

# ÁREA CIENTÍFICA DE CONTROLO, AUTOMAÇÃO E INFORMÁTICA INDUSTRIAL



# ÁREA DE ESPECIALIZAÇÃO SISTEMAS





**Sistemas mecânicos complexos exigem sistemas de controlo inteligentes**





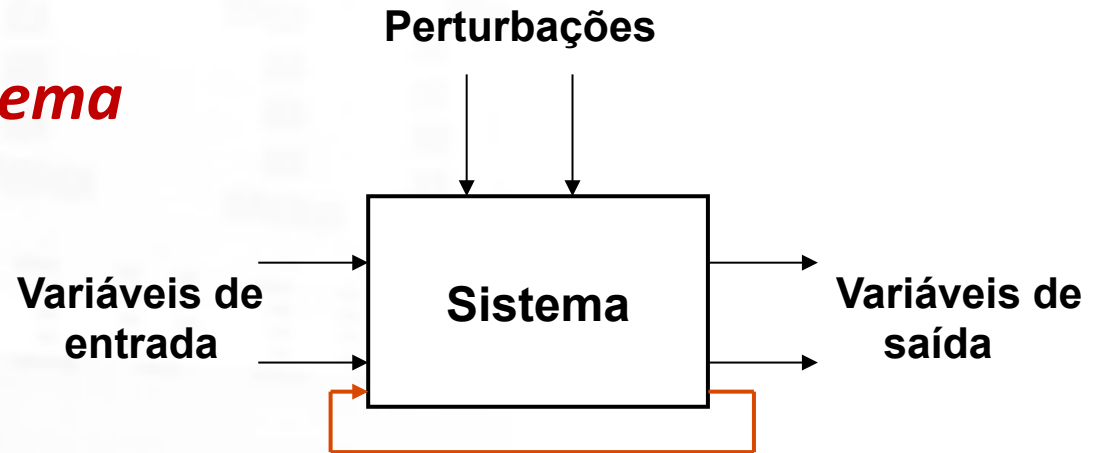
**Sistemas de produção complexos exigem sistemas de controlo inteligentes**



- Visão **multidisciplinar** da **Engenharia Mecânica**
  - **Projecto, Produção, Energia, Controlo e Automação**
- **Interdisciplinaridade** – ligação da **Engenharia** a:
  - **Gestão** (ex: cadeia de abastecimento, logística)
  - **Medicina** (ex: robótica cirúrgica, análise de doentes na UCI, estudo de células de HIV)
  - **Ciências Sociais** (organização de sistemas complexos, tais como hospitais, aeroportos,...)
  - Etc, etc...

## ■ **Objectivo**

### ■ Conceito de **Sistema**



- **Perspectiva sistémica** na análise dos problemas de engenharia
- **Visão integrada** na concepção, projecto e soluções de problemas de engenharia
- Capacidade de **inovação e empreendedorismo**

