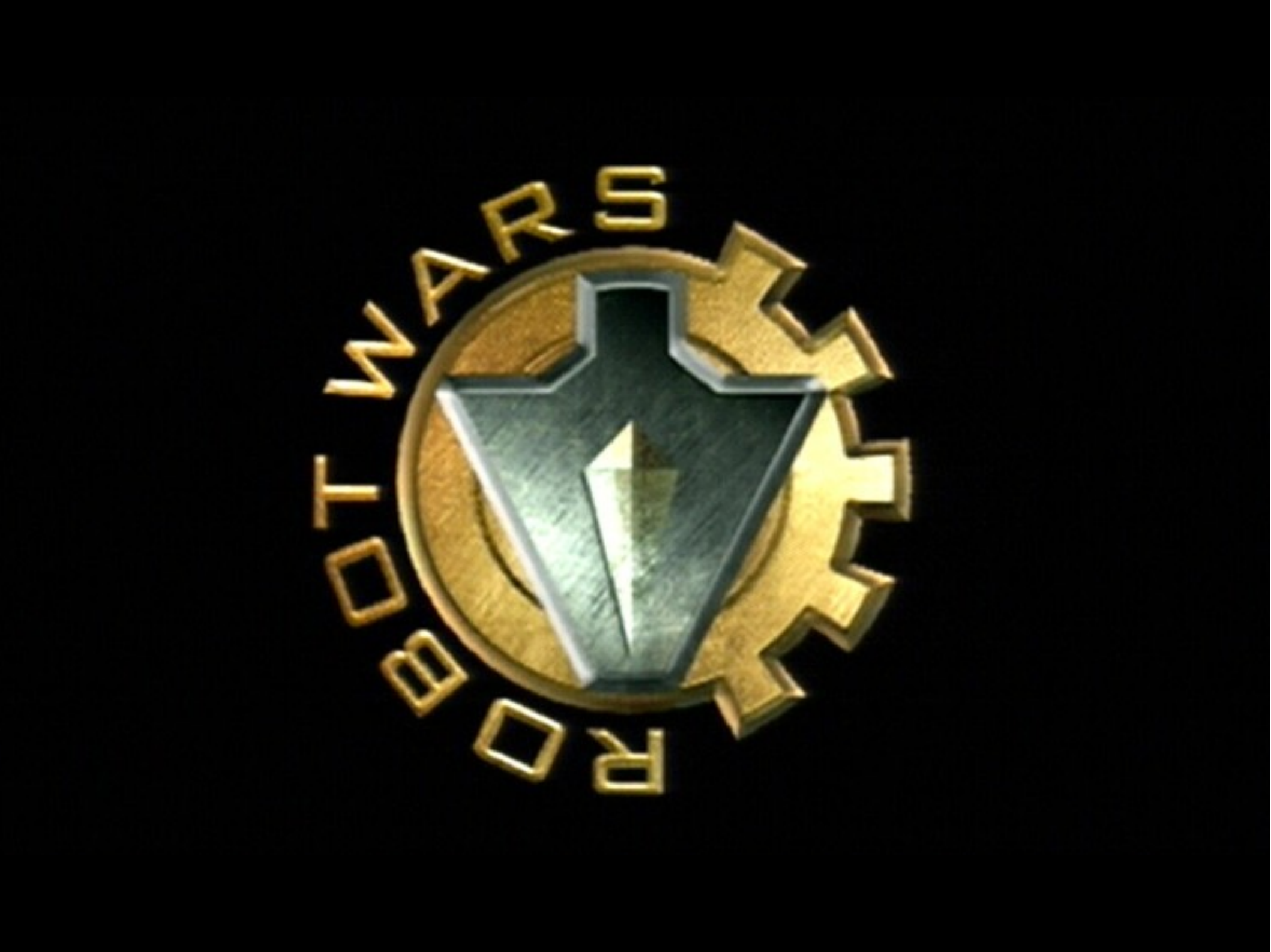
10 Years of Open-Source Robotics

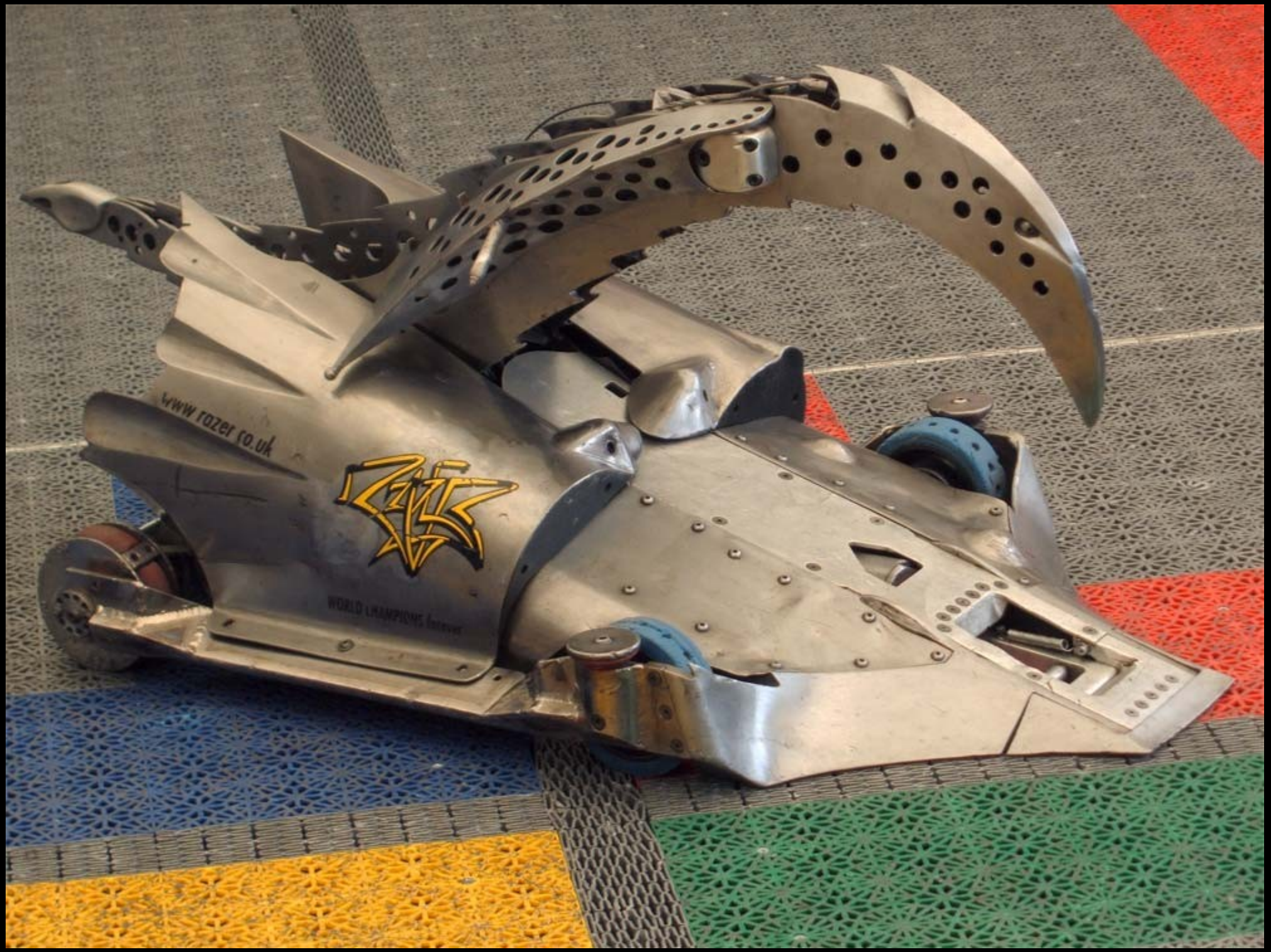
Embedded Linux Conference 2015
San Jose

Laurent Pinchart
laurent.pinchart@ideasonboard.com

RENESAS

iRobotique


ROBOT WARS


www.razer.co.uk
WORLD CHAMPIONS forever

RoboCup

Robotics
Challenge
Competition
Competition
Challenges
International
Robofest
Grand
SAURO
ABU
Micro
UAV
IARC
Donkey
RoboRAVE
European
METU
