

# TESTING OF AUTOMATED VEHICLES

## MOBILE ROBOTS & ROBOT ARMS



*Location: FlandersMake@UAntwerpen*

## DESCRIPTION

Our mobile robots & robot arms are used as a test platform for combining data from sensors to perform an autonomous function (e.g. obstacle avoidance). Furthermore, these robots are used as a training tool for staff unacquainted with robot programming.

## TECHNICAL SPECIFICATIONS

### PIONEER P3DX MOBILE ROBOT

Motor	Two-wheel two-motor differential drive
Speed	1.2 m/s translational speed, 300°/s rotational speed
Odometry	Precise, gyroscope-corrected odometry
Laser	Hokuyo lidar sensor, 4m range
Weight	9kg
Dimensions	38 x 45 x 24cm

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## IROBOT ATRV-JR MOBILE ROBOT

Motor	Four-wheel two-motor differential drive
Speed	1.5 m/s translational speed, 120°/s rotational speed
Use	Heavy-duty design for rough terrain and outdoor use
Laser	SICK lidar sensor, 20m range
Weight	50kg
Dimensions	64 x 78 x 55cm

## ST ROBOTICS R17 5-AXIS ROBOT ARM

R17 (Deucalion) is a low-cost entry to robotics. It is a fast, accurate and reliable robot arm that is easy to program. The arm has a long reach and therefore a larger and much more useful workspace than comparable machines.

Motor	High power micro-stepped stepping motors
Reach	750mm in any direction; full 360 degree waist rotation
Payload	Nominal 750g, max 2kg (4.4lbs) at flange
Repeatability	0.2mm (degrading with increasing payload and reach)
Compliance	<ul style="list-style-type: none"><li>○ Droop at 500mm at nominal payload: 1.0mm</li><li>○ Droop at max reach, max payload: 6.0mm</li></ul>
Speed	<ul style="list-style-type: none"><li>○ Shoulder 100°/sec, Elbow 180°/sec, Waist 120°/sec</li><li>○ Around 2000mm/sec composite</li></ul>
Standard cycle time	2 seconds
Max torque for hand pitch or roll	<ul style="list-style-type: none"><li>○ 6<sup>th</sup> axis version hand pitch and yaw: 2Nm (repeatability figures degrade with increasing torque)</li><li>○ Max torque for 6<sup>th</sup> axis roll: 0.4Nm</li></ul>
Temperature range	0-30°C (wider range optional)
Power	110/240V AC 420VA (standard controller)
Weight	Robot arm 20.5kg + Controller 11kg
Finish	White powder-coat plus white vacuum formed ABS plastic covers

# TESTING OF AUTOMATED VEHICLES



## OUR OFFER

We offer these 2 mobile robots and 1 robot arm as:

- Test platform for combining data to perform an autonomous function
- Training tool for robot programming

## INTERESTED?

Contact [contact\\_Ansymo@flandersmake.be](mailto:contact_Ansymo@flandersmake.be) for more information.