

'Robots' were introduced to the world 100 years ago

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One hundred years ago, on 25 January 1921, the play R.U.R. premièred, introducing the word 'robot' to the world. Although the play does not feature robots as we know them today, many dissertations on robots refer to the play for its name. Today, the term and what it stands for are indispensable in our society and industry. Robots are also a frequent presence at Sirris and for the occasion we put them in the spotlight.

How to use robots and cobots efficiently and successfully in the workplace? This is what Sirris investigates, to help businesses. Sirris has been active in flexible automation for decades. Numerous technologies and applications have been developed over the years. Almost 10 years ago now, we were the first in Belgium to invest in a collaborative robot (cobot), which is specifically designed to work safely with operators in the same space.

An overview of our latest acquisitions:

Cooperative robot in production line

Sirris recently purchased a large-weight industrial robot to work with companies wanting to set up feasibility studies on how to integrate robots safely and meaningfully into a production line, alongside the operators (hence cooperative robot). In our application lab in Kortrijk we are investigating for which applications such a cooperative robot can be used, which safety systems

are best suited to create a safe human-robot-cell, how to make the robot’s programming simpler (e.g. 'hand guiding') and much more.

Autonomous mobile robot as logistic support

Within the framework of the Industry 4.0 pilot project 'Operator support' in 2020, Sirris developed a new demonstrator at its site in Diepenbeek, focusing on the use of autonomous mobile robots (AMRs) and invested in one of its own. With the demonstrator, we want to demonstrate the



Es. After all, the purchase of one or more AMRs brings challenges.

Cobot with industrial robot qualities for 3D printing of large structures

The Staubli TX-2Touch 90L was purchased a few years ago for our Liège site. This large cobot can work as fast as a classic industrial robot, but can also slow down to a safe working speed when an operator approaches. The cobot is equipped with a 'sensitive skin' that ensures it stops immediately on contact with an employee. Sirris uses the cobot for various applications. For example, it was equipped with an MDPH-2 plastic nozzle to 3D print very large structures in a short time and its use in composite production is planned for the near future.



Six-axis robotic arm with conveyor belt

The Niryo One is one of the latest additions to the site in Liège: the accessible small six-axis robot and its conveyor belt, from the French start-up Niryo, has the same kinematics as an industrial robot and can be programmed in various ways (Python, Modbus or TCP/IP). The robot has a repeatability of 1 mm and the arm can be used with different tools: a gripper, suction cup, ... Sirris deployed the robot within an Industry 4.0 project with a portable demonstrator, in collaboration with a partner. In addition, a number of research projects are planned in order to carry out quality inspections of injection moulded parts by means of sampling using the robotic arm.



Connectivity for smart robot cells

Last year Sirris invested in two robots for its Brussels lab: a laboratory robot (Fanuc CRX-10iA/L) and an industrial robot (Fanuc LR Mate 200iD/14L). These robots, with payloads of 10 kg and 14 kg respectively, together with a conveyor belt, are part of a mobile demo on the digitisation of robot cells. This applies both to connectivity and flexibility within a robot cell and to connectivity with external systems. In addition, the industrial robot is equipped with a force-coupling sensor (Schunk FTE-AXIA80) to compare the possibilities for force/sensor controlled processes between a robot



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