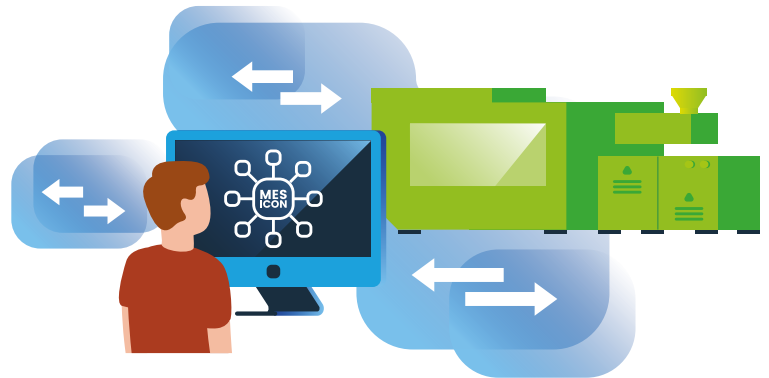# 4.Con GROUP

Manufacturing the future

MES Icon

The software for the plastics industry made by those in the know

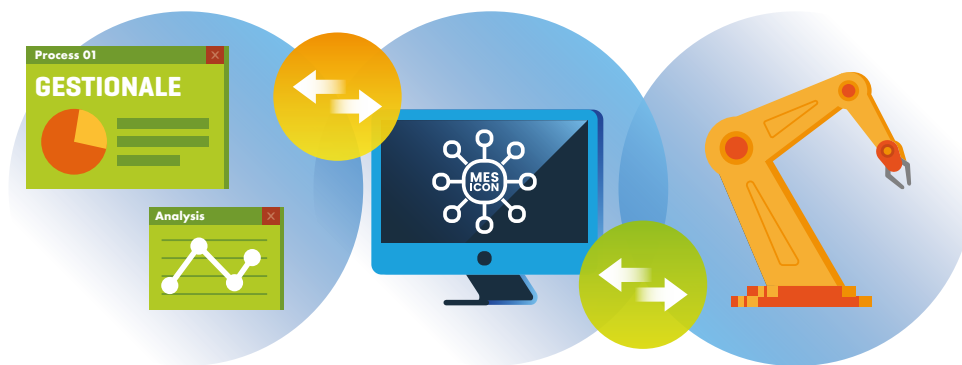# MES ICON

THE FOURTH INDUSTRIAL REVOLUTION

Industry 4.0 represents the Fourth Industrial Revolution, a process which is going to lead to a more and more **automated** and **interconnected** industrial **production**. It is a reality where machines, robots and people share a new type of integration which is favoured by new digital technologies.

MANUFACTURING EXECUTION SYSTEM

The Manufacturing Execution System (MES) is a **computerized system** whose first purpose to **manage and control the productive resources**.

Such management involves purchase orders, the production progress and the direct connection to the machines for information collection.

Computerized system for the management and the control of the productive resources, from the order to the final product.

MES ICON THE SOFTWARE WHICH DIALOGUES WITH ALL THE MACHINES.

The software ICON allows a dynamic and a constant **communication between all the elements** of the process, guaranteeing a prompt and efficient reaction to every expected and unexpected event.

This is possible through **real-time collection of data** which, once it is calculated by the system, provides useful information to the production managers and the company's management, in order to **limit mistakes, waste** and useless handlings.

