



**Canadian Natural Resources Ltd. (CNRL)**  
delivered by Connectus Global

OIL & GAS

The mustering, which used to take 120 minutes, was now completed within 12 minutes during the first drill.

**10x**

shorter completion of  
mustering

## Background

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# World Leading Independent Energy Producer

Canadian Natural Resources Limited (CNRL) is not only **the largest independent natural gas producer** in Canada, but also has **the strongest and most diversified energy asset portfolio** of any independent energy producer in the world. CNRL recently acquired the **Pine River Natural Gas** processing plant from Conoco Phillips, this facility exports low pressure LNG and sulphur.

## Goals

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# Improving Employee Safety During Turnarounds

Oil and gas is traditionally an industry with higher safety risks and the strongest efforts to minimize them. The refinery facilities experience planned and unplanned maintenance shutdowns and turnarounds. During this maintenance operation, 350 workers, most of **whom have never been on a site before**, are coming to work at the site. Not only are the place and colleagues new to them, but they are coming in with **various work habits and industry norms**. All of those just increase the level of risk in comparison to normal maintenance operation and require increased safety and preventative measures.

In case of an emergency, **a paper-based mustering system** was used at CNRL Pine River, which meant that they needed 120 minutes to complete the mustering process and some eight minutes to produce the evacuation lists at each of the mustering stations.

The objective of the **digitalization of the mustering process** was to know quickly how many people were in the safe area or in the hazardous area and to decrease the action time to help the injured ones as in these emergency situations, every second counts.

## Challenges

### 100% Reliability Required in a High-Risk Environment

In such a high-risk environment – where a single mistake can result in tragedy – **the safety and lives of those present are the top concerns and have the utmost importance**. The accuracy and reliability of the system and the time taken could mean the difference between life and death for individuals and for the whole group. All of this creates a major demand for the overall reliability of the system and poses a specific challenge.

## Solution

### RTLS and RFID Technologies Combined in a Single Solution

CNRL decided to replace the paper mustering system with the [Sewio RTLS](#) powered solution to digitize and **speed-up the mustering process**. There were seven key locations in the plant area selected to be covered with RTLS, these included the main gate, the camp facility and all muster stations. To cover the total **area of 2,800 m<sup>2</sup>** of all of the seven locations, **19 [UWB anchors](#)** were installed.

Every worker was equipped with an **employee tracking badge** that featured a Sewio RTLS tag for precise positioning and an RFID chip for access control. The tracking badge also included the so called **“panic button”** with the **“man down” feature**. When the panic button is pressed, it sends an alarm to the fire and gas system and an alert to the control room.

**Solution Numbers:**

**2,800 m<sup>2</sup>**

area covered

**19**

receivers

**350**

personnel tracked



UWB anchor (signal receiver) mounted on one of the halls.

## Results

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# Ten Times Shorter Evacuation Muster Completion

Using the digitally powered mustering system, the process is faster, more efficient, and more reliable for accounting people than the previously used paper method. It provides **instant updates of those accounted for and missing persons**, empowering management to make better-informed decisions. The mustering, which used to take 120 minutes, was now completed within **12 minutes** during the first drill. The time needed to deliver the sign in/out sheets, which happens after the completion of mustering, was reduced **from eight minutes to one second** as the evacuation list is created in real-time.

The **panic button and man down functionality** dramatically shorten the time needed to allocate the injured person, lowering the risk of the delayed arrival of medical help.

Not only is the use of the **digital mustering system** recommended for risky industries by authorities including the Canadian Centre for Occupational Health and Safety (CCOHS), but it significantly reduces insurance fees.

The digital employee tracking system also helps CNRL to create **direct force reports** on how many people went in and out of the facility, and the integration with their **access control system** allows workers to use the same badge for entering different halls and rooms.

**Results:**

**10x shorter**

completion of mustering (from  
120 minutes to 12)

**1 second**

needed to deliver evacuation lists  
(from 8 minutes to one second)

**3 months**

deployment time



UWB anchor (signal receiver) installed on the post.

## Key Factors for Choosing Sewio RTLS

- Seamless integration with **fully documented Open API**
- **Real-time decision making** based on reliable and actionable data
- Unrivalled scalability to deliver **industry-proven tracking** projects, whatever the size
- The ability to set an **unlimited number of virtual zones** easily that can be updated on a single click anytime in the future to adapt to the updates of logistic processes
- The **30 cm accuracy**, which allows the full flexibility and variability of virtual zones without any changes to the infrastructure
- Lower maintenance and **higher reliability** compared to RFID-powered systems
- **Long battery life**
- **Short time** for deployment (three weeks only)

## Partner

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A Calgary, Alberta based Company, Connectus offers a state of the art Real-Time Location System (RTLS) which uses Ultra-Wide Band (UWB) for communication and triangulation while hosting a Radio Frequency Identification Device (RFID) which come in the form of badges, tags and receivers. Specific software can then be used to locate a wide range of assets in many different settings.

Our team of trusted industry professionals delivers customized solutions with global innovation and multi-industry practices. When you need a complex solution, it takes a trusted partner with history executing world-class results.

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Manufacturer

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### **Sewio Networks s.r.o.**

Sewio Networks is a manufacturer of a **real-time location system (RTLS)** for indoor tracking that drives business results for companies in the intralogistics, retail, sport, entertainment and livestock industries. Sewio system is built on **ultra-wide band technology (UWB)** and delivered with RTLS Studio, remote management and visualization software.

It gives partners and customers a precise, easy-to-integrate, reliable and fully scalable IoT solution for indoor tracking that allows process visibility, boosts production efficiency, simplifies the inventory process and increases safety. Founded in 2014, Sewio is headquartered in the Czech Republic with offices in Germany and France. Sewio has 70+ system integration partners and powers customers in 37 countries. Customers include: Volkswagen, Budvar, Pirelli, Matador, TPCA, Škoda.

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