Maritime
RobotX
Engineering
ITURO
IGVC
DefconBots
VEX
IARRC
Vehicle
Eurobot
RoboCon
Flying
Road
AAAI
Foundation's
Educational
Pioneers
Maslab
Trial
Centennial
Air
Robot
Days
RoboGames
Student
FIRST
IRO
Collegiate
AUVSI
Land
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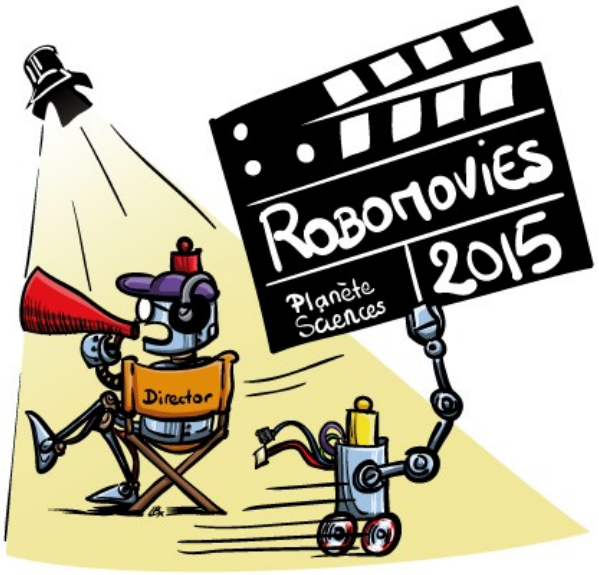
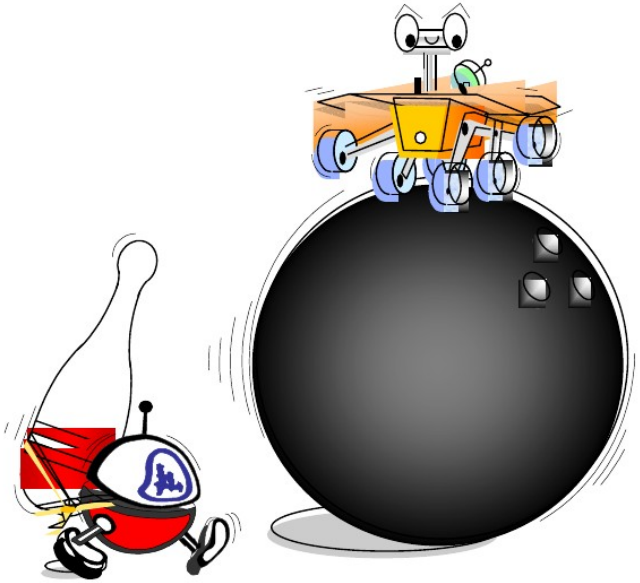
Micromouse
Botball
UBBOTS
Outback
Events
BEST
DARC
DARPA
WRO
SAUC-E
IEEE