The MES ICON has an extremely simple and user-friendly interface. **Developed for the plastic moulding departments**, it is also suitable for other sectors.
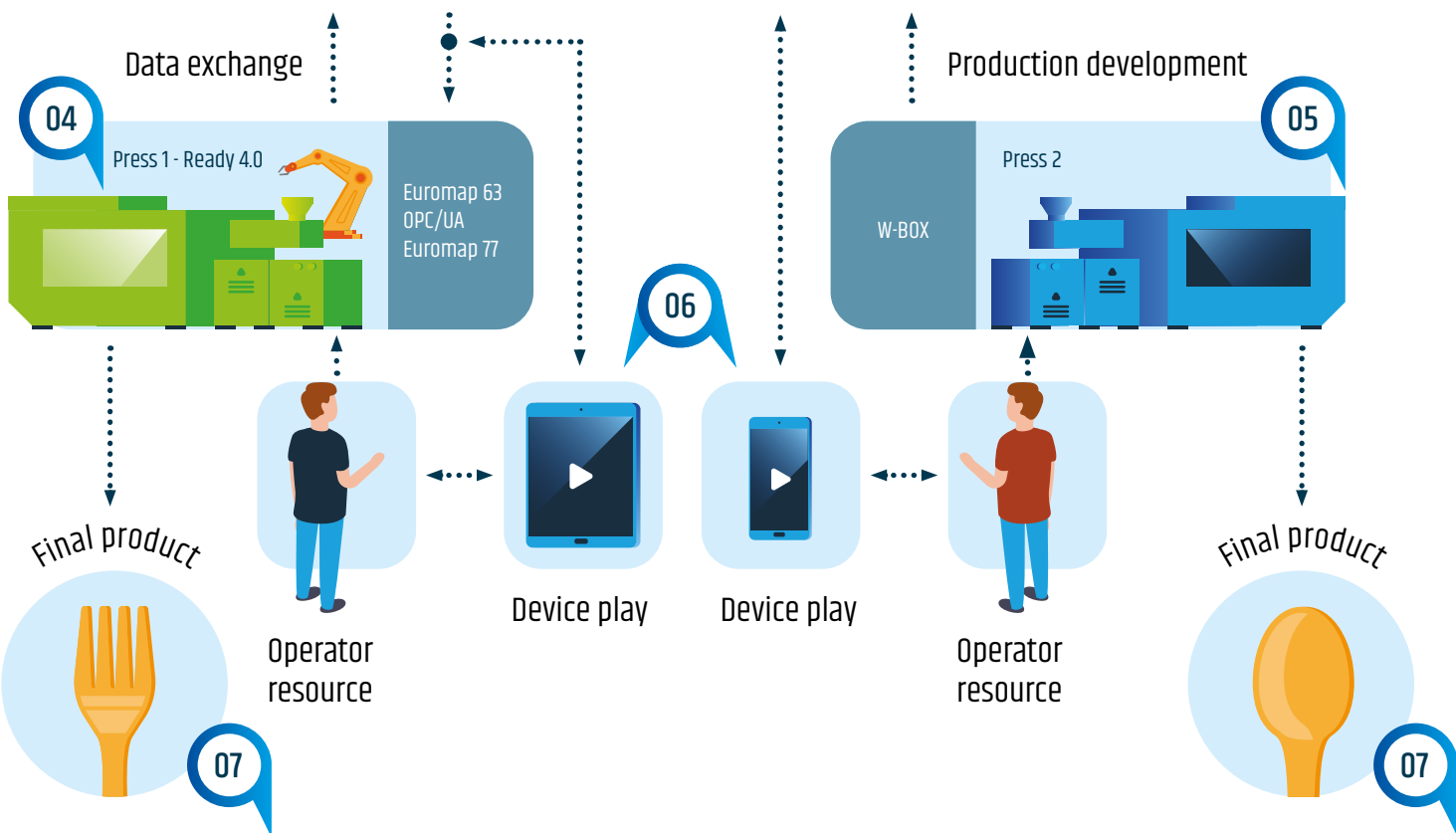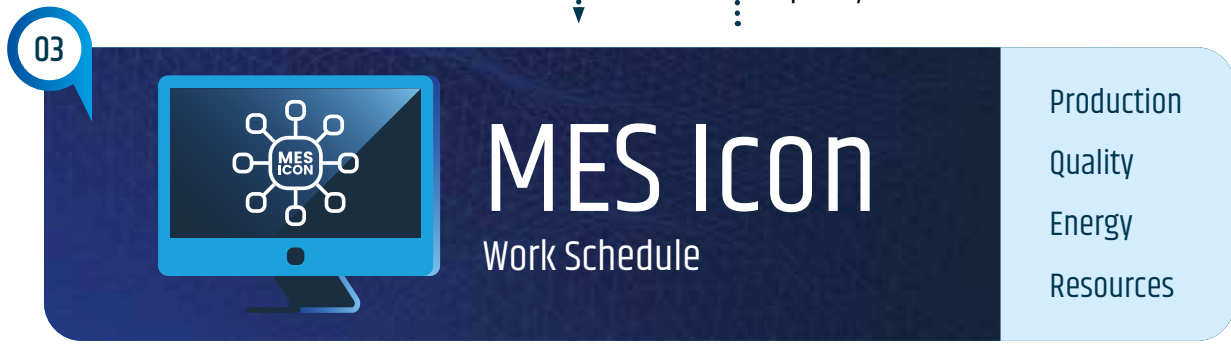
BENEFIT