## 4º ano – 1º Semestre:

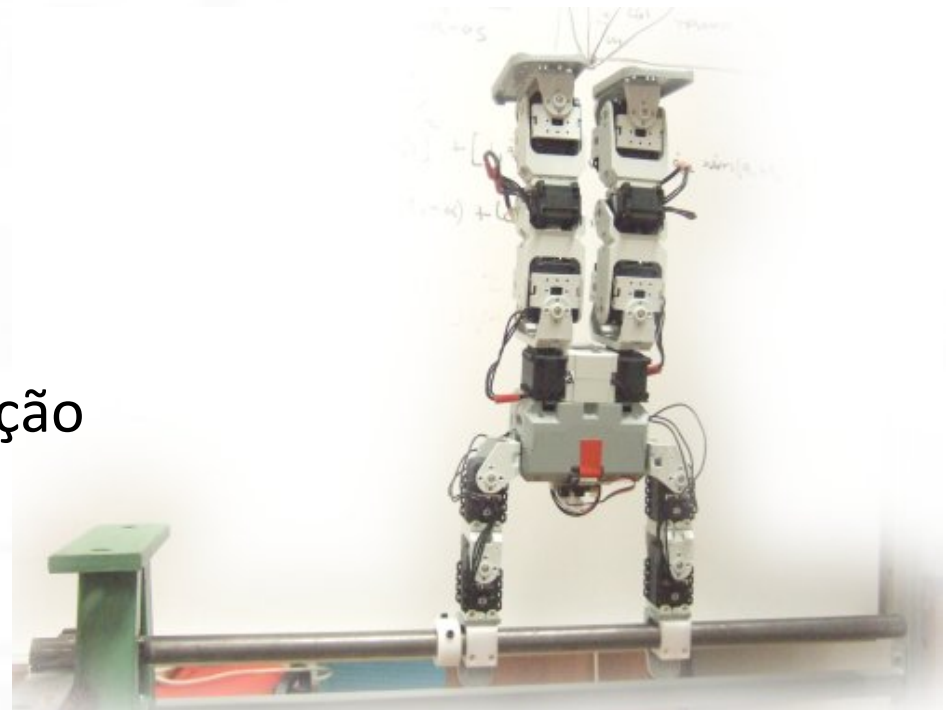
- Identificação de Sistemas

## 4º ano – 2º Semestre:

- Controlo Óptimo
- Robótica de Manipulação
- Controlo Integrado da Produção

## Disciplina de opção:

- Optimização e Decisão

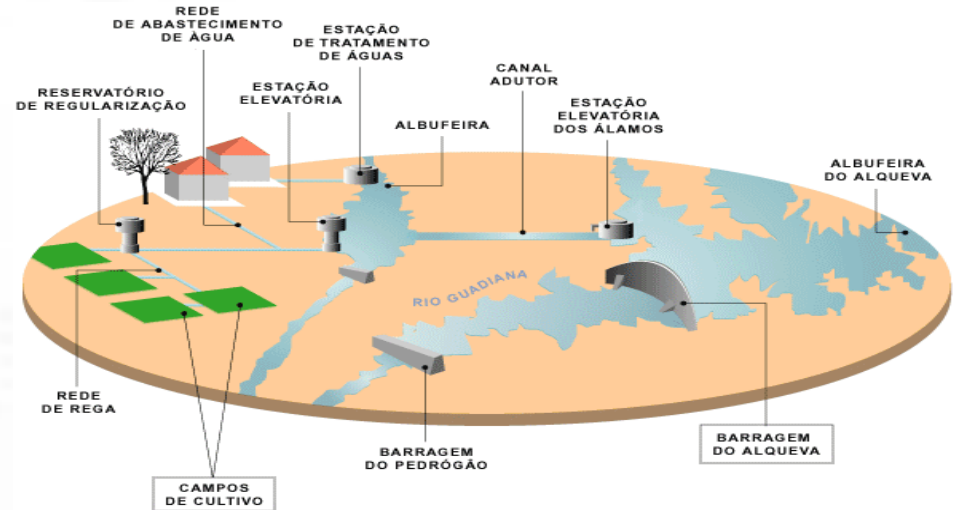


## 5º ano – 1º Semestre:

- Sistemas Inteligentes
- Visão Computacional

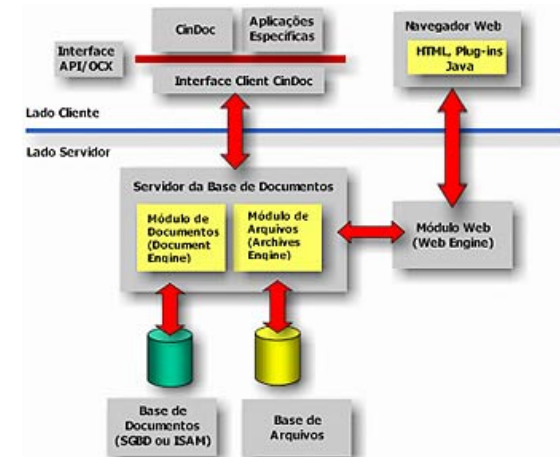
## Disciplinas de opção:

- Sistemas Mecatrónicos
- Programação por Objectos e Bases de Dados



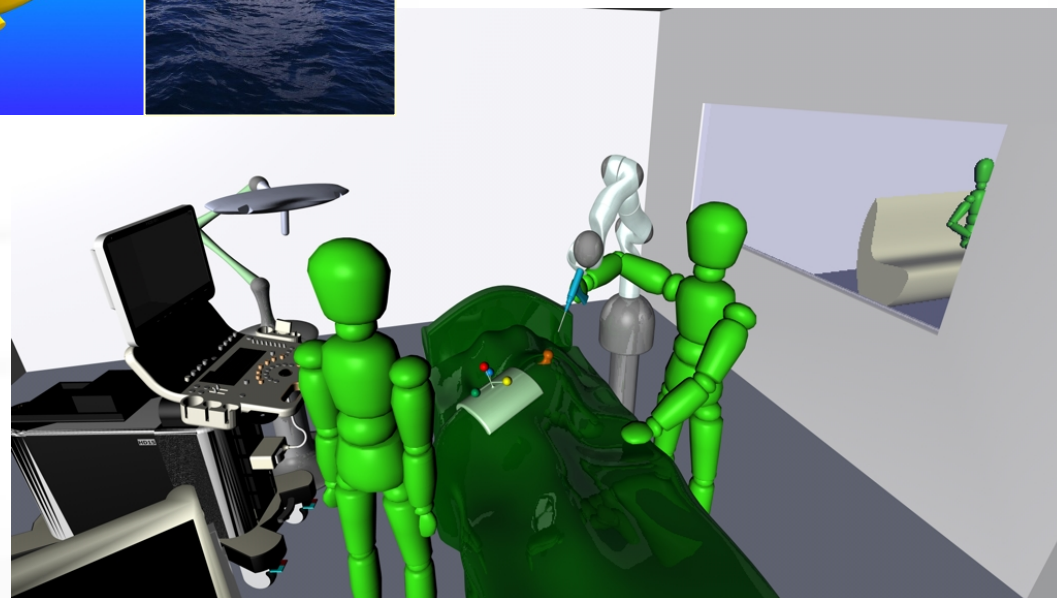
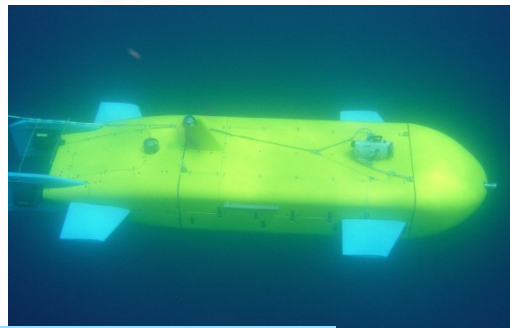
## 5º ano – 2º Semestre:

- Dissertação de Mestrado



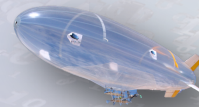


## ■ Robótica





# ROBÓTICA MÓVEL AÉREA



Desenvolvimento de soluções de controlo para a navegação autónoma de diferentes plataformas aeronáuticas.