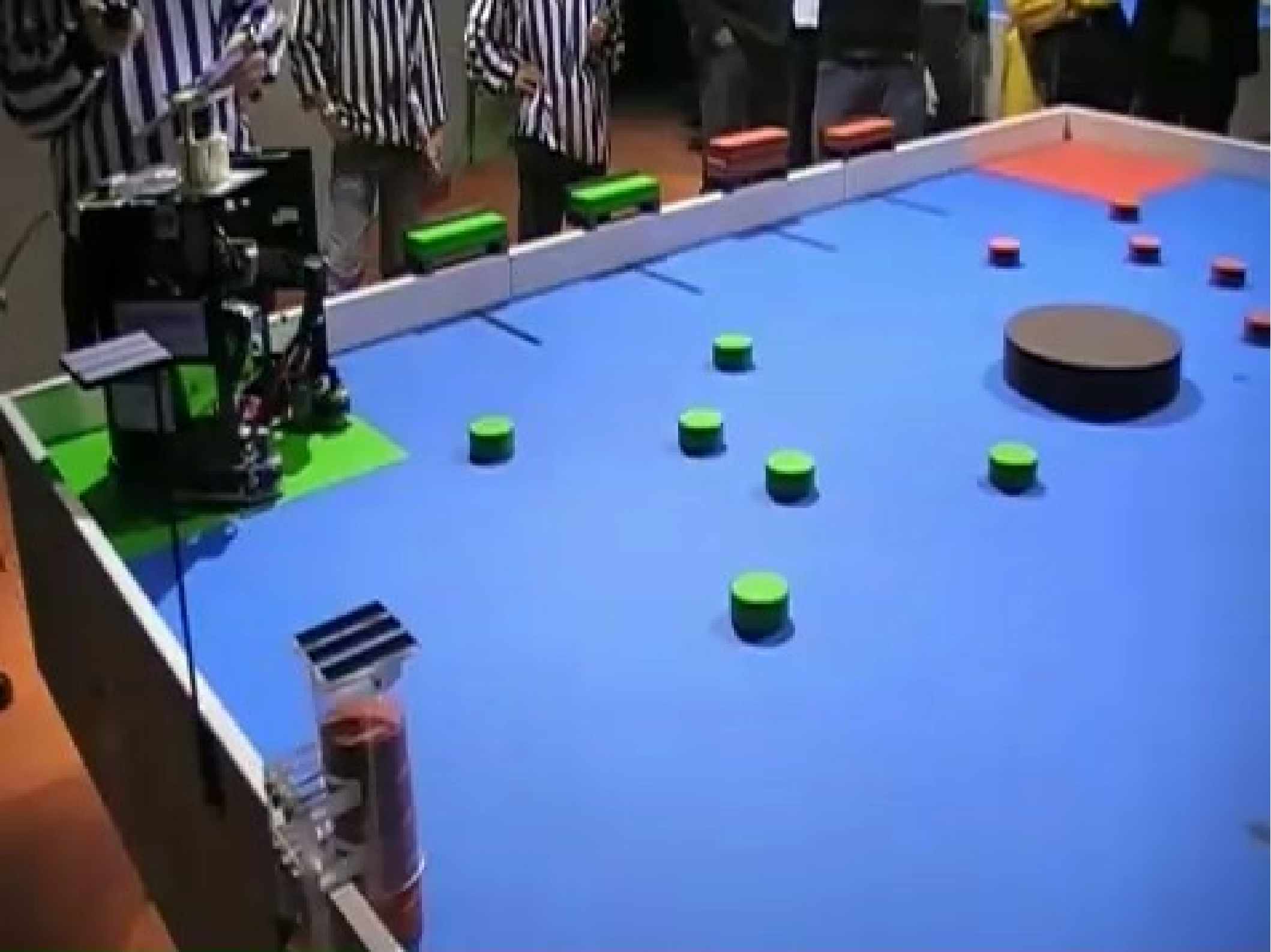
eurobot

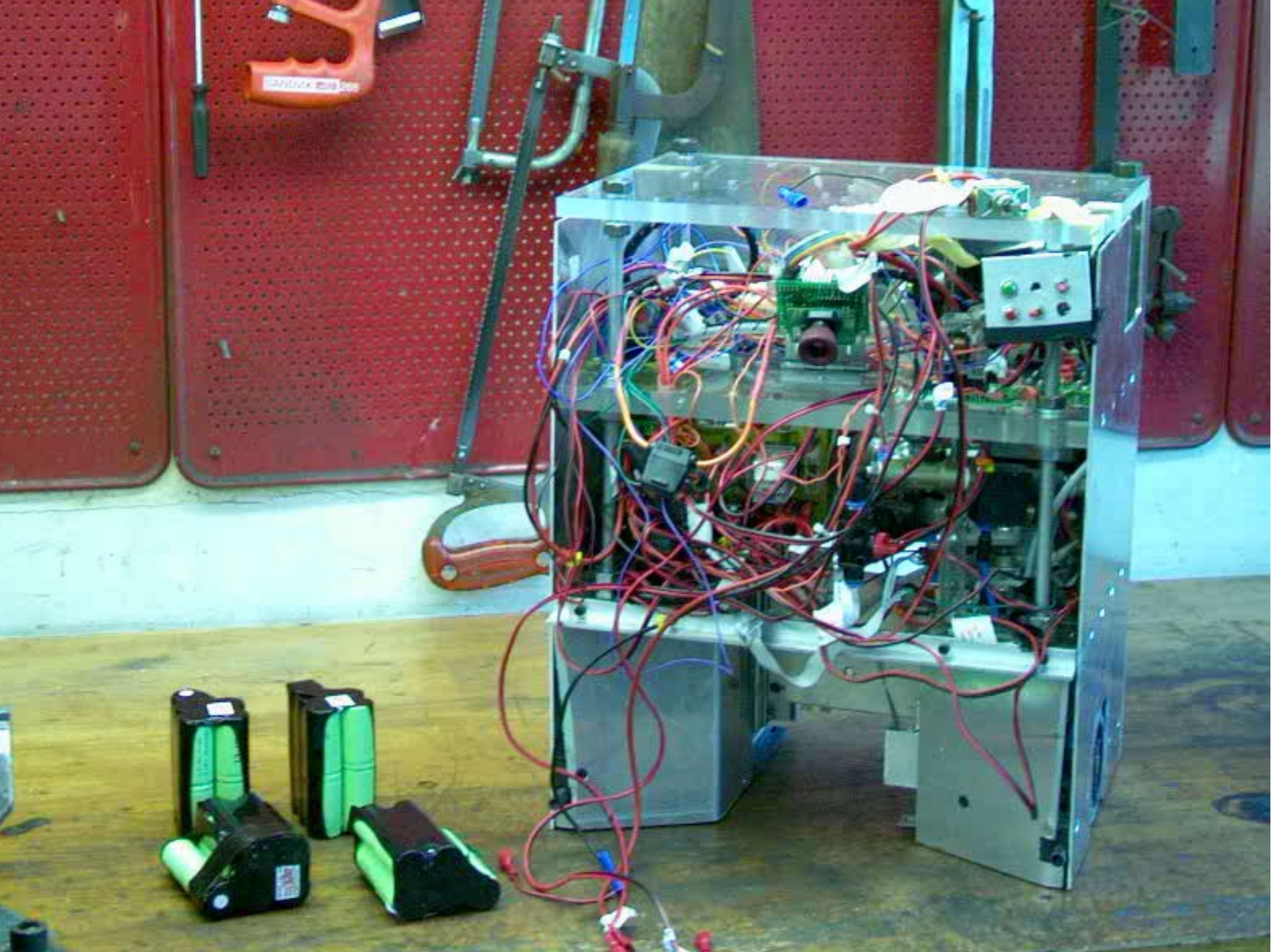

RoboMovies
2015
Planète Sciences
Director

