QUALI COMPETENZE PER LA LOGISTICA DEL FUTURO
IL CASO ID-SOLUTIONS

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Full Professor
Industrial Logistics and Supply Chain Management
University of Parma
RFID Lab, Head and Founder
RFID Lab e Id-Solutions
Una partnership win win

University of Parma
Department of Industrial Engineering
Supply Chain Management

2005

Research Centre
Research, education and tech transf on RFID applications in business

Spin off company
System Integrator & Solutions Provider
RFID system integrator

**Rfid tags**
- Disposables labels
- Embeddable tags
- Durable hard tags

**Software**
- Middleware
- UI and integration
- BI dashboards and mobile Apps

**Services**
- After sales
- Customisations and service bureau

**Consultancy**
- Feasibility studies
- KPIs
- PJM

**RFID Hardware**
- Encoding
- Fixed and mobile RFID gateways
Id-Solutions footprint

1000+ devices managed remotely worldwide
150+ customer sites
40+ millions Rfid tags tracked /year
Id-Solutions main customers

Fashion Apparel
- IMAX
- MaxMara
- MAX&Co.
- MARELLA
- GUCCI
- LXOTIJA
- OAKLEY
- THÉLION
- MARINA RINALDI
- PENNYBLACK

Food
- Carrefour
- CONAD
- Unipol
- FERRERO

Healthcare
- Johnson & Johnson
- Novartis
- Bayer
- Aspri

Manufacturing
- Benfica
- Sossio
- SARTO
- GEA
- Bonfiglioli
- Manni Group
- MOMO

3PLs
- STEF
- Columbus
June 1st 2017 Id-Solutions joins Murata manufacturing Corporation Ltd
Our Business
We are worldwide leaders in the design, manufacture and supply of electronic components and solutions. We are Innovators in Electronics.

Our Strengths
• Advanced materials technology and expertise
• Broad product portfolio
• Extensive global manufacturing and sales network

Our Figures
• Net sales 1,371,842 million JPY* (11.5 B€)
• Employees 75,326*
• Number of subsidiaries 99* (30 in Japan, 69 overseas)
• Established in 1944
How many Murata products do you own?

<table>
<thead>
<tr>
<th>Capacitors</th>
<th>Inductors (Coils)</th>
<th>Noise / EMI suppression products and filters</th>
<th>Resistors</th>
<th>Thermistors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensors</td>
<td>Timing devices</td>
<td>Sound components</td>
<td>Power devices</td>
<td>Micromechatronics</td>
</tr>
<tr>
<td>RFIDs</td>
<td>Matching devices</td>
<td>RF components</td>
<td>RF modules</td>
<td>Batteries</td>
</tr>
<tr>
<td>Ultra low power short range RF-IC</td>
<td>Filters</td>
<td>Substrates</td>
<td>Ionizers/Ozonizers</td>
<td>Front-end modules</td>
</tr>
</tbody>
</table>

Typical number of components in

<table>
<thead>
<tr>
<th>Product category</th>
<th>Smart Phone</th>
<th>Laptop</th>
<th>Tablet</th>
<th>Automotive</th>
<th>TV</th>
<th>Smart watch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chip multilayer ceramic capacitors</td>
<td>800</td>
<td>800</td>
<td>600</td>
<td>1000-5000</td>
<td>600</td>
<td>200</td>
</tr>
<tr>
<td>EMI suppression filters (EMIFIL®)</td>
<td>100</td>
<td>60</td>
<td>90</td>
<td>300</td>
<td>50</td>
<td>20</td>
</tr>
<tr>
<td>Surface acoustic wave filters</td>
<td>4-25</td>
<td>4-25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connectivity modules</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Shock sensors</td>
<td>1-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceramic resonators</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chip inductors</td>
<td>200</td>
<td>30</td>
<td>200</td>
<td>200</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Multilayer devices (Filter, Coupler, Balun, etc.)</td>
<td>2-10</td>
<td>2-5</td>
<td>2-4</td>
<td>1-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTCC multilayer substrates</td>
<td>1-2</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
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2005

2017

Thanks to the partnership with Murata, Id-Solutions is able to develop projects on a global scale with products engineered by Murata based on customer needs.

Thanks to the partnership with Id-Solutions, Murata is able to offer not only RFID products but also solutions, encompassing consultancy, software, other hardware products and after sales services (RFID Systems).

Two complementary Research & Competence Centers: one on technologies in Kyoto; one on RFID sw and solutions in Parma.
RFID in the food chain

Evidence from the field
Grandi Salumifici Italiani & Parmareggio

Deployment
1 Centro di distribuzione + 15 stabilimenti di produzione

Use cases
Automazione e accuratezza delle spedizioni
Automazione ricevimento con ASN

La soluzione
RFID pallet level tagging
Portali RFID sule banchine di carico scarico

Benefici
• - 50% tempi di carico/scarico - ASN
• 0 pallet disguidati
  • Incremento livello di servizio e vendite grazie alla riduzione dell’out of stock
Confidenziale

Deployment
15 piattaforme
650 mezzi monitorati

Use cases
Cold chain management

La soluzione
Tag RFID attivi con sensore di temperatura
Centralina RFID gateway
Dashboard cloud

Benefici
La temperature di ogni viaggio è monitorata in tempo reale
Allarmi al superamento di soglie (t,T)
• Qualità del prodotto
• Contenziosi con il cliente
• Miglioramento continuo
• Temperatura al cuore del prodotto
Id- Solutions s.r.l.
a Murata company
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