

CyCab

Automated Vehicle
Outdoor Research Platform



Comercial Information

General Features

The new version of the electrical vehicle called **CyCab™** is controlled by a distributed embedded computer system based on the CAN network, providing features such as, secured manual driving or autonomous driving and route planning. Two basically noeuds will be used on the standard vehicle (one for each driving axle). These noeud can be connected to one host PC running a man machine interface.

outdoor vehicle, for road and/or all-terrain mobile robotics

- 4 driving and steering wheels (6 wheels in option)
- distributed on-board controller, based on CAN network

Applications

- Intelligent vehicles for public individual urban transport
- Teleoperated intelligent vehicles
- Outdoor platform for research

Technical Specifications

SIZE

1900 mm (75"), length
1200 mm (49"), width
1650 mm (65"), vehicle height
650 mm (25"), platform height

WEIGHT

About 350 kg (around 775 lbs),
including batteries

CLEARANCE

Floor : 13 cm (5")

LOAD

2 pers. +luggage (250 kg, 550 lbs),
4 persons (option)
up to 300 kg (660 lbs) in platform
mode

MAXIMUM SPEED

25 km/h (27 ft /s)

BATTERIES

4 sealed lead batteries

AUTONOMY

2 hours

MOTORS

4 X 1 kW , DC motors

STEERING

4 driving and steering wheels

BRAKING

4 electrical brakes, one on each
wheel

DRIVING

automatic or manual driving with a
joystick

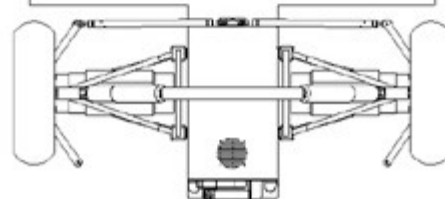
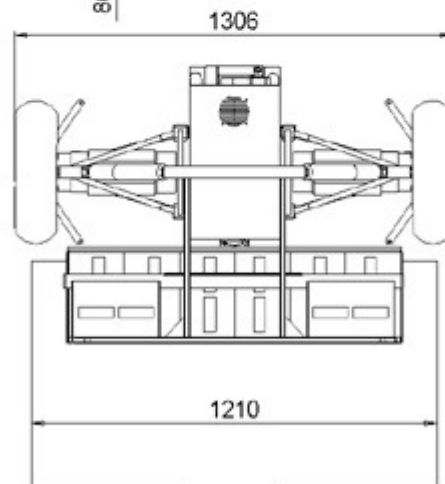
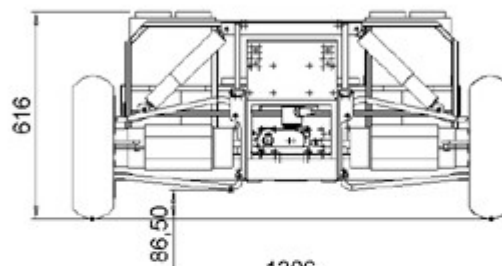
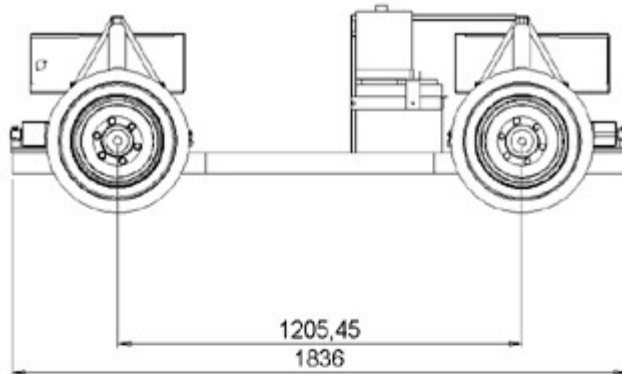
STEERING