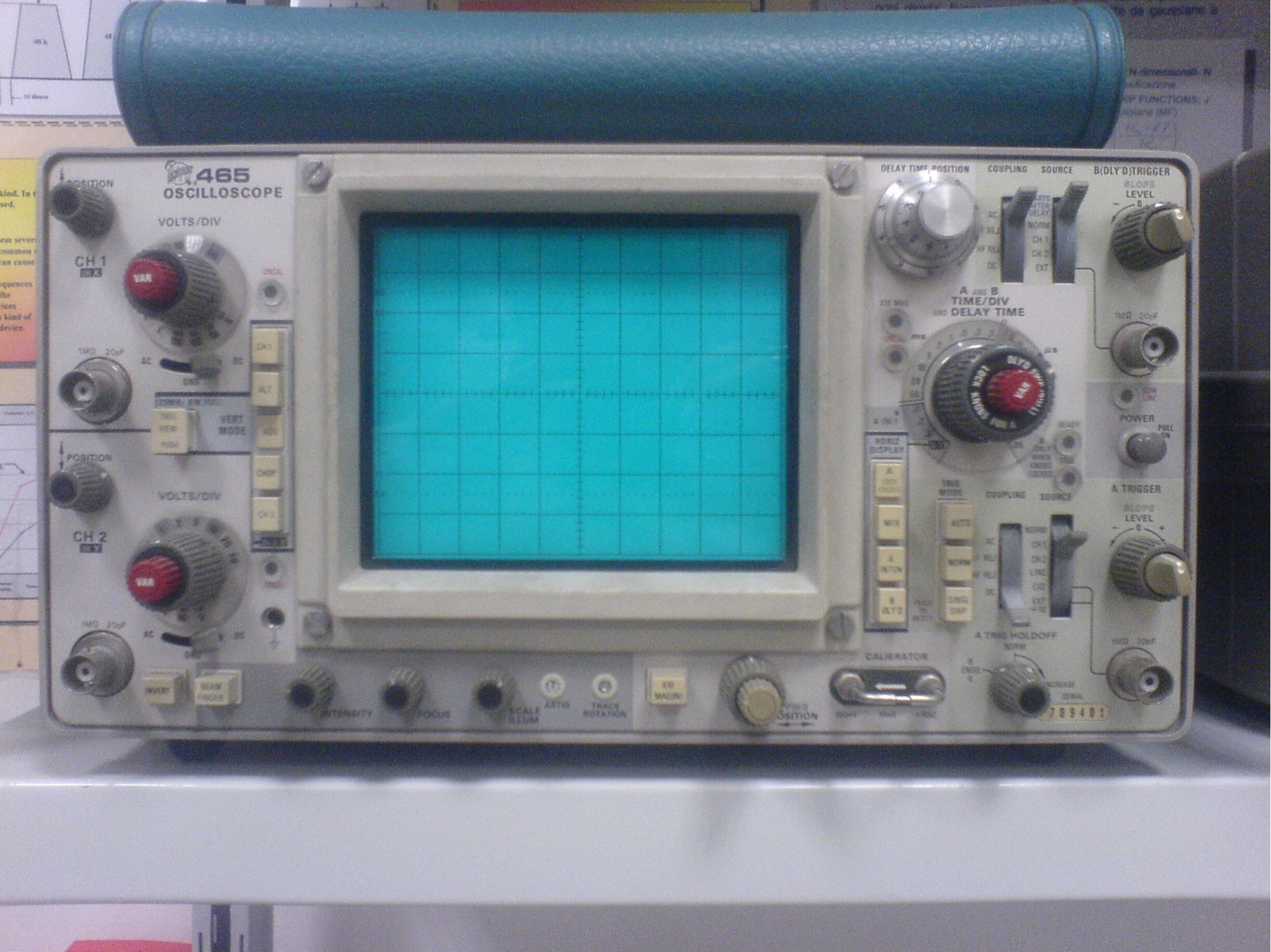
treasure
island



Feed
The World






465
OSCILLOSCOPE
VOLTS/DIV
CH 1
VAR
POSITION
VOLTS/DIV
CH 2
