

 SMART METERING USE CASE



ČESKÉ RADIOKOMUNIKACE

# LoRa Technology: Expanding LoRaWAN™-based Network Covers 75% of the Czech Republic

CRA TRANSFORMING ENERGY & UTILITY INDUSTRIES



## CONNECTING A COUNTRY WITH TELEVISION, RADIO AND INTERNET

The Czech Republic in Central Europe has 10.6 million inhabitants over an area of 78,866 square kilometers (30,450 sq. miles). Since the 1970s, Czech Radiocommunications (CRA), based in Prague, has been the sole provider of broadcasting television and radio to citizens across the country.

In the past decade, CRA broadened its company focus to develop a national digital infrastructure. It built its own data repository center with superior computing power and a fiber-optic backbone network. The company successfully transitioned into a provider of IT business infrastructure and Internet services while maintaining its broadcasting heritage.

“Martin Gebauer, CRA’s CEO, has a vision to build a Cloud infrastructure for the Czech Republic. This achievement, combined with our existing broadcast towers, led us to believe IoT services makes perfect sense as our next business evolution.”

—Jan Skabrada, IoT Partnership Manager, Czech Radiocommunications

## IOT BRINGS NEW ERA OF INFRASTRUCTURE SERVICES

Semtech’s LoRa® devices and wireless radio frequency technology (LoRa Technology) is a proven long-range, low-power solution for Internet of Things (IoT) that gives system integrators the necessary features to deploy interoperable IoT solutions.

CRA has been providing commercial IoT services to businesses since 2016. Its LoRaWAN™-based network currently covers 75% of the population across the Czech Republic with plans for continued deployments in low density areas.

“We chose LoRa Technology for many reasons. Our IoT business is growing based on this technology and our partners love it.”

—Jan Skabrada, IoT Partnership Manager, Czech Radiocommunications



## DNA of IoT Use Case

### IoT Challenge

- Replace manual water, electricity and gas metering
- Reduce utility consumption and waste
- Ability to pilot new technology to resolve industry issues

### LoRa Technology Used

- LoRa delivers low-power wireless technology
- LoRaWAN-based network provides coverage to 75% of country
- Wirelessly connected sensors communicate data to the Cloud

### Business Value

- Real-time water management end-to-end solution
- Reduce household energy consumption by 30%
- IoT communication at a fraction of the cost of other wireless technologies

## HOW IT WORKS: CRA



*The step-by-step process of CRA's LoRa-enabled solution.*

CRA offers complete, end-to-end solutions for collecting, measuring and visualizing data. Customer data is securely stored in the CRA IoT Cloud and is accessible through a desktop, tablet or mobile device. Within the application, analytics, reports and charts can be exported, emailed or texted.

IoT projects are underway in various segments including smart industry, smart city, agriculture, environment, and CRA's most adopted sectors: energy and utilities. CRA not only provides the connectivity infrastructure, but also plays the role of integrator by orchestrating its ecosystem of hardware and software application partners.

### **SMART METERING FOR WATER, ELECTRICITY, GAS AND MORE WITH 30% OF SAVINGS**

IoT.Water, CRA's largest customer, develops and delivers comprehensive remote water meter-reading systems for public utility companies to automatically monitor their customers. The state-of-the-art solution comes with an integrated server, database, software and devices. IoT.Water's existing pilot project has 8,000 active devices with plans to expand to 20,000 by the end of 2019.

CRA has partnered with visionQ, a technology start-up, to develop ProLoRa, a unique energy control system saving users up to 30% on utilities. The end device, called Eliot, connects to household or business electricity meters and makes them "smart" by collecting accurate, real-time electrical consumption information and evaluating this data through an application. Trend reports, projected expenses and cost-saving advice are provided to help end users reduce their energy costs.

*"The aim of this competition is to discover ideas, applications and future alternatives using the CRA LoRaWAN-based network. When designing their applications, participants can take advantage of data from existing sensors operated by CRA and our partners."*

—Milos Mastnik, Sales Director,  
Czech Radiocommunications



-20 dB

Communication  
below white  
noise limits



10 years

Battery  
life in  
equipment



1,000

Target number of CRA  
LoRa broadcasting points  
for the IoT network

For gas metering, CRA is working with one of the country's leading gas service providers. A pilot project has just been initiated to monitor gas usage of the company's industrial customers. Hundreds of LoRa-based sensors are currently being rolled out into industrial, smart building infrastructures.

CRA is also committed to innovation in alternative ways with IoT. For the past three years, CRA has sponsored an annual software competition for students, start-ups and tech companies within the Czech Republic. Winning projects, such as smart benches and smart waste bins, have the opportunity to implement their ideas and receive a financial award.

For more information on CRA,  
visit [www.cra.cz/iot-portal](http://www.cra.cz/iot-portal)

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LoRa Technology platform

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Semtech's LoRa devices and wireless radio frequency technology is a widely adopted long-range, low-power solution for IoT that gives telecom companies, IoT application makers and system integrators the feature set necessary to deploy interoperable IoT networks, gateways, sensors, module products, and IoT services worldwide. IoT networks based on the LoRaWAN™ specification have been deployed in over 100 countries and Semtech is a founding member of the LoRa Alliance™, the fastest growing IoT Alliance for LPWAN applications.



Semtech Corporation is a leading supplier of high performance analog, mixed-signal semiconductors and advanced algorithms for high-end consumer, enterprise computing, communications, and industrial equipment. Semtech, publicly traded since 1967, is listed on the Global Select Market under the symbol SMTC and has more than 32 sales and application support offices in 14 countries as well as representatives and distribution support locations in more than 30 countries. Semtech is dedicated to providing proprietary platforms, differentiated by innovation, size, efficiency, performance, and reach.



The LoRa Alliance is an open, nonprofit association that has become one of the largest and fastest-growing alliances in the technology sector since its inception in 2015. Its members closely collaborate and share experiences to promote the LoRaWAN protocol as the leading open global standard for secure, carrier-grade IoT LPWAN connectivity. With the technical flexibility to address a broad range of IoT applications, both static and mobile, and a certification program to guarantee interoperability, the LoRaWAN protocol has already been deployed by major mobile network operators globally and connectivity is available in over 100 countries, with continuing expansion ongoing.