

Lomu, an Autonomous Mobile Robot with Robust Architecture and Components

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Abstract

The Laboratory for Robotics and Automation (LaRA) at HESSO-HEIG has developed several autonomous mobile robots with original architecture and control structure. These robots have participated to numerous EUROBOT competitions at Swiss and/or European levels. This paper describes a mobile autonomous robot named "Lomu", which is the most recent offspring of our design. The building blocks of Lomu are, as much as possible, made of industrial off-the-shelf components. Other key features are the excellence and modularity of software and hardware, technical functionality and operational reliability.

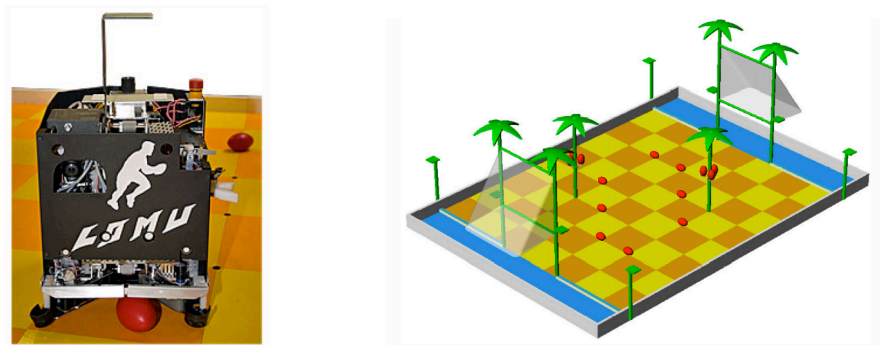


Figure 1. The robot “Lomu” and the EUROBOT 04 table

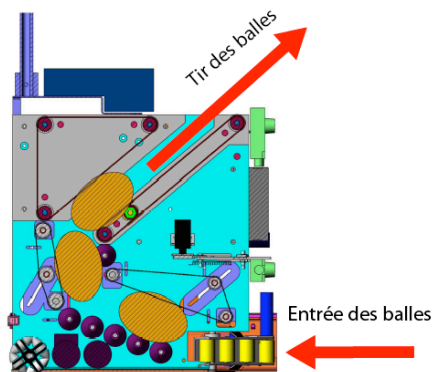


Figure 2. Cross-section of Lomu, showing the catching ball system and shooting system

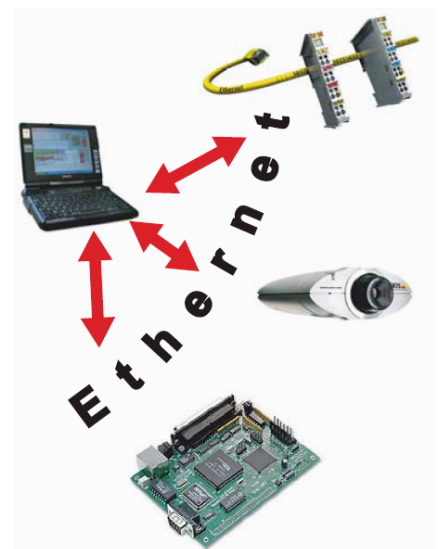


Figure 5. The hardware architecture



Figure 8. Main control panel and image processing control panel