- Better product quality
- Top efficiency
- Less waste
- Fewer costs
- Accurate and real-time production data

WORKFLOW

01 Customer's orders

02 Enterprise Resource Planning

Process 01
GESTIONALE

Analysis

Data

ERP, SAP, Zucchetti...

Production order
launch of production

Production as
quality index

03 MES Icon
Work Schedule

Production
Quality
Energy
Resources

Data exchange

Production development

04 Press 1 - Ready 4.0

Euromap 63
OPC/UA
Euromap 77

05 Press 2

W-BOX

06

Device play

Device play

Final product

Operator resource

Operator resource

Final product

07

07

ICON SYSTEM FUNCTIONING

01 Customer's order

Everything begins with the external (or internal) orders, which are elaborated by the enterprise resource in order to plan the production.

02 Assignment of the order

Taking into consideration the availability of the raw materials, the equipment and the human resources, the production order is forwarded to the ICON system.

03 Start of the work

ICON elaborates the production order. A mould and a machine are assigned to each production order, with their moulding setting. These settings are uploaded into the machine directly from our ICON system, which at the same time warns the operator through the device to carry out the activity of tooling. After that, the operator notifies about the beginning of the process, while the machine starts to communicate with the MES. This bidirectional exchange of information between the machine and the enterprise resource planning, is the perfect example of Industry 4.0.

04 4.0 production cycle management

While the machine is working, through the OPC protocol transmission of data (or Euromap 63), the ICON system checks and historicises the moulding and the productivity parameters, paying in particular attention to the quality parameters in order to report potential mistakes or non-compliances. The downtime and the warnings collection allow the person responsible for, to take the necessary countermeasures.

05 Production progress management

On the outdated machines which are not, or can not be configured as READY 4.0, the ICON system manages and historicises the cycle time, the production progress, the status of the machine and optionally the consumed energy, through a W-BOX module placed inside the machine. This solution could be implemented on W-Lan.

