
DATALOGIC
THE VISION IS YOURS
"Mark & Read"
la generazione del dato
dal Manufacturing al Retail
18 Febbraio 2016
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Chi è Datalogic

- **Fondata nel 1972 a Bologna da Romano Volta**
- **Leader globale nell'Acquisizione Automatica dei Dati (ADC) e nell'Automazione Industriale (IA)**
- Tra i maggiori produttori di lettori di codici a barre, computer manuali, sensori per la rilevazione, misura e sicurezza, sistemi di visione e marcatura Laser
- Focalizzata nell'industria manufatturiera, trasporto e logistica, nella distribuzione *retail* e nel medicale
- Fatturato 2015 di 535,1 M€ (73% ADC e 27% IA) in crescita del 15,2% sull'anno precedente
- 2500 dipendenti nel mondo, di cui 400 in R&S con un portafoglio di oltre 1100 brevetti internazionali
- Una presenza globale con sedi proprie in 30 paesi
- Quotata presso il segmento STAR di Borsa Italiana dal 2001, con il simbolo DAL.MI. e ha sede centrale a Lippo di Calderara di Reno (Bologna)

http://www.datalogic.com/

Il ruolo chiave dell'AutoID nell'IoT e M2M

Commentary for Clients of VDC's AutoID & Transaction Programs | **FEBRUARY 2013**

By: Michael Liard – *Vice President*

AutoID Plays a Central Role in the Internet of Things and M2M

Gives Rise to the Connected Agile Enterprise

The Situation

The Internet of Things (a term coined by the MIT Auto-ID Labs) is already here. The machine-to-machine (M2M) world is exploding and any object, asset, item, or person that can be connected is being connected, and all at a reasonable cost. Companies in every industry are invoking M2M and IoT applications to reinvent their businesses as real-time, customer-driven organizations ushering in a new era of the connected agile enterprise. And playing a central role in turningM2M and IoT strategies into reality are AutoID technologies.

SPEED READ

- Companies in every industry are invoking M2M and Internet of Things (IoT) applications to reinvent their businesses as real-time, customer-driven organizations.
- M2M is part of the Internet of Things (IoT) conversation but they are not the same thing. They are, however, highly complementary and intersecti
- AutoID technologies, including Barcode RFID, NFC, and sensors, are the glue that intelligently connects and creates the IoT through data capture and sharing.
- With M2M, embedded AutoID technologies (such as RFID and NFC) enable communication with and between machines and other intelligent devices.

http://www.vdcresearch.com/aidc/13_autoid_rfid_feb_vdc_views.pdf

Industry 4.0: Standardizzazione dell'innovazione

DKE VDE DIN

VDE

*DKE: German Comission for Electrical, Electronic and Information Technologies of DIN and VDE

*The aim of the future initiative **Industrie 4.0** is to exploit the potential resulting from:*

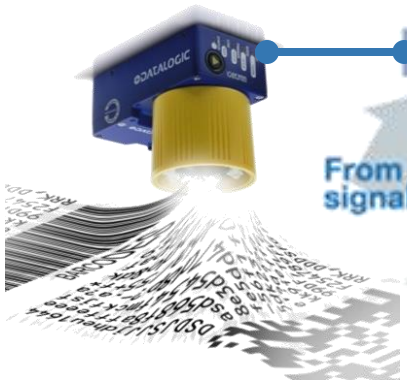
- ***the extensive use of the internet,***
- ***the integration of technical processes and business processes,***
- ***the digital mapping and virtualization of the real world, and***
- ***the opportunity to create "smart" products***