## Quadri-Rotores



## Dirigíveis



Área Científica de Controlo, Automação e Informática Industrial

Desenvolvimento de soluções de controlo para a navegação autónoma de diferentes plataformas submarinas.

## SIRENE

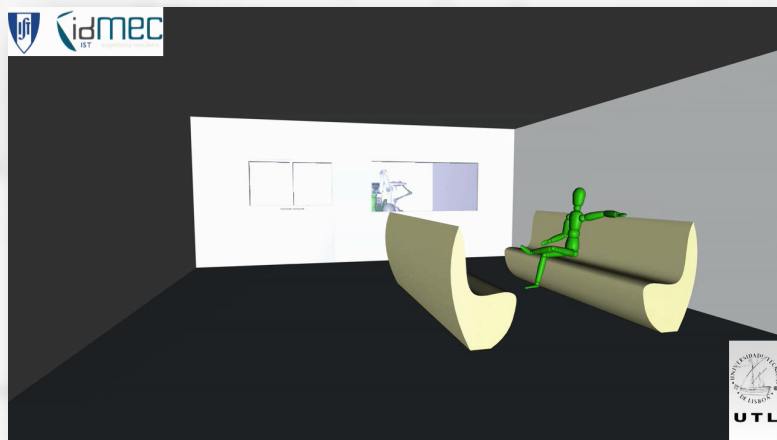


## MARIUS



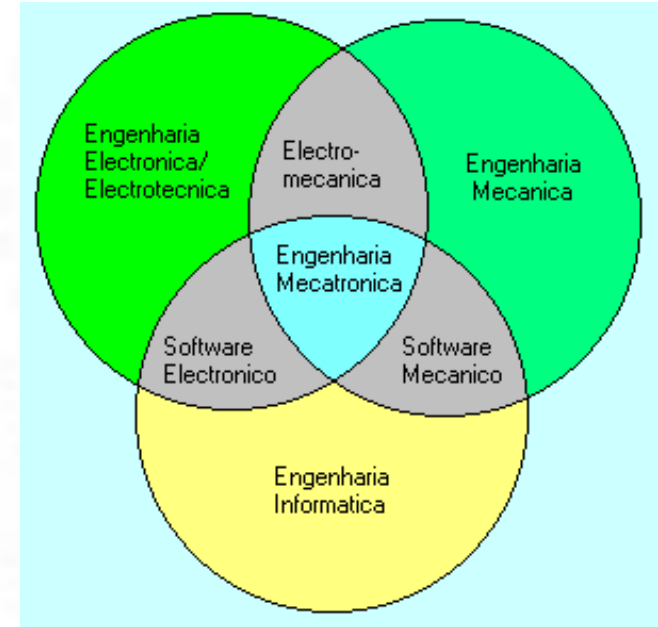
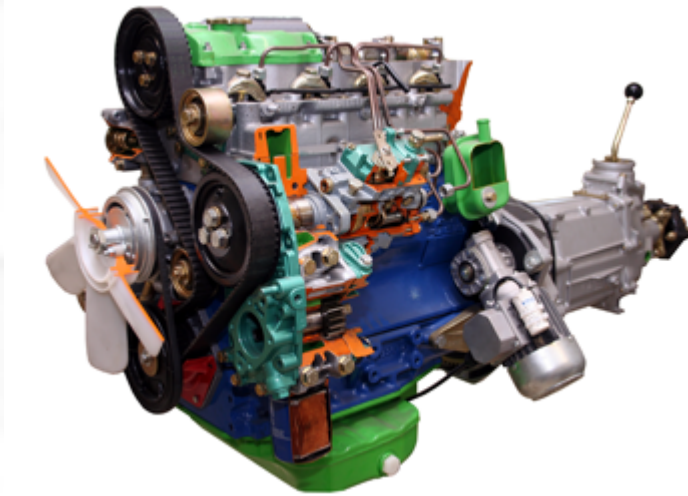
Área Científica de Controlo, Automação e Informática Industrial

**HipRob – Cirurgia assistida por robô e guiada por ultrassons para artroplastia de substituição da superfície da anca.**

