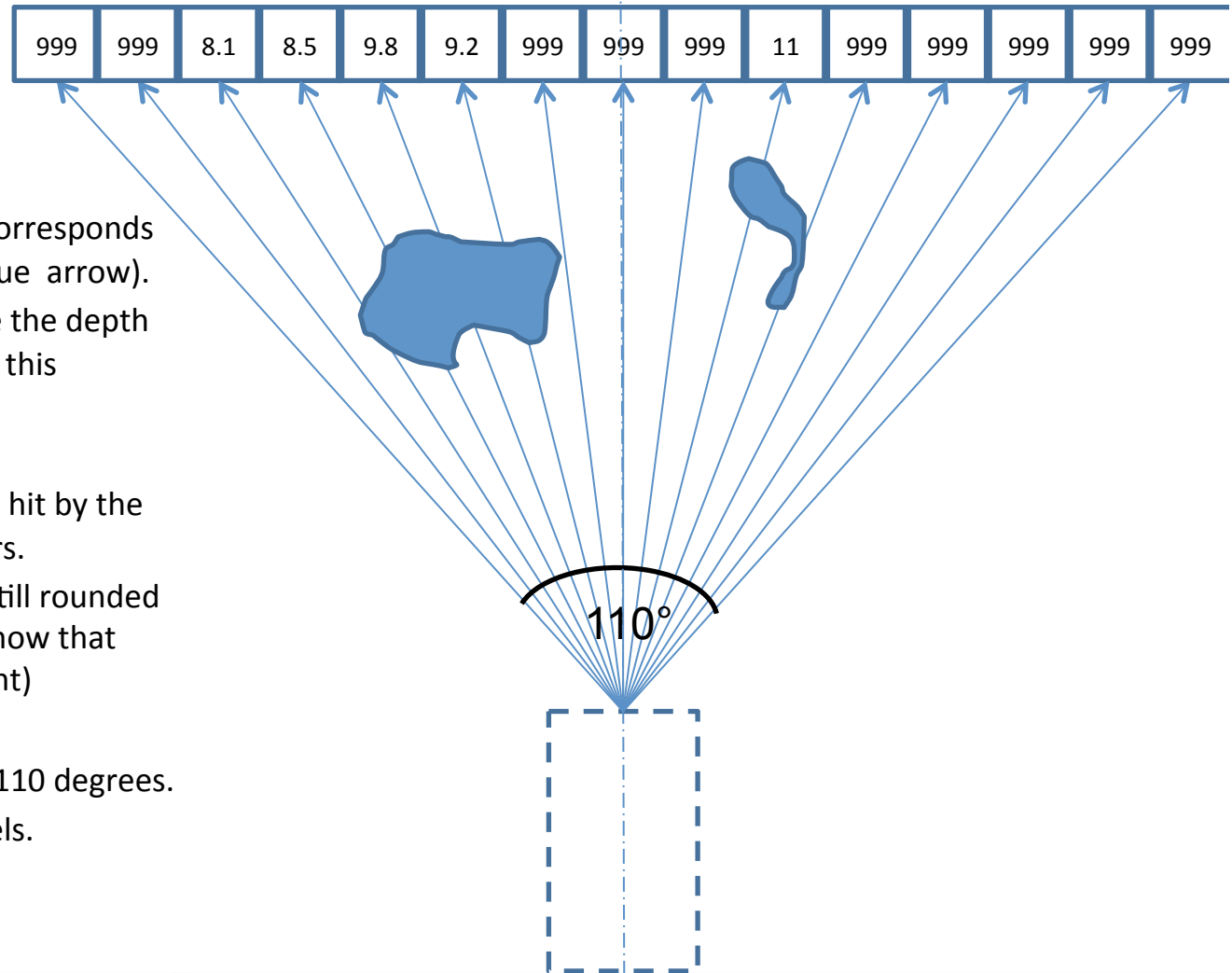
Depth Information Description:

You receive 15 values. A value corresponds to a beam (symbolized with a blue arrow). When the beam hits an obstacle the depth sensor gives you the distance to this obstacle.

999 means that no obstacle was hit by the beam within the next 200 meters.

(all floating point numbers are still rounded to two digits, even if we don't show that precision in the figure to the right)

The angle of the field of view is 110 degrees.
All beams have equidistant angles.



Level 6 – API Enhancement

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Get sensor data: [/rover/sensor/\\$UUID](/rover/sensor/$UUID)
returns: depth0 ... depth14