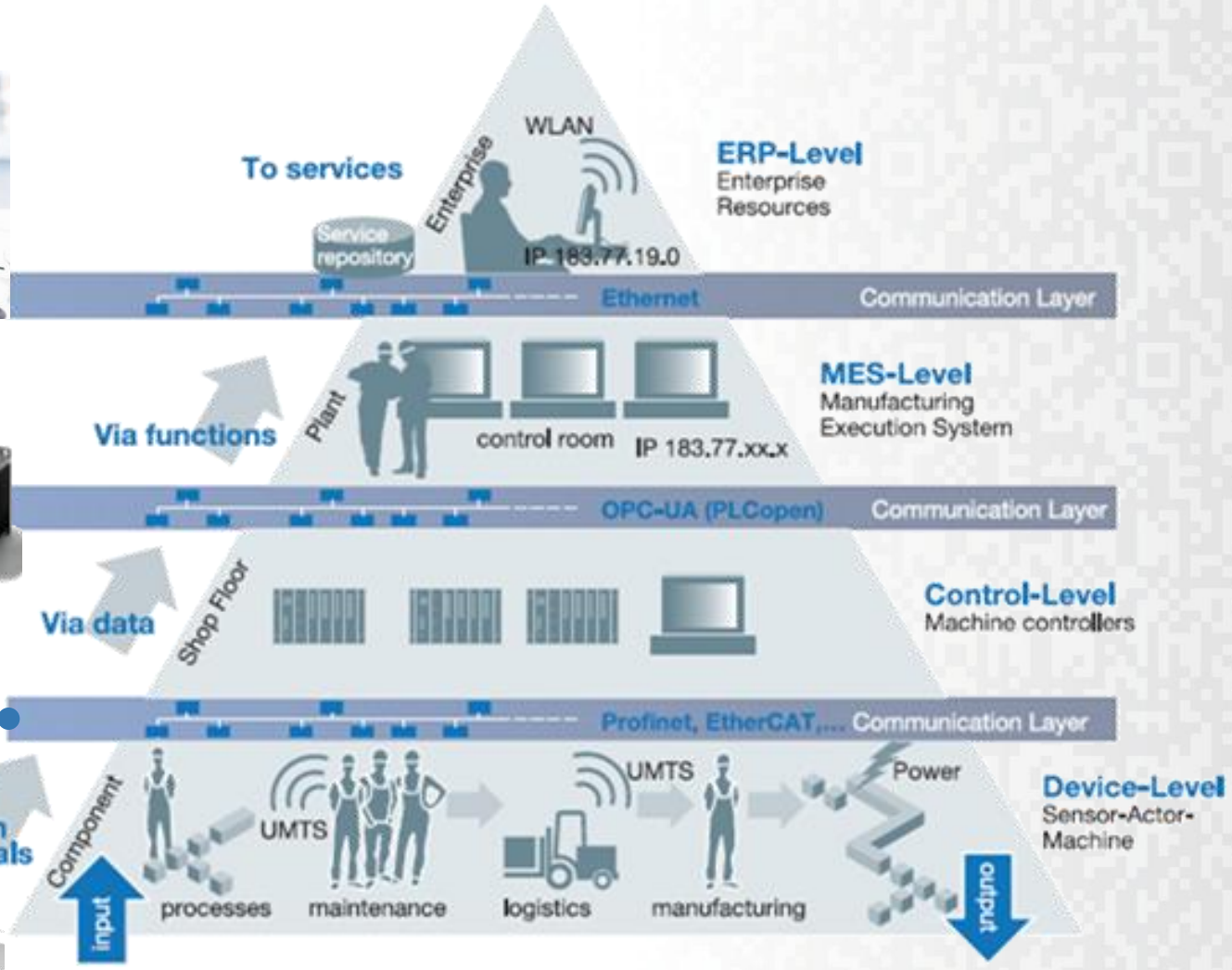
*In order to address the **standardization** issues at an early stage, a roadmap has been compiled by the WG "Standardization Concept for Industrie 4.0" of the DKE**