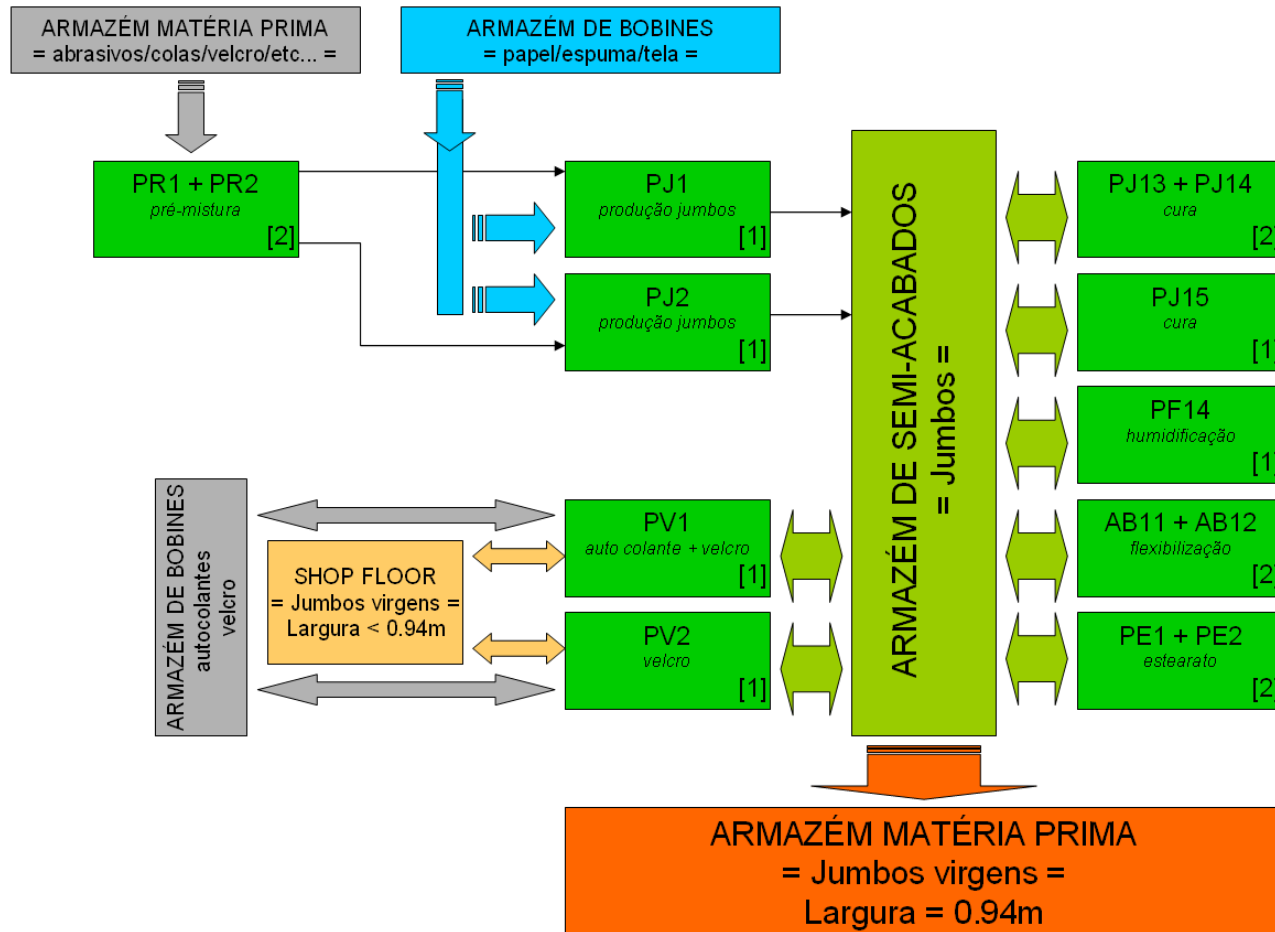


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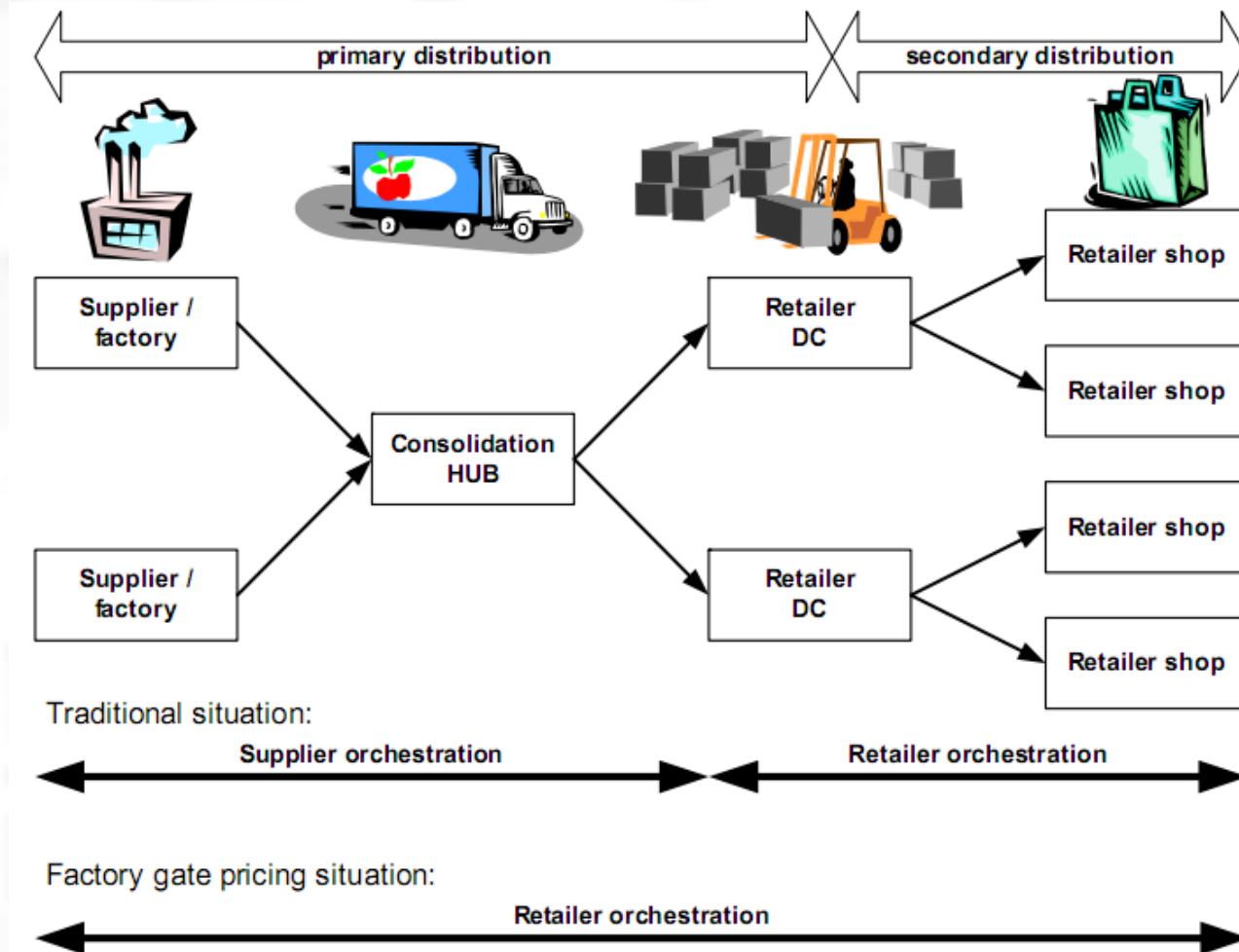
## ■ Projecto de equipamentos



