Software Architectural Design Requirements

# Résultat de recherche d'images pour "sambot esigelec"Introduction

A small bot on wheels needs to be designed. It should be able to move itself in an environment containing obstacles.

The obstacles can be detected and avoided thanks to an ultrasound sensor placed on a servomotor (sweeping).

Holes must be detected too with an infrared sensor (to prevent falls).

This document lists all the **requirements**, for the **software architectural design.**

Every requirement is composed of:

* One unique ID following this pattern: HLR\_XXXXX (Five digits),
* A name, which is always a small introduction of the requirement,
* A text, describing what is this requirement for.

# Software Architectural Design Requirements

HLR\_00100

Name: Moving forward

Text: The bot shall be able to move forward.

Covers: SYS\_0100

Module: Bot

HLR\_00110

Name: Turn right

Text: The bot shall be able to turn 90° right.

Covers: SYS\_0100

Module: Bot

HLR\_00120

Name: Turn left

Text: The bot shall be able to turn 90° left.

Covers: SYS\_0100

Module: Bot

HLR\_00130

Name: Move backward

Text: The bot shall be able to move backward

Covers: SYS\_0100

Module: Bot

HLR\_00200

Name: Detect obstacle

Text: When the ultrasound sensor returns a value under 8cm, an obstacle can be considered detected.

Covers: SYS\_0200

Module: Capteur\_ultrason

HLR\_00220

Name: Detect hole

Text: When the infrared sensor return a value over 4cm, a hole can be considered detected.

Covers: SYS\_0200

Module: Capteur\_infra

HLR\_00300

Name: Bot auto-pilot

Text: The bot shall be able to be set in auto-pilot mode

Covers: SYS\_0400, SYS\_0500

Module: UART

HLR\_00320

Name: Data sensors log

Text: The bot shall be able to be set in log mode

Covers: SYS\_0400, SYS\_0500, SYS\_0600

Module: UART

HLR\_00340

Name: Sweep mode

Text: The bot shall be able to be set in sweep mode

Covers: SYS\_0400, SYS\_0500

Module: UART

HLR\_00360

Name: Display command list

Text: The bot shall be able to display a list of available commands

Covers: SYS\_0400, SYS\_0500

Module: UART

HLR\_00400

Name: 2553 SPI

Text: The 2553 should be able to receive answered data from the 2231

Covers: SYS\_0400

Module: SPI

HLR\_00410

Name: 2231 SPI

Text: The 2231 shall be able to receive data sent from the 2553

Covers: SYS\_0400

Module: SPI

HLR\_00500

Name: 2553 Timer

Text: The 2553 should be able to do recurrent tasks

Covers: SYS\_0600

Module: SPI

HLR\_00600

Name: 2553 Sweep

Text: The 2553 should be able to be trigger to servmotor

Covers: SYS\_0600

Module: servomotor