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VERT MODE
DELAY TIME POSITION
COUPLING
SOURCE
B(DLY'D)TRIGGER
LEVEL
A AND B
TIME/DIV
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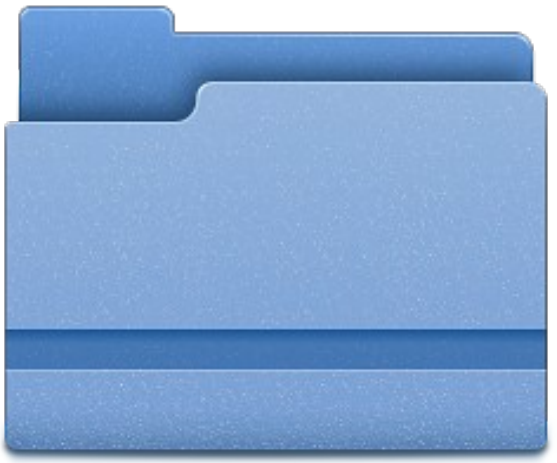
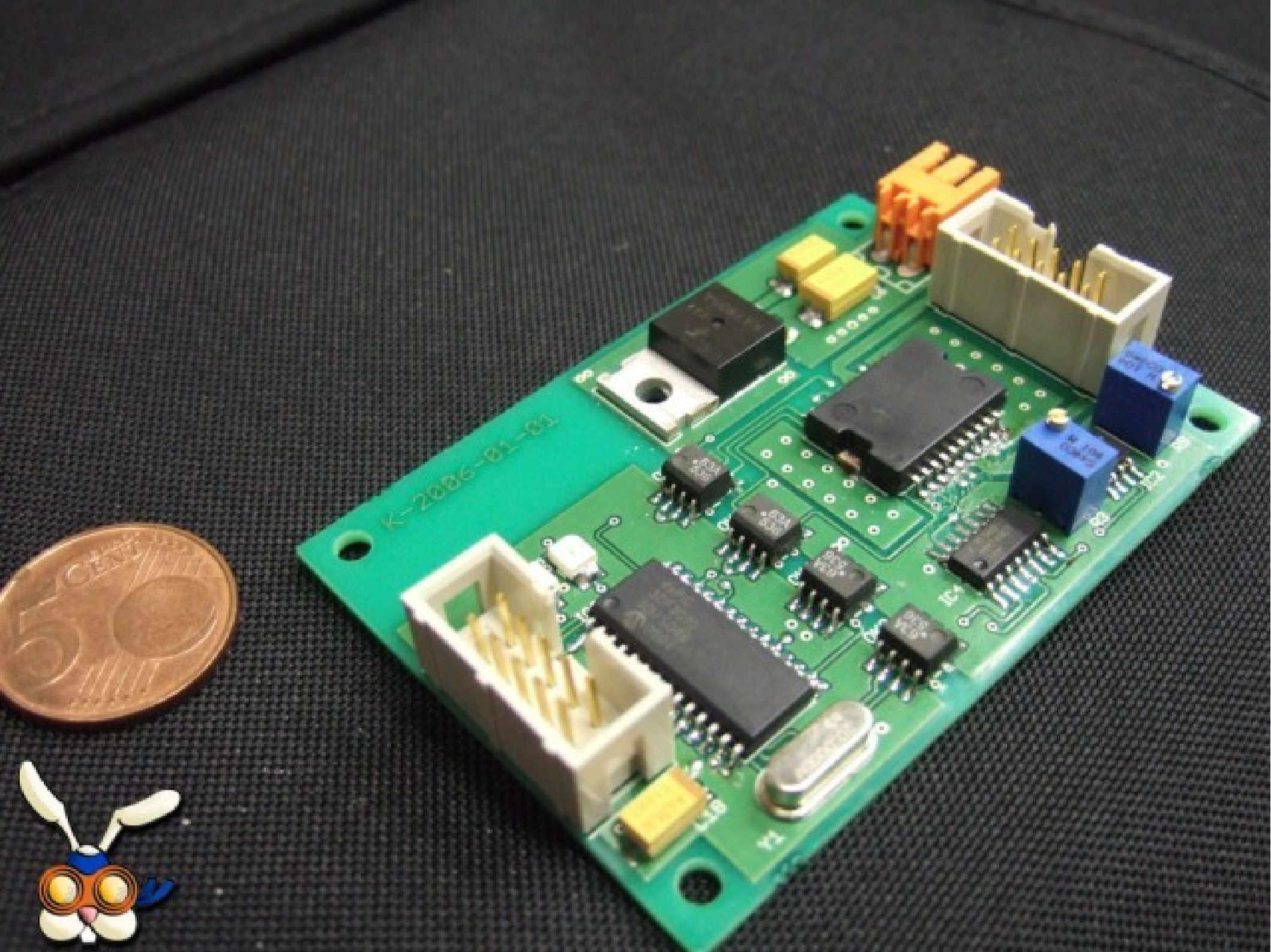
CALIBRATOR
INTENSITY
FOCUS
TRACE ROTATION