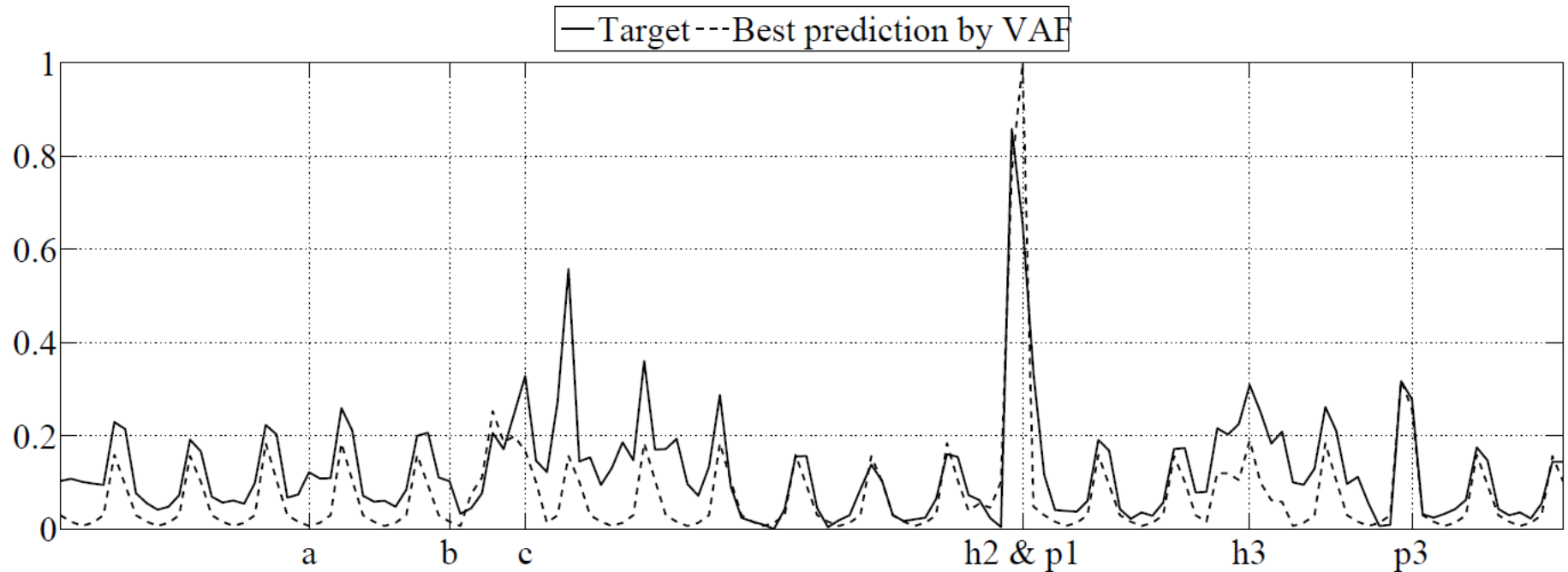
## ■ Simulação e optimização fabril



## ■ Modeling an alarm system for retail supply chains

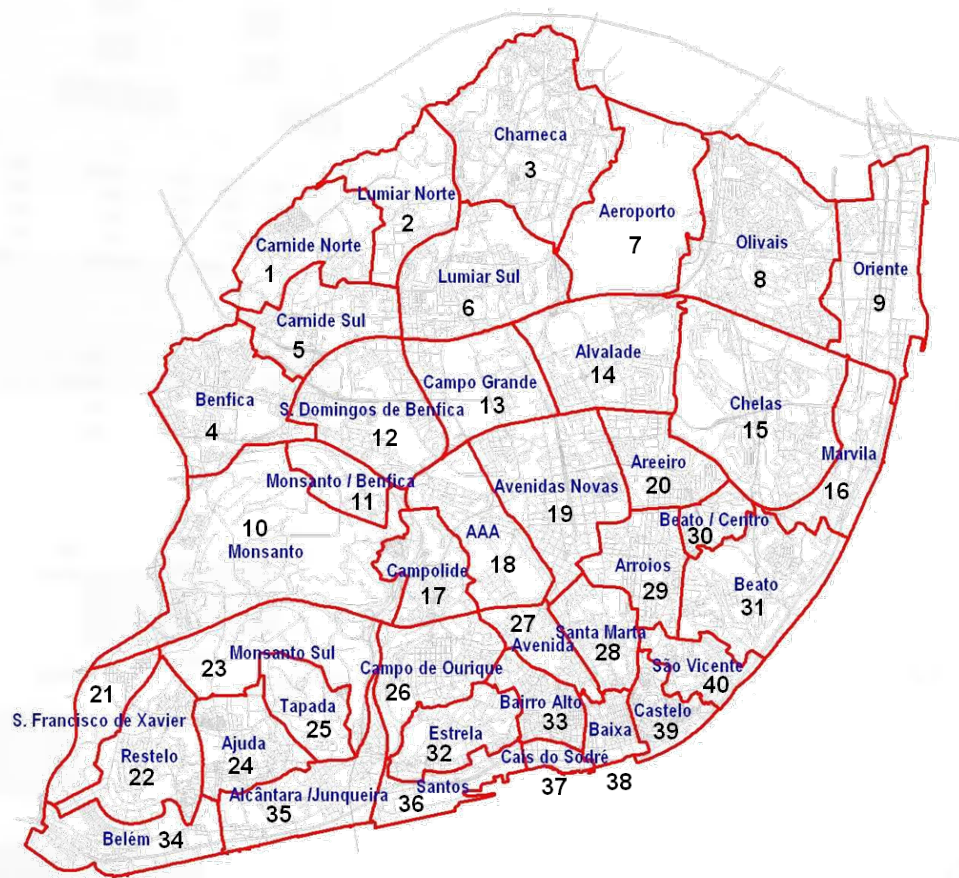


## ■ Modeling sales forecasting in retail

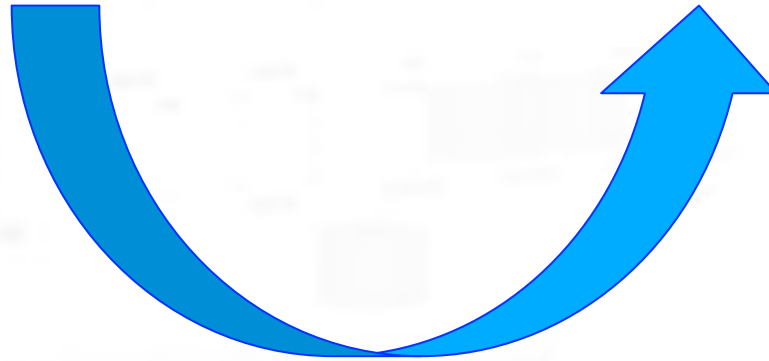
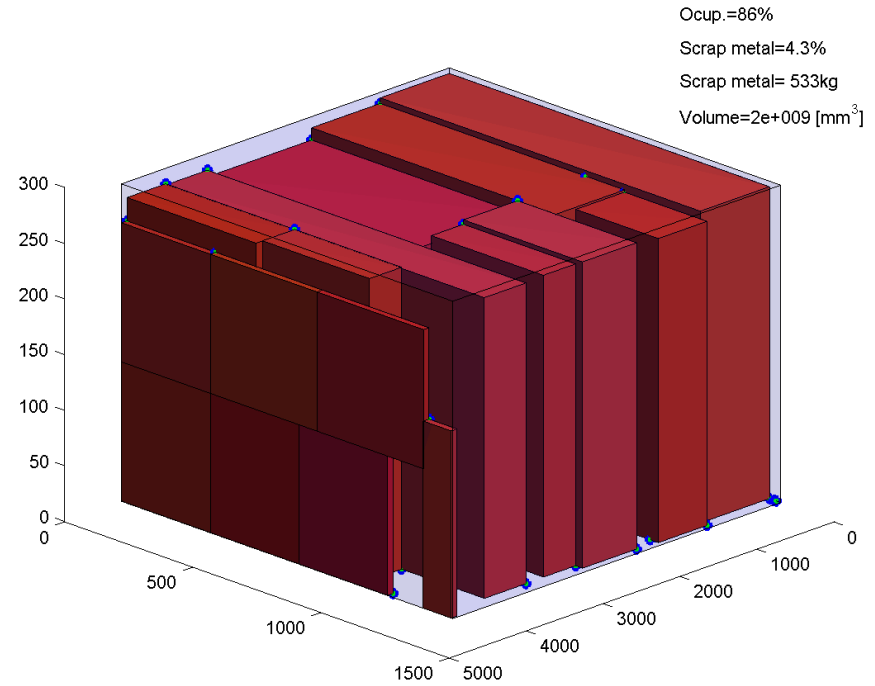
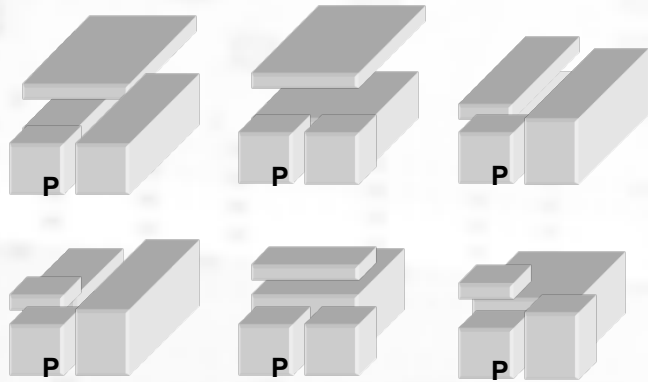




## Localização de pontos de carga de veículos eléctricos em Lisboa



# Tese: otimização de corte de aço



EXHIBITORS  
VISITORS  
JOURNALISTS

Home New slider VDMA: Medical Technology committed to Automation

## VDMA: Medical Technology committed to Automation



Frankfurt/Stuttgart, 22 February 2011 - Medical technology is a field that still has enormous automation potential, as can be seen at the joint stand of the VDMA Robotics + Automation Association at MedTec Europe in Stuttgart from 22 to 24 March 2011.