electrical jack

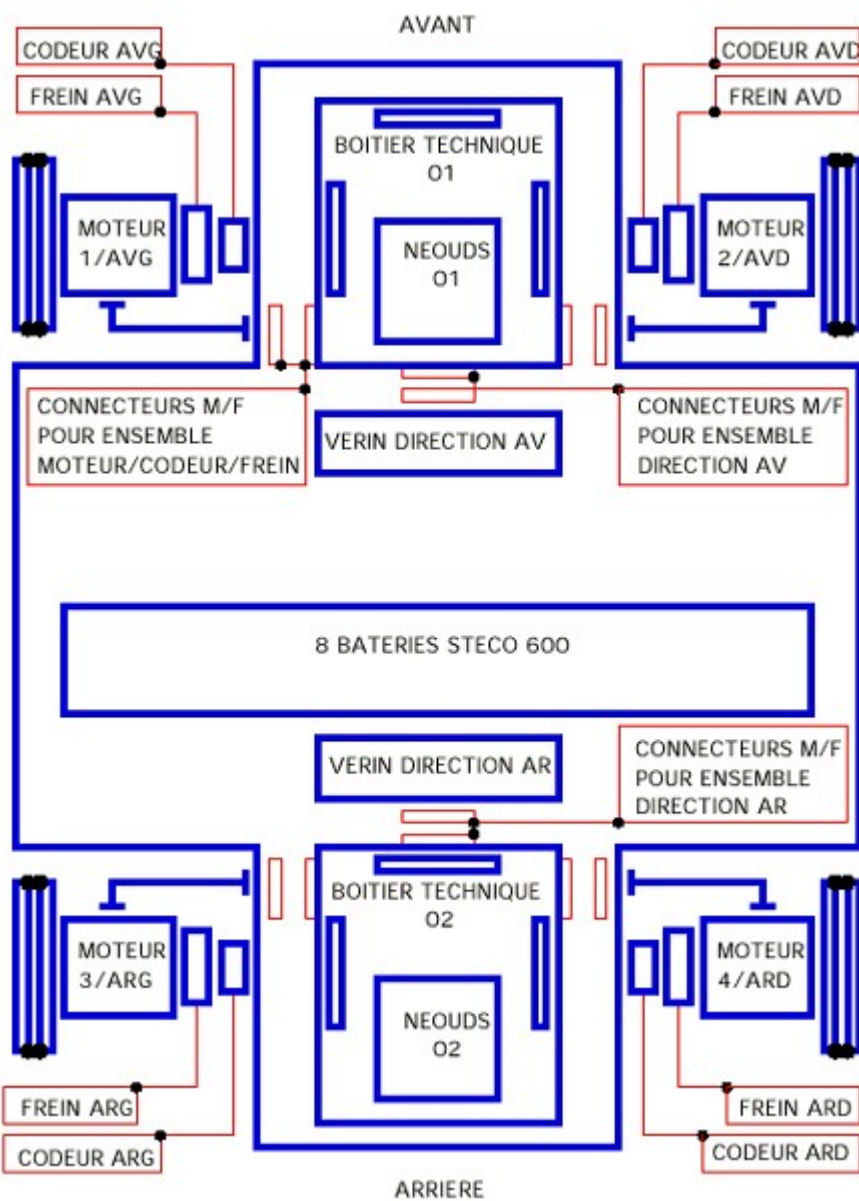
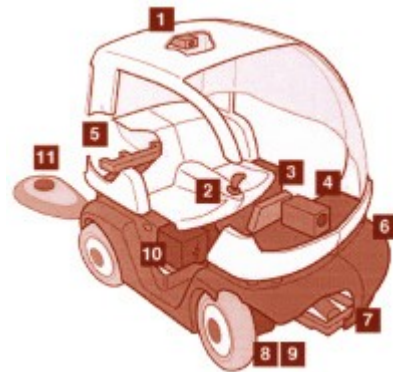
Accessories

- on-board PC with CAN interface, Windows NT
- ultrasonic sensors for obstacle detection
- linear camera used for immaterial train control (6/98)

- on-board software development tools : SYNDEX, ORRCAD ...



- 1 CCD camera for remote control (option)
- 2 joystick for manual driving
- 3 Human Computer Interface (comes with optional PC)
- 4 and 5 linear camera and infrared beacon (option, av. 6/98)
- 6 ultrasonic sensors (option)
- 7 electric jack for steering
- 8 4 driving and steering wheels
- 9 4 electric brakes
- 10 4 batteries
- 11 induction recharger (option, av. 6/98)



1. PRESENTATION GENERALE

Developer Specifications

Software development tools :

- A complete RSDP package under Linux using GNU cross-compiler is available. This package include Robosoft's library (all low level functions like encoder read, PWMwrite, ...) and some control loop routines. A standard loader through CAN port is resident on the board to allow downloading user's application from Linux. This software requires a PC with LINUX plus a CAN interface board in the PC
- For multiple boards software developments, a specific SynDEX kernel can be delivered. SynDEX is a system level CAD software, supporting the "Algorithm Architecture Adéquation" (AAA) methodology, for rapid prototyping and optimizing the implementation of real-time embedded applications on multicomponent architectures.