ROBOFOOT: Smart robotics for high added value footwear industry

ROBOFOOT
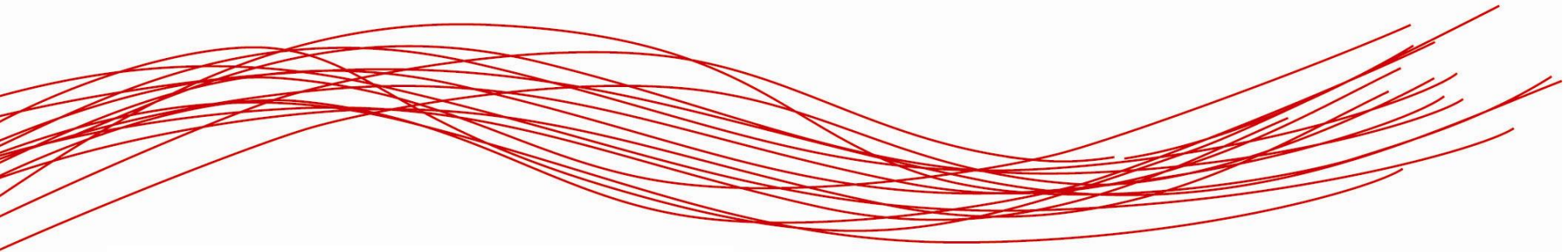
TEKNIKER-IK4
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COOPERATION

Objectives

•**Rationale**

➢**European Footwear Industry (_{EU-27, 2006}):**

> ➢**26,600 enterprises, €26.2 billion in turnover**

> ➢**Direct employment 388,000 people**

➢**However**

> ➢**Production index in 2008: 50% of 2000**

> ➢**Lost around 4% of its workforce per year over the last eight years**

➢**Fashion Footwear production is mainly handcrafted**

> ➢**Multiple variants (models, sizes, materials, colours)**

> ➢**Complex manufacturing and assembly**

COOPERATION

Objectives

• S&T goals of the project

➢ **Manipulation: Manipulation strategies and devices for non rigid-parts**

➢ **Robot programming:**

   ➢ **CAD and sensor based programming**

   ➢ **Manual guidance devices**

➢ **Sensor based control:**

   ➢ **Intelligent engine able to select and implement the best control strategy for each application**

   ➢ **Visual servoing**

➢ **Footwear manufacturing re-engineering**

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Objectives

•Impact expected

➢**To promote the use of robots to overcome the complexity in the automation in Footwear industry**