Nine leading manufacturers of robots from among the membership of the VDMA Robotics Division equip the stand; this project kick-starts an entire robotics road show. The events' aim is to raise grow in industries more aware of automation technology and the benefits it has in store for them.

### Period of intense automation for medical technology

The companies, together with their association, have combined their efforts and opted for a joint stand, putting into reality a powerful presentation that will familiarize the experts visiting MedTec with the opportunities only automation technology offers. Other member companies affiliated to the VDMA, such as Spineo or Stäubli, have even own stands to show their products. Stefan Sagert, Head of the VDMA Robotics Division says: "Medical technology has just begun to benefit from the full potential of automation." And even industry experts are surprised to see how fast automation technology is penetrating the pharmaceutical and medical sectors.



■ **Stefan Sagert, Head of the VDMA Robotics Division says: "Medical technology has just begun to benefit from the full potential of automation."**

### Robots working on and for patients

The VDMA and its member companies perceive another focus of application for robots and robotic technologies in the direct use of robots on and for the patient as well as in healthcare. "The inherent potential has not even been rudimentary explored, let alone implemented", explains Sagert. There are no clear-cut boundaries to conventional production or service robotics. The grinding of an artificial hip can be classified as an industrial process, the transport of medicine in a hospital with the help of autonomous vehicles might just as well go as part of service robotics. The requirements profile of the medical technology industry often refers to the precision of robotic drive units, as Spineo shows at the MedTec. At the same time, there is demand for sensors, grippers or vision systems from the automation technology segment that have to be adapted to the specific requirements of medical technology and its production environment. Anyway, the prerequisites to start an exciting exchange of ideas are perfect at the 120 sqm joint stand (stand no. 8157) at MedTec.

### The following companies are eager to welcome you at the joint stand no. 8157:

- ASS Automation, Friedberg, Germany
- Adapt Technology, Dortmund, Germany
- Denso Europe Robotics Department, Mörfelden-Waldorf, Germany
- Fanuc Robotics Deutschland, Neuhausen, Germany
- Kuka Robotics, Augsburg, Germany
- Mitsubishi Electric Europe, Ratingen, Germany – represented by Robotronic, Winterthur
- Reis Robotics, Oberrung, Germany
- Spineo, Priesohl, Germany
- Yaskawa Europe Robotics Division, Aalen, Germany

### If you have questions please contact:

Stefan Sagert - Head of VDMA Robotics  
is happy to give you more information.  
phone: 09186505-1533  
e-mail: [stefan.sagert@vdma.org](mailto:stefan.sagert@vdma.org)  
[www.vdma.org/8157](http://www.vdma.org/8157)

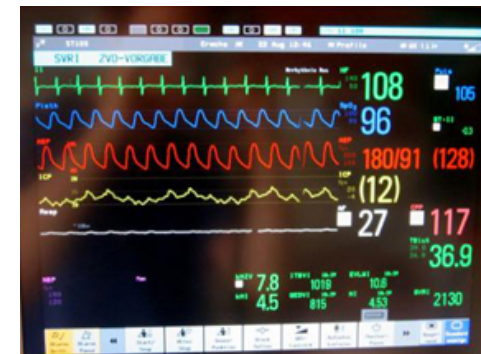
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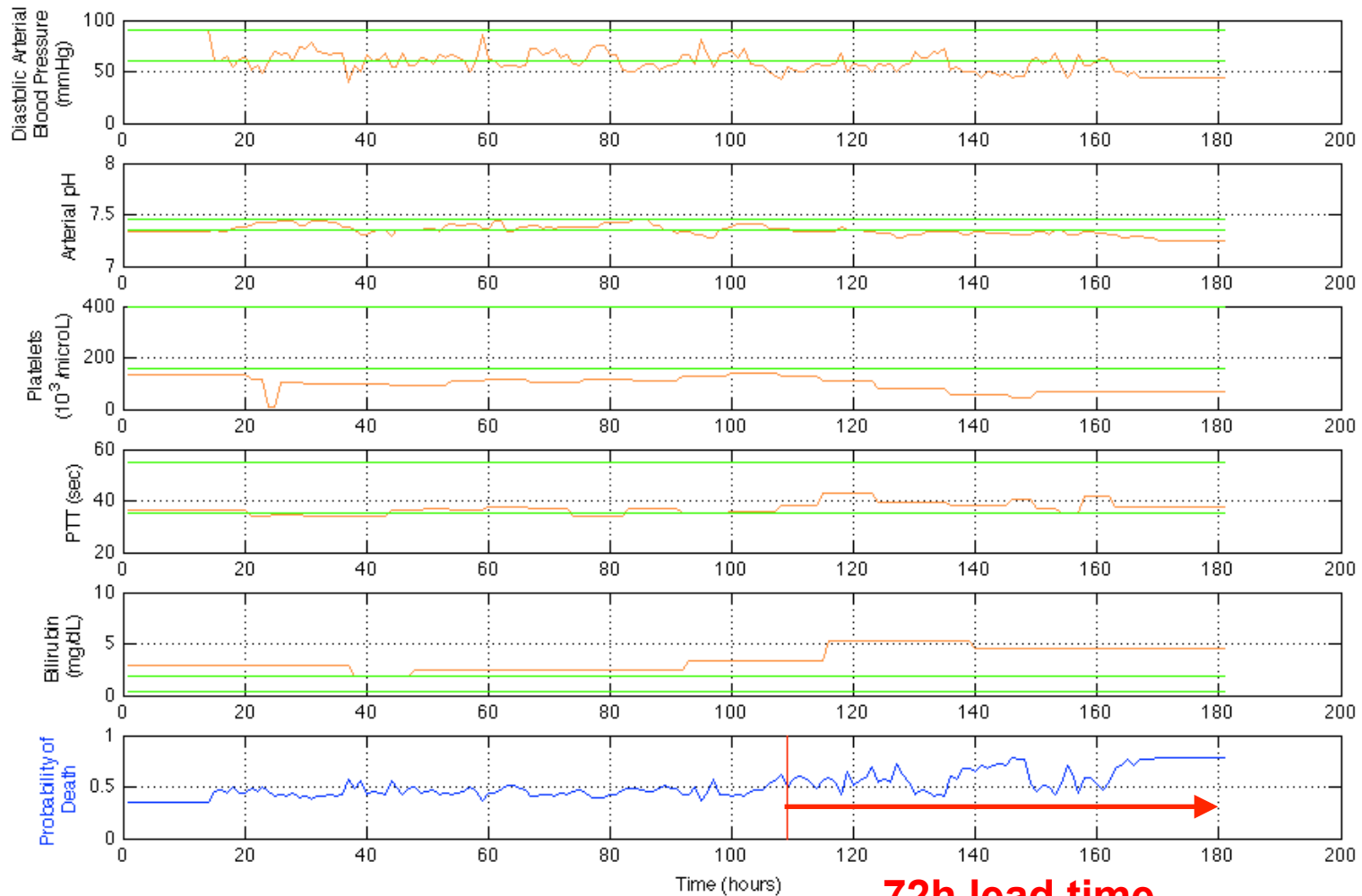
## ■ Saúde



