**MINHO Autonomous Mobile Robot Football Team**

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**ALGORITMI research centre**

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**RoboCup Initiative**

- 1993 - Idea, objectives, initial rules
- 1997 - Nagoya
- 1998 - Paris
- 1999 - Stockholm
- 2000 - Melbourne
- 2001 - Seattle
- 2002 - Fukushuka
- 2003 - Padova
- 2004 - Portugal

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**Field**

<table>
<thead>
<tr>
<th>Environment</th>
<th>Chess</th>
<th>RoboCup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Static</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dynamic</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>State Change</th>
<th>Turn taking</th>
<th>Real time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incomplete</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Info. accessibility</th>
<th>Symbolic</th>
<th>Non-symbolic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Central</td>
<td>Distributed</td>
</tr>
</tbody>
</table>

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**Vision / Software**

- Robots Software
- Remote system Software

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**Motor Control Board:**

- Microcontroller
- Motor Driver
- Motor Driver

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**KICKER**

The kicker consists basically of an electric coil with a movable core made up with different materials. The iron part is mostly outside the electric coil and the coil is mostly inside the iron core. The coil has 200 turns of insulated aluminum wires (AWG 22). The wires are connected to the PC through the 3A410 inverter board. The inverter board receives orders from the PC and controls the analog/digital converters between the converters and the PC. The microcontroller works as a logic unit to power the motors, kicker and more electronics.

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**Data acquisition board**

The board uses two analog/digital converters, to translate the voltage, the output-computations to install the electronics and one microcontroller to interface between the converter and the PC. The microcontroller works as a logic and which receives orders from the PC and controls the analog/digital converters.