Industrial Internet of Things Solutions
We deliver Industrial Internet of Things (IIoT) solutions, customized to your application. You can focus on your domain-specific analytics, without worrying about the complexities of IoT.

In case our standard products are not the right fit for your needs, we’ll get you from idea to new product launch in just 3 months.

We’d love to talk to you. Please contact us at info@redlore.com.

2. The Gateways forward Wireless Sensor Node data to the cloud via a cellular (4G/LTE), WiFi or Ethernet connection.

3. The cloud servers store the sensor data and execute application-specific algorithms, analytics, and Artificial Intelligence to transform the data into knowledge.

4. The Dashboard visualizes the sensor data and generates insights.
Multiple sensors capture physical properties from the real world: temperature, humidity, air pressure, VOC, eCO\textsubscript{2}, acceleration, vibration, sound level, light level, magnetic field, proximity, rotations-per-minute, open/close,…

Sensor values are sent to the gateway over the other wireless sensor nodes. Optionally sensor values can be preprocessed using analytics and AI on the Wireless Sensor Node.

The Near-Field-Communication (NFC) interface integrated within the Wireless Sensor Node talks to the accompanying smartphone app for configuration and diagnostics.

The Edge Analytics Sandbox runs custom application analytics and AI on the node, easily programmable by the data scientist.

Multiple battery options ranging from a simple coin cell to an industrial grade low self-discharge battery, providing up to 20 years of autonomy.
Low Power Wireless Mesh Network

In a mesh network, a message hops from one wireless node to the next until it finds its way to the gateway. Networks can grow practically unlimited in size as long as there is another node in sight, typically 25m (80ft) indoors and 100m (300 ft) outdoors.

All nodes can be ultra-low-power and still act as repeaters for other nodes. Device authentication and end-to-end encryption provide secure communication.

Firmware updates are done wirelessly, over-the-air. No need for local intervention.
Cellular Gateway (4G/LTE)

The gateway collects messages from the wireless sensor nodes, pre-processes them if necessary and sends them to your cloud.

The gateway provides a cellular, 4G and Ethernet connection to the cloud. So you don’t depend on access to the on-premise network.
The RedLore Edge Analytics Sandbox runs your analytics and Artificial Intelligence (AI)/Machine Learning (ML) algorithms inside the Wireless Sensor Node and inside the gateway.

By balancing the analytics between the sensor node, the gateway and the cloud, we achieve the best combination of power consumption, network size and message latency.
Near Field Communication (NFC) turns an NFC-equipped smartphone into a powerful interface to the NFC-equipped Wireless Sensor Node.

The accompanying smartphone app will interrogate the node for monitoring and configuration, even without having the full network installed and deployed. This boosts the efficiency of installation and troubleshooting.
The wireless sensor data can be ingested into most popular dashboarding platforms. Haven’t made you choice yet? Start from RedLore’s standard dashboard platform templates.
RedLore’s Device Power Management allows for up to 20 years of battery life, in harsh conditions with wide temperature swings. Battery replacement, which often means full product replacement, is a thing of the past.

Based on your requirements we select the right battery chemistry, form factor and size.
Sometimes standard products will do the job just fine. The RL03 wireless sensor node family offers a wide variety of sensors.

### Sensor variants

<table>
<thead>
<tr>
<th>Sensor variants</th>
<th>A Full</th>
<th>B Environment</th>
<th>C Comfort</th>
<th>D HVAC</th>
<th>E Temp. internal</th>
<th>F Temp external</th>
<th>G Asset monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
<tr>
<td>Air pressure</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>eCO₂ and VOC*</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Light intensity</td>
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<td>✓</td>
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<tr>
<td>Sound level</td>
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<td>✓</td>
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<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Acceleration 3-axis</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Magnetic</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

### Common features

<table>
<thead>
<tr>
<th>Feature</th>
<th>All variants</th>
<th>Battery variants</th>
<th>Note: battery lifetime depends on device and network configuration.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFC ‘tap’ interface</td>
<td>✓</td>
<td>A CR2477 coin cell 1000mAh</td>
<td>Lifetime up to … 4 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B LiSOCl² 2400mAh</td>
<td>10 years</td>
</tr>
<tr>
<td>RGB LED</td>
<td>✓</td>
<td>Product dimensions</td>
<td>80 x 40 x 20mm 3.2 x 1.6 x 0.8”</td>
</tr>
<tr>
<td>Mesh protocol</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### IIoT ACCELERATOR KIT

**Objectives:** Designed from the ground up to enable you to test & validate Industrial IoT applications with unlimited scale, coverage, and density:

- Set performance requirements
- Identify installation challenges
- Test network in realistic environment
- Prove scalability
- Set performance expectations
- Determine power budget

**What’s included?**

- 25 RL03 Wireless Sensor Nodes
- Gateway, connecting sensors to the cloud
- Positioning Engine
- LTE modem
- Cloud-based Time Series Database
- Ready-made example dashboards
- NFC smartphone app
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