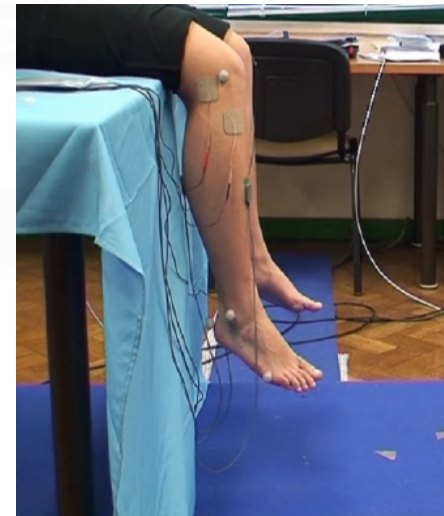
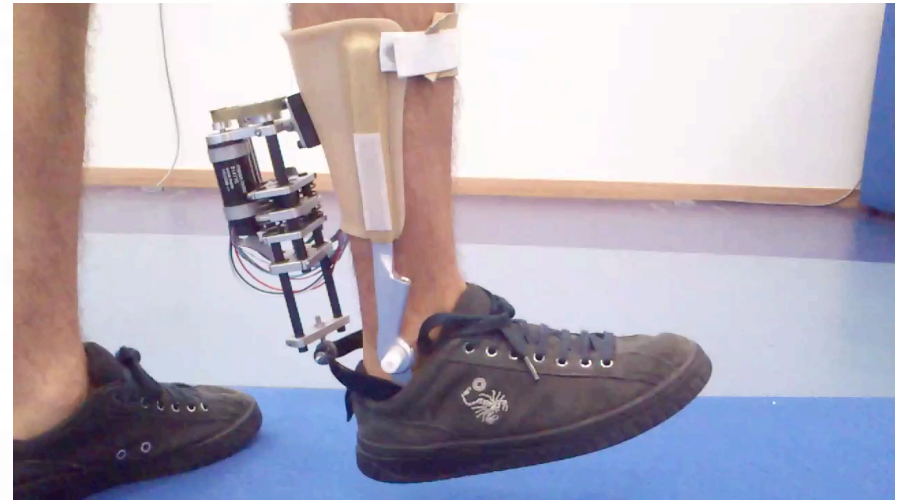
ESPÍRITO SANTO  SAÚDE



# Tese: previsão de risco de mortalidade



# Mobilidade reduzida e deficiência neuromuscular



- **Operação e manutenção fabril**
  - Operação de instalações industriais e outras
  - Manutenção de instalações e equipamentos
- **Ensino e Investigação**
  - Ensino Secundário e Superior
  - Centros de Investigação
- **Consultoria**
  - Projecto e fiscalização
- **Serviços**
  - Seguradoras e bancos

- Especialização com unidades curriculares de amplo espectro e de características **interdisciplinares**.
- Engenharia total: concepção, projecto, desenvolvimento, simulação computacional, controlo e automação.
- Forte ligação industrial e empresarial.
- Inserção em projectos de investigação em áreas de ponta de sistemas de engenharia.
- Saídas profissionais muito para além das áreas tradicionais da **Engenharia Mecânica e da área dos Serviços**.