*The future project Industrie 4.0 presented by the German Federal Government is intended to reflect the importance of **manufacturing** technology and the **ICT** sector which supports it [...] transforming mechatronic systems into **Cyber-Physical Systems (CPS)**.*

www.dke.de/de/std/documents/rz_roadmap%20industrie%204-0_engl_web.pdf

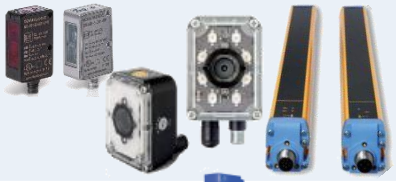
Livelli di integrazione e strati di comunicazione





http://machinedesign.com/sensors/plcopen-opc-ua-function-blocks-simplify-packaging-machine-communications

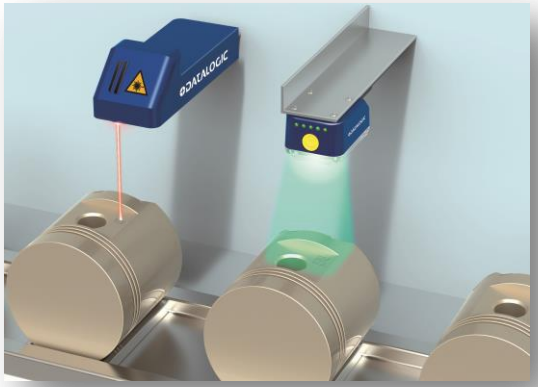
Tecnologie Datalogic per la generazione del dato

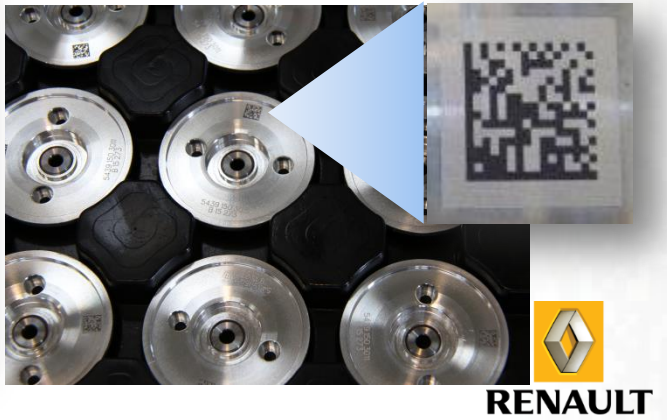
Tipologia e funzione del dato	Prodotto e tecnologia		Interface/protocol Industrial Ethernet
Marcatura dati di prodotto o processo produttivo	Marcatori Laser		Ethernet TCP/IP EtherNet IP Profinet
Rilevazione dati di prodotto o processo produttivo	Lettori di barcode, Terminali Portatili, Sistemi di visione		Ethernet TCP/IP EtherNet IP Profinet
Scrittura e lettura dati di prodotto o processo produttivo	Lettori e TAG RFID		Ethernet TCP/IP
Rilevazione di presenza oggetti e anti-infortunistica	Sensori fotoelettrici Sensori di visione Barriere di sicurezza		EtherNet/IP IO-Link to Profinet Powerlink
Rilevazione di caratteristiche fisiche	Sensori di colore Sensori dimensionali Sensori di visione		EtherNet/IP EtherCAT IO-Link to Profinet

Case # 1 - Mark & Read

Generazione e integrazione dei dati nel Manufacturing

- **Direct Part Marking** (DPM) is a process for imprinting a data on an item, replacing ink printing, labels or other less durable technologies
- **2D codes** (Datamatrix) are used in most of DPM applications and industries, such as Automotive parts manufacturing, assembling and post-sales service
- Datalogic's **AREX** compact pulsed fiber laser marking system is used to "**WRITE**" the 2D code on any plastic or metal mechanical part
- Datalogic's **T47** Smart Cameras or **Matrix 300** Imager are used to "**READ**" the Datamatrix code and transmit the information on an Ethernet port