106x

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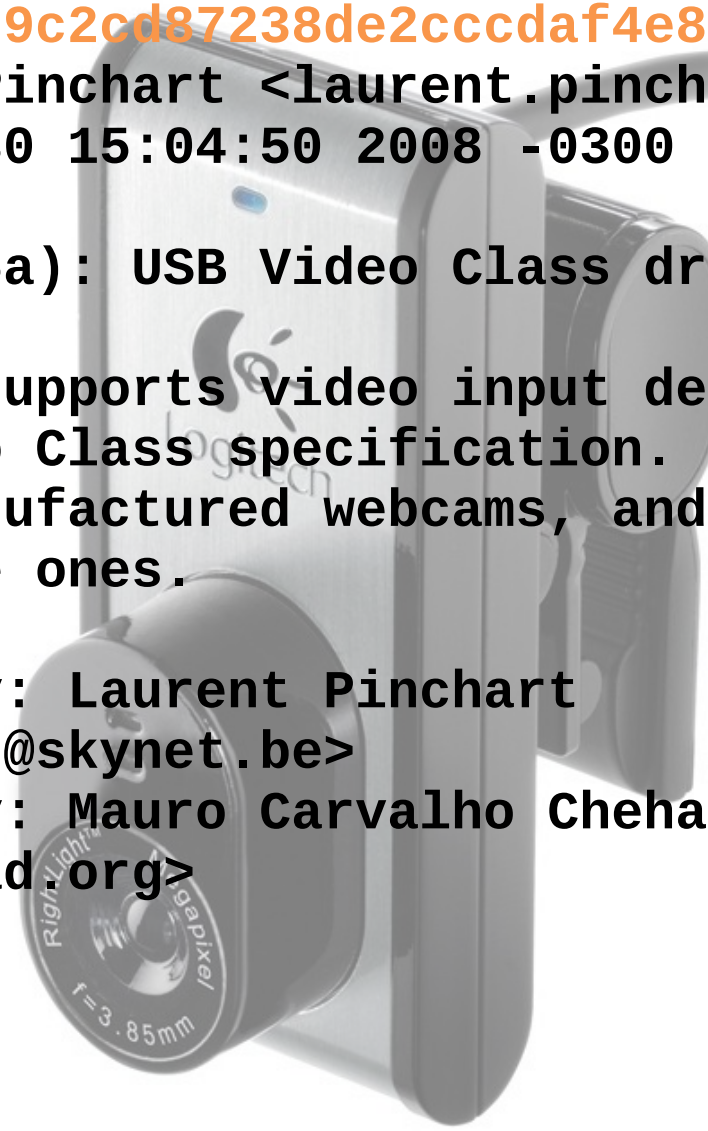

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commit c0efd232929c2cd87238de2cccdaf4e845be5b0c
Author: Laurent Pinchart <laurent.pinchart@skynet.be>
Date:   Mon Jun 30 15:04:50 2008 -0300

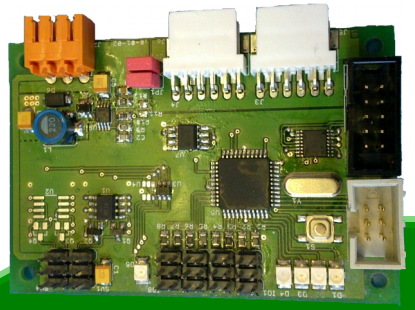
    V4L/DVB (8145a): USB Video Class driver

    This driver supports video input devices compliant with
    the USB Video Class specification. This means lots of
    currently manufactured webcams, and probably most
    of the future ones.