   ➢**To reduce assembly costs.**

   ➢**To increase flexibility**

   ➢**To allow mass customization.**

   ➢**To enhance final product quality.**

   ➢**To achieve 100% inspection of final product (over certain aspects).**

   ➢**To reduce energy consumption**

   ➢**To obtain better working conditions for workers**

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Objectives

• **Link with the multi-annual roadmap**

➢**Cost efficiency, short time to market, adaptability/re-configuration, product quality, higher productivity**
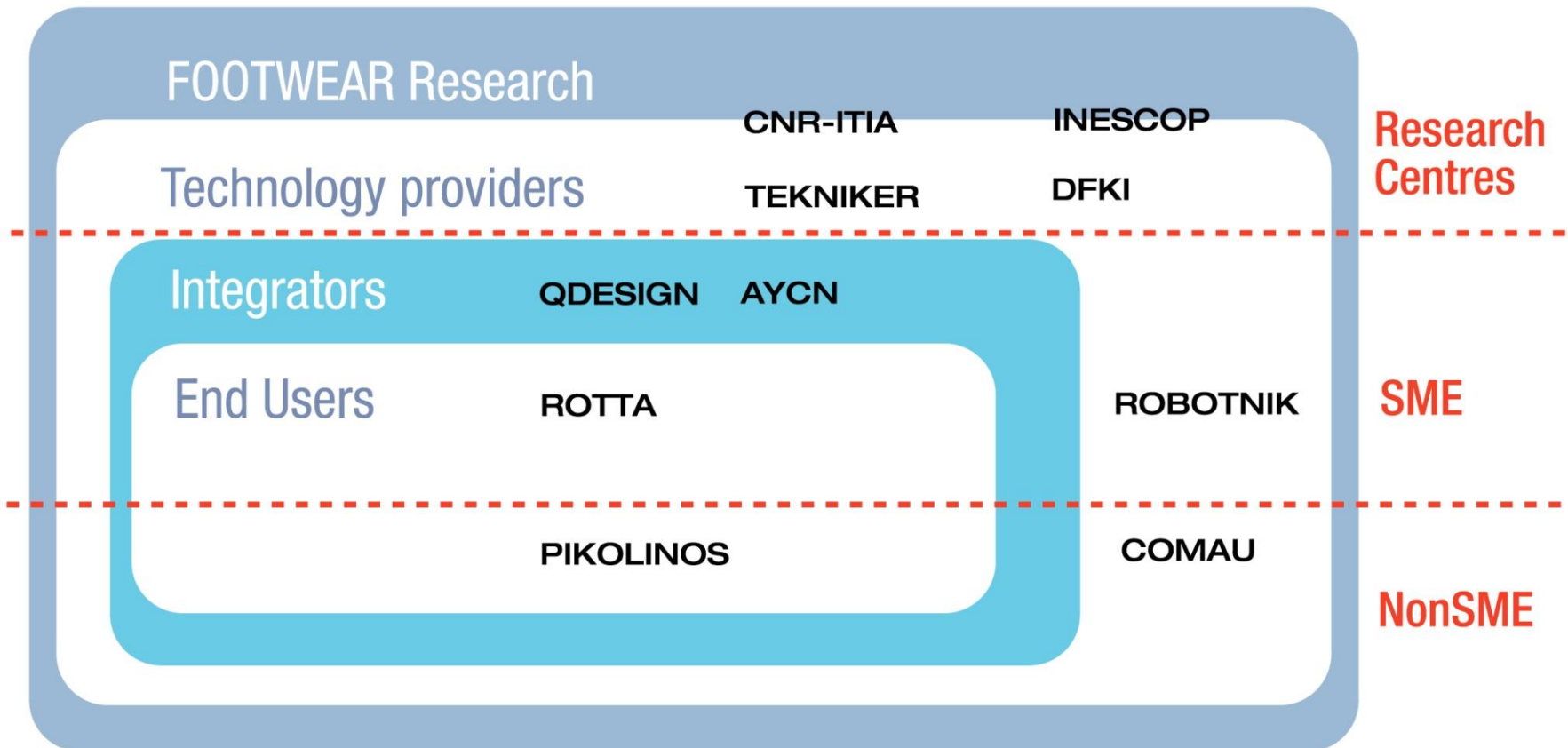
➢**ICT-Enabled intelligent manufacturing**

   ➢**a) Smart factories: Agile manufacturing and customization**

➢**High performance manufacturing**

   ➢**a) Flexible adaptive production equipment, systems and plants for rapid (re)configurations and optimal energy use**

COOPERATION

Consortium

FOOTWEAR Research

Technology providers

Integrators

End Users

CNR-ITIA   INESCOP

TEKNIKER   DFKI

QDESIGN   AYCN

ROTTA   ROBOTNIK

PIKOLINOS   COMAU

Research Centres

SME

NonSME

Innovation issues

- **Exploitation**
  - ➤ **Initial definition of products**
  - ➤ **Mechanism: Industrial partners (robotics+footwear), Research (licensing)**

- **Dissemination**
  - ➤ **Traditional mechanisms (Web, leaflets, papers, fairs,...)**
  - ➤ **Booth at SIMAC-TANNING (Bologna)**

- **Standardisation**
  - ➤ **No specific contribution foreseen**

COOPERATION

PPP Added Value

- **How does the PPP add value to your project?**

  ➢**Synergizing capacities from research organizations, big companies, sector associations and, mainly small and medium sized companies (Holistic approach)**

  ➢**Contributing to European Footwear sector competitiveness.**

  ➢**Growing markets for robotics**

COOPERATION

PPP Added Value

•**How can you provide an added value to the PPP?**

➢**Contribution to PPP's strategies**

➢**Transformation of enterprises due to the needs of customization and sustainability, thus increasing the chances of success and global leadership.**

➢**Fulfilling main industrial needs and related R&D challenges:**

➢**Cost efficiency.**

➢**Short time to market.**

➢**Increased focus on high added value goods.**

➢**Adaptability/re-configurability.**

➢**Higher product quality…**