06 Control panel

The main dashboard, usually positioned at the entrance of the department, shows an overall summary of all the connected machines. From this panel it is possible to select every single machine and see data and statistic in real time. It is possible to access and configure these data on any smartphone, tablet or latest generation internet browser.
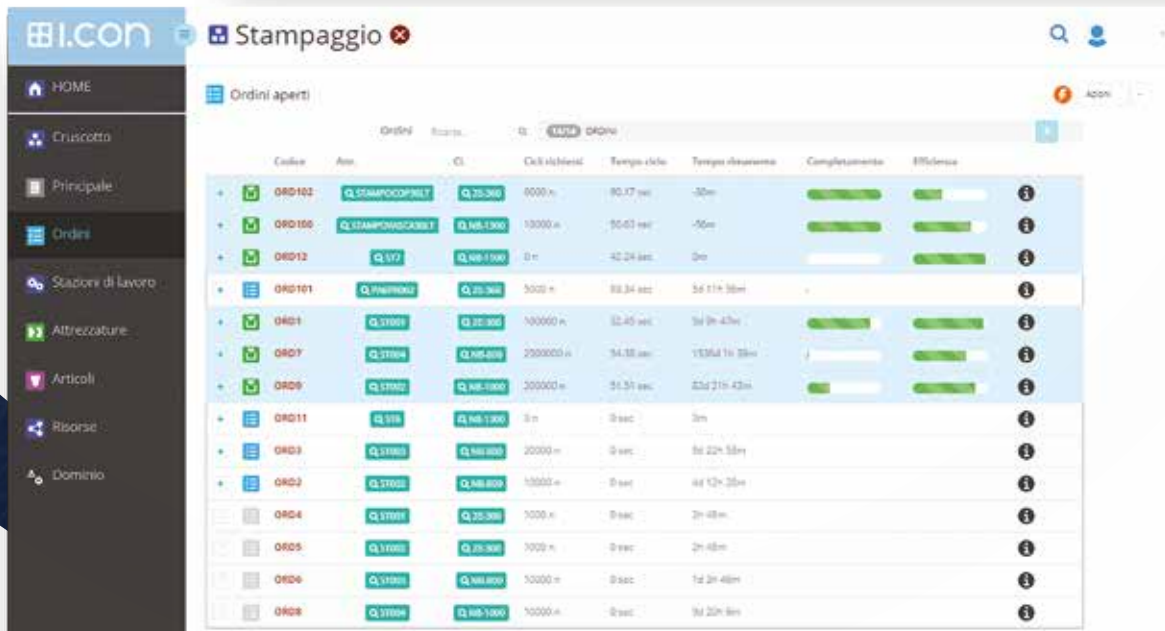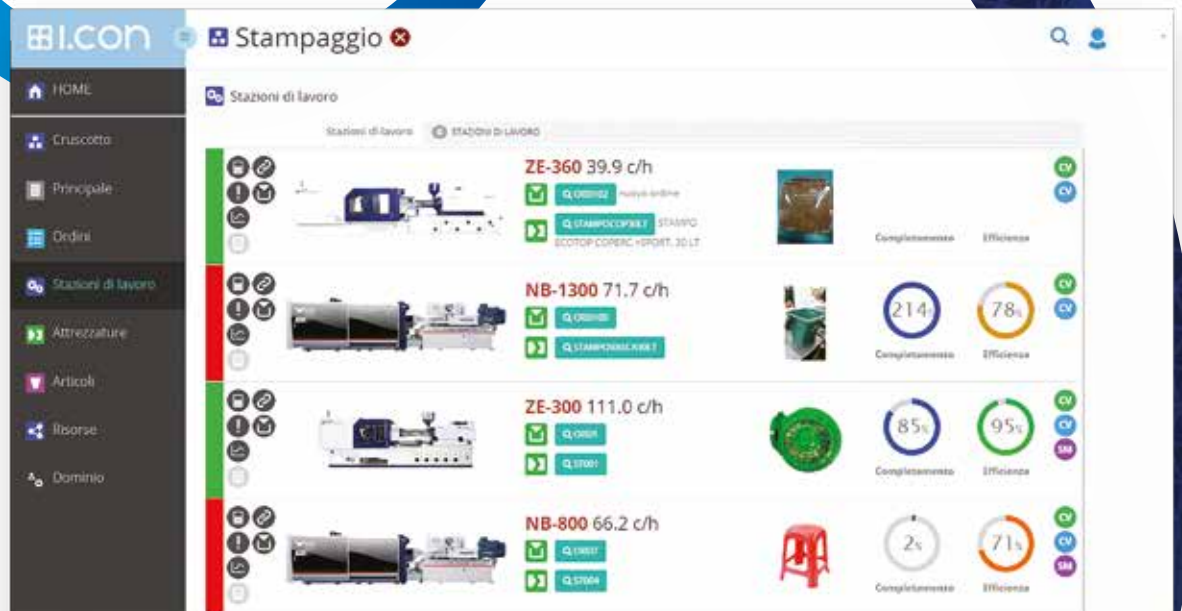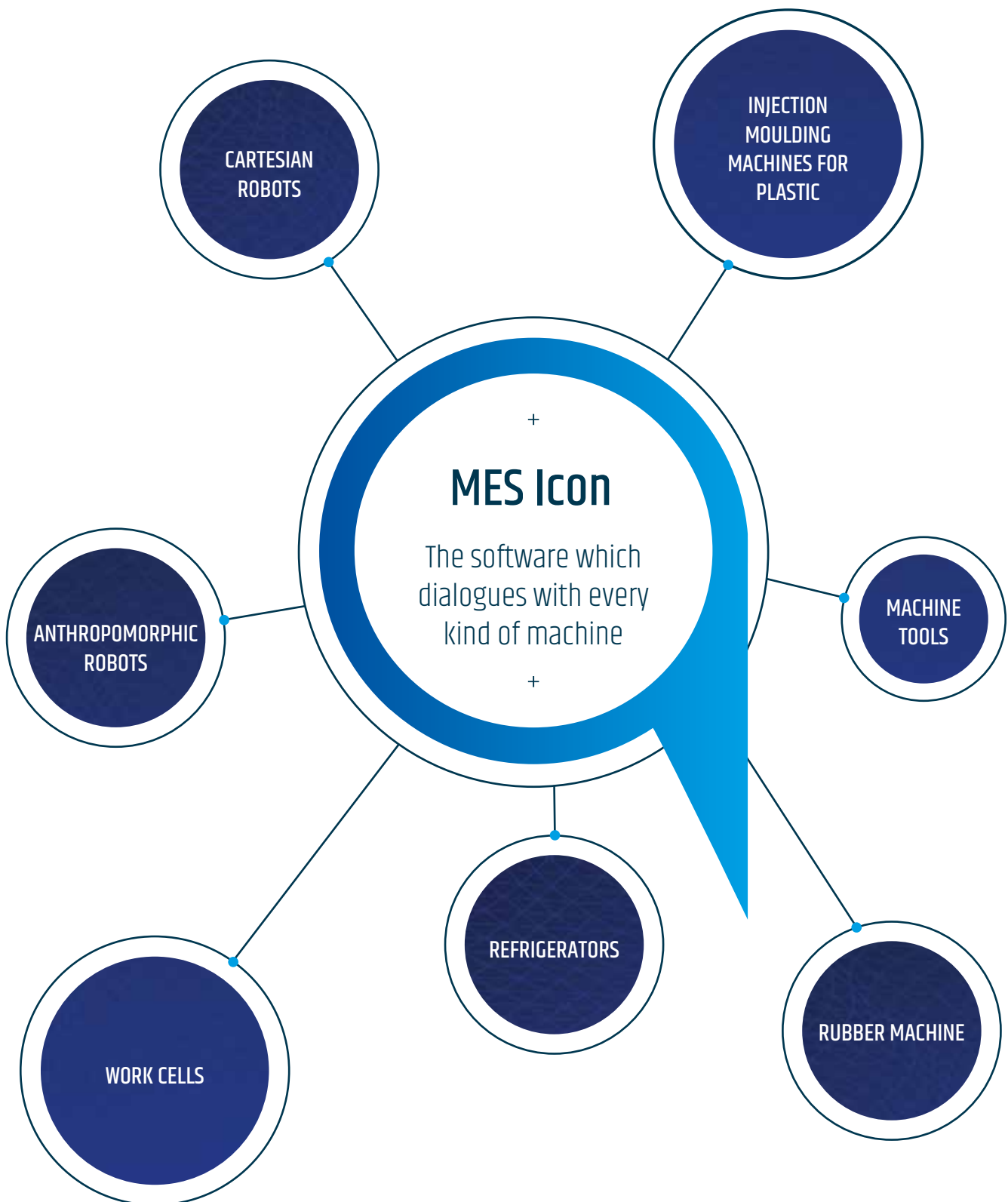
07 End of production

When the manufacturing is complete, the collected data (production, quality, waste and downtime) are recorded, checked and historicised by our ICON system, which is already ready to launch a new production.

MANAGEMENT AND CONTROL

The ICON Group mission is to spread the benefits of the Industry 4.0 and of the collaborative robotics in manufacturing companies

CARTESIAN
ROBOTS

INJECTION
MOULDING
MACHINES FOR
PLASTIC

+

MES Icon

The software which
dialogues with every
kind of machine

+

ANTHROPOMORPHIC
ROBOTS

MACHINE
TOOLS

WORK CELLS

REFRIGERATORS

RUBBER MACHINE

4.con
GROUP

Manufacturing the future