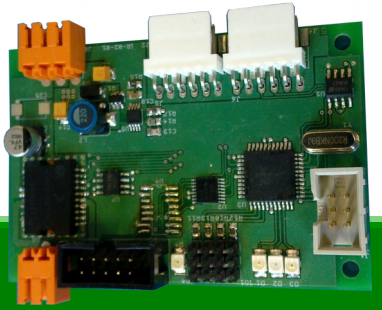
    Signed-off-by: Laurent Pinchart
<laurent.pinchart@skynet.be>
    Signed-off-by: Mauro Carvalho Chehab
<mchehab@infradead.org>
```

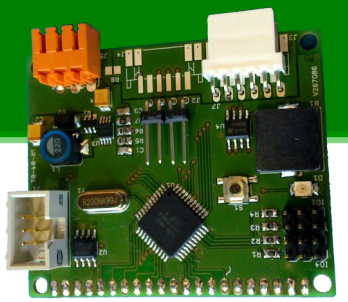
iRobotique

iR4-Neuron

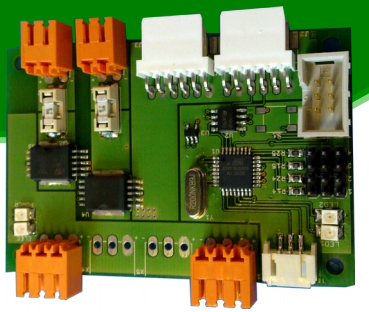


iR4-PSC

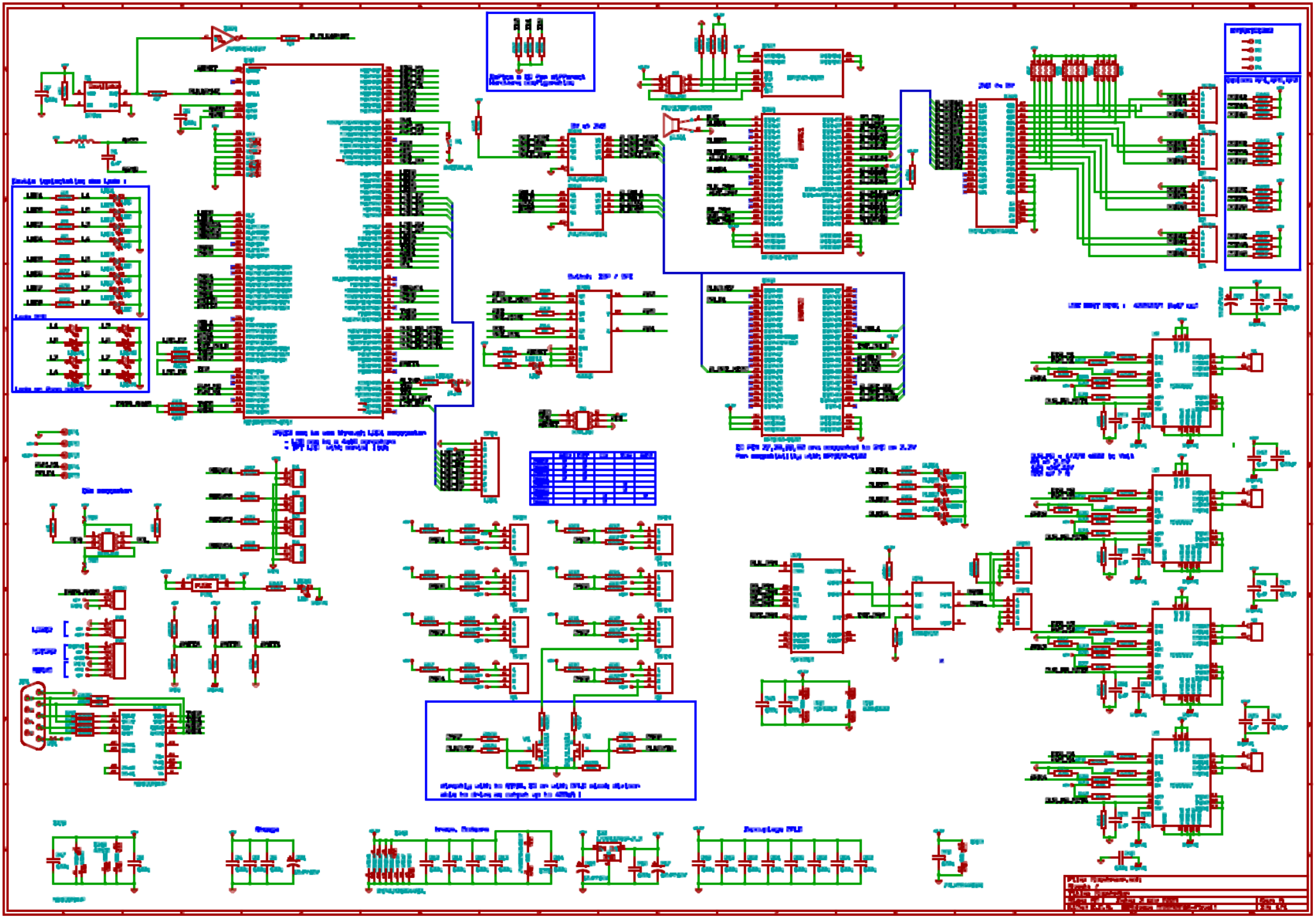




iR4-Motion



iR4-Supply



Robot programming crash course

Part 7 - Serial ports - Transmitter

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Christophe Chariot <christophe.chariot@irobotique.be>
February 16, 2010

1 Introduction

This lesson will introduce the basics of asynchronous serial communications. Two serial protocols, RS-232 and RS-485, will be explained. Students will learn how to transfer data between a computer and the microcontroller using an RS-232 link.

2 Serial communications

In computer science, serial communication is a data transfer mechanism in which data is sent one bit at a time over a communication channel. This is in contrast with parallel communication where several bits (usually a multiple of 8) are transferred simultaneously.

While it may seem than serial links are inherently inferior to parallel links because they transmit less data during the same time frame, newer serial technologies allow much higher clock frequencies that lead to higher data rates than parallel links.

Serial links are usually easier and cheaper to implement than parallel links, as they involve less interconnections and can achieve similar or higher speeds.

2.1 Synchronization

Transmitters and receivers on a serial link need to be synchronized to communicate reliably. Synchronization can be achieved by sharing a common clock between the transmitter and receiver (*synchronous transmission), or including synchronization information in the data stream (*asynchronous transmission).

Synchronous transmissions offer a greater throughput but require either an out-of-band clock or an in-band clock coupled with a clock recovery device, making the system slightly more complex and the hardware more expensive when high data rates are required.

Most microcontrollers include serial communication controllers for common asynchronous protocols and short range synchronous protocols (such as I^2C and SPI).