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Field Force Solution
Enables mobile personnel and its interactions in the field
Field Force Solution –
MOBILE FIELD FORCE MANAGEMENT & COMMUNICATION

Enterprise Systems

Mobile Field Force

Assets/ Tasks

Audit Track

Value

Location

Breakdown

Service Quality

Time / Effort

Email

WWW

RFID

Sensors

3rd party readers

Enterprise Systems

Audit Track

Value

Location

Breakdown

Service Quality

Time / Effort

Mobile Field Force

Assets/ Tasks

Audit Track

Value

Location

Breakdown

Service Quality

Time / Effort

Assets/ Tasks

Audit Track

Value

Location

Breakdown

Service Quality

Time / Effort

Current usage of the RFID technology

<table>
<thead>
<tr>
<th>Segment</th>
<th>Typical Application</th>
<th>Competitive Technologies</th>
<th>Current Penetration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access Control</td>
<td>Doorway entry</td>
<td>Other keyless entry technology</td>
<td>High</td>
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<tr>
<td>Asset Tracking</td>
<td>Locating tractors within a freight yard</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td>Asset Tagging</td>
<td>Tracking corporate computer system hardware</td>
<td>Bar Code</td>
<td>Low</td>
</tr>
<tr>
<td>Authentication</td>
<td>Luxury goods counterfeit systems</td>
<td>Holograms</td>
<td>Low</td>
</tr>
<tr>
<td>Baggage Tracking</td>
<td>Positive bag matching</td>
<td>Bar Codes, Optical character recognition</td>
<td>Low</td>
</tr>
<tr>
<td>IS Applications</td>
<td>SpeedPass</td>
<td>Credit, Debit &amp; Smart cards, Mobile phones</td>
<td>Medium</td>
</tr>
<tr>
<td>W - Containers</td>
<td>Tracking containers in shipping terminals</td>
<td>GPS Based systems</td>
<td>Medium</td>
</tr>
<tr>
<td>W - Pallets</td>
<td>Tracking palletized shipments</td>
<td>Bar Code</td>
<td>Medium</td>
</tr>
<tr>
<td>W - Items</td>
<td>Identifying individual items</td>
<td>Bar Code</td>
<td>Minimal</td>
</tr>
<tr>
<td>Vehicle Identification</td>
<td>Electronic toll collection</td>
<td>Bar Code, License plate readers</td>
<td>Medium</td>
</tr>
<tr>
<td>Vehicle Immobilizers</td>
<td>Automotive ignition systems</td>
<td>Other theft prevention technologies</td>
<td>High</td>
</tr>
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</table>
Nokia Field Force Solution Architecture

- **RFID tag**
- **Operator Network**
- **HTTP(S) over GPRS or SMS**
- **LI Server**
- **Tag, Location & Event Data**
- **SMS Gateway**
- **Authentication & Authorization**
- **Administration**
- **LI Client Provisioning**
- **Database**
- **External Interface (Web Services)**
- **Customer Back-end System**
- **LI Server’s Web-based UI**

Nokia Field Force Solution Elements

1. **Nokia RFID Enabled Mobile Phones**
   - The Xpress-on™ RFID Reader shell for the Nokia 5140 phone
   - The Nokia NFC shell for the Nokia 3220 phone

2. **Local Interactions Client (LI Client)**
   - Company specific mobile phone Java application
   - For reading and writing to tags and communicating with the LI Server

3. **Nokia Local Interactions Server (LI Server)**
   - BEA™ Weblogic Application Server
   - Oracle™ database
   - LI Server Subsystems

4. **MIFARE® Ultralight, 1K and 4K RFID tags**
   - Predetermined operations are automatically performed by touching an RFID tag equipped object with the RFID reader and writer

5. **Company specific phone application**

6. **LI Client SDK**

7. **HTTP(S) over GPRS or SMS**

8. **Operator Network**

9. **LI Client**
Nokia Field Force Solution in Brief

- RFID based solution enables two-way interaction between the LI Client software, Nokia LI Server and company’s back-office systems (eg ERP, CRM)
- Cost-effective data management solution for field service companies
  - Work scheduling & workflow management
  - Task management
  - Real-time access to information databases
  - Locationally relevant information in real-time
  - Send information on location, reporting work time or task status from the field
  - Receive service instructions or work assignments in the field

Real-time, Two Way Reporting: When, Where, Who & What

- Real-Time Work Attendance
- Proof of Completed Work
- Service & Work Instructions
- Workflow Management

<table>
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<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Employee</th>
<th>Action</th>
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</thead>
</table>
Customer Segments & Industries

- Security & Guarding companies
- Utilities & Waste Management companies
- Services & Maintenance companies
- Outdoor Advertising companies
- Healthcare & Home Nursing sector
- Government sector

Customer Segment-Use Case Matrix

<table>
<thead>
<tr>
<th>Industry / Segment</th>
<th>Maintenance &amp; Repair</th>
<th>Utilities</th>
<th>Security &amp; Guarding</th>
<th>Pharmaceuticals</th>
<th>Healthcare</th>
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</tbody>
</table>
Benefits of the Nokia Field Force Solution

- **Ease of use**
  - Touch to initiate a service
  - Easy to input essential data

- **Low cost device and solution**
  - Xpress-on™ RFID Reader shell or NFC shell
  - RFID reader technology evolution: cost/size/power consumption

- **2 in 1 device**
  - Only one small rugged device for multiple purposes
  - Phone + reader + GPRS connection + Push to talk + …

- **(Near) Real time system response**
  - Real time reporting of time and attendance
  - Real time reporting of exceptions
  - Two way instant communication with back-end system

- **Pay as you grow**
  - License fee is based on the amount of users
  - No 3rd party license and HW purchase is needed, low start up costs

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Building Real-Time Enterprise
Nokia Field Force Solution

Improves the efficiency of mobile employees and reduces data-capture errors, which increases customer satisfaction and the profitability of field activities.

**ALL-ROUNED BENEFITS:**
- Improved data quality: real-time information to and from the field
- Better service: clear proof of a completed work task
- Cost savings: improved data distribution and accessibility
- Ease of use: simple touch operation for data collection and retrieval
- Increased efficiency: replacing paper processes with automated messaging

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Nokia
Connecting People
Questions?