Case # 2 - OCR, Barcode e QRcode

Tracciabilità alimentare dal produttore al consumatore

- **Food safety** directives require a full **traceability** from the manufacturer to the consumer and Datalogic is the global leader for automated data capture
- **Optical Character Recognition** (OCR) has being used for human readable information of Expiry date (i.e. best before), Lot number, Production Plant
- **1D Barcode** is still the most diffused carrier for product information when it is necessary for automated data capture in manufacturing and logistics
- **Quick Response Code** (QRcode) is being more and more adopted to store information for smartphones and **JOYA** Datalogic pod for self-shopping

ESSELUNGA

Case # 3 - Pharmacode Datamatrix

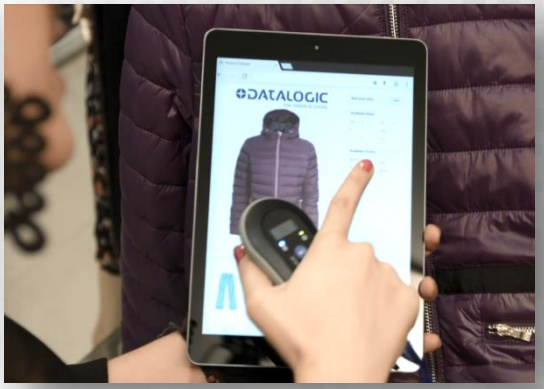
Aggregazione, serializzazione e tracciabilità del farmaco

- **Pharma** industry requires strict quality control, serialization, track and trace along the supply chain, where Datalogic is present with many applications
- One of main requirements in manufacturing control is the **Aggregation** of pharmaceutical product - instruction sheet - packaging - bundling – packing
- Many countries are adopting **Pharma Traceability** measures according to local regulations; Italy is adopting the Italian “bollino” 9 digits AIC code
- European directives about **Serialization** are driving, by 2016, Pharmacode 1D evolution to GS1 2D Datamatrix **Serial Global Traded Item No.** (SGTIN)

Case # 4 - RFID
L'identificazione automatica a radio-frequenza

- **RFID is a complement to Barcode ID** and specific features differentiate the tagging solutions for tracking industrial processes and material handling in Factory Automation and Logistics, such as:
  - Harsh and dirty environment where optical reading is not possible
  - High temperature over 50…60° C, or even temperature logging
  - Write and update data to Tags during process
  - Hidden or no line-of-sight Tags
  - With Barcode for redudancy and security chek

- **RFID tags can follow the goods to retail,** with additional functionalities like automatic storage and retrieval, inventory, assisted sales and safe check-out



Case # 5 - SG4 Fieldbus

“Less is More” più sicurezza con meno componenti…

- **Safety Light Curtains** are used in manufacturing plants to protect operators from entering to dangerous areas, where **Muting** function is necessary to distinguish the material passage from an accidental access of a person
- **Traditional Muting require additional hardware** to elaborate the sequence and speed of sensors activation and distinguisg material from operators
- **SG4 Fieldbus controls each single beam**, giving the precise profile of the material or operator, thus making a smart muting without any additional hw and transmitting the data via openSAFETY over Ethernet POWERLINK

Case # 6 - WEB Sentinel
Valigie sotto controllo all'aeroporto di Fiumicino

- No more baggage lost and related cost at Fiumicino Airport in Rome, thanks to a Datalogic and Sita solution for **Baggage Handling Systems** (BHS)
- 200 **barcode scanners DS8K** with ACR (Auto reconstruction code), ASTRA (Automatically SwiTched Reading Area) and PackTrack read 100% of tags
- 30 **controllers SC6000** collect the data from Datalogic readers on a dedicated bus at 1.25 Mb/sec and interface with the host via Ethernet
- **Websentinel** software allows the Diagnostic and Statistical monitoring even remotely through a browser of each reading station and all its components

Thank You!

This presentation contains statements that are neither reported financial results nor other historical information. These statements are forward-looking statements. These forward-looking statements rely on a number of assumptions and are subject to a number of risks and uncertainties, many of which are outside the control of Datalogic S.p.A., that could cause actual results to differ materially from those expressed in or implied by such statements, such as future market conditions, currency fluctuations, the behavior of other market participants and the actions of governmental and state regulators

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