TECH OFFER

# Practical IoT Solutions for Facility Management, Asset Tracking and Digital Medicine

## KEY INFORMATION

TECHNOLOGY CATEGORY:
**Green Building** - Sensor, Network, Building Control & Optimisation
**Infocomm** - Internet of Things
**Infocomm** - Smart Cities
**Logistics** - Inventory Management
**Green Building** - Indoor Environment Quality

TECHNOLOGY READINESS LEVEL (TRL): **TRL9**
COUNTRY: **CANADA**
ID NUMBER: **TO175148**

## OVERVIEW

This technology provides simple, practical, and reliable IoT solutions designed for seamless integration and easy deployment across various industries, including Facility Management, Smart Cities, Asset Tracking, and Digital Healthcare. The solutions are designed for high reliability and low total cost of ownership, featuring easy deployment that requires minimal technical expertise. The technology is built with a carrier-grade design approach, ensuring robust performance and exceptional system longevity. It supports extensive scalability and security features, making it ideal for both public and private network operators. The flexible architecture allows for integration with existing digital infrastructures, facilitating improved operational efficiency and data-driven decision-making, and driving forward the digital transformation agenda

This offering is particularly suitable for enterprises seeking to implement smart technologies in utilities, facility management, healthcare systems, and industrial IoT environments.

## TECHNOLOGY FEATURES & SPECIFICATIONS

The technology consists of IoT gateways and sensors leveraging LoRaWAN technology, known for its low power consumption and long-range connectivity advantages. The system features include Carrier-Grade design, advanced data analytics, and extensive scalability. It is secured with strong protocols, ensuring data integrity and privacy.

Ideal collaboration partners are telecommunications operators, urban planners for smart city initiatives, healthcare institutions advancing in digital solutions, and enterprises looking to deploy their own private IoT networks. These partners will gain from the technology's low-power, long-range capabilities, allowing them to deploy low-maintenance solutions over large areas.

## POTENTIAL APPLICATIONS

This IoT technology, utilizing LoRaWAN's capabilities, is versatile enough for deployment across multiple sectors. Key industries include:

- **Smart Cities:** Enhancing urban infrastructure through applications like smart utilities, traffic management, environmental monitoring, and public safety systems.
- **Facility Management:** Optimizing operations in commercial and residential buildings through energy management, predictive maintenance, property protection (ie. leak monitoring) and security systems.
- **Healthcare:** Deploying digital healthcare solutions such as remote patient monitoring, medical asset tracking and environment monitoring
- **Utilities:** Facilitating smart grid technologies, water management solutions, and utility usage monitoring to improve efficiency and reduce operational costs.
- **Agriculture:** Supporting precision agriculture techniques with soil monitoring, crop health tracking, and automated irrigation systems.

The technology owner is seeking collaboration with deep-tech companies specialising in AI development for IoT applications to enhance the value of their solutions. Specifically, they aim to partner with experts in on-device or edge AI for low-power operations, focusing on areas such as anomaly detection, predictive maintenance, and sensor data analysis. Additionally, they are looking for partners with expertise in cloud-based AI to improve data processing, model training, and analytics capabilities.

The technology owner is focused on expanding into new markets, particularly in the ASEAN region, and is seeking local collaborators with strong R&D capabilities, deep market knowledge, and a proven track record of success. By working together, they aim to tailor solutions that meet the specific needs of these markets, driving innovation and ensuring a competitive edge.

## UNIQUE VALUE PROPOSITION

This technology significantly advances the state-of-the-art in IoT solutions through its use of LoRaWAN technology, which provides unique benefits over traditional IoT systems:

1. **Extended Range and Penetration:** Unlike conventional Wi-Fi or cellular-based IoT systems, LoRaWAN offers a far reaching signal that can penetrate dense urban infrastructures and reach rural areas without requiring extensive power or

infrastructure, making it ideal for wide-area IoT applications.

2. **Low Power Consumption:** The technology is designed for minimal energy use, enabling devices to operate for years on a single battery charge. This is a critical advantage for IoT applications where frequent battery changes are impractical, such as in environmental sensors or remote locations.
3. **High Network Capacity:** It supports thousands of nodes over a single network without significant loss of performance, catering to the growing demands of urban developments and large-scale industrial deployments.
4. **Cost-Effectiveness:** The setup and operational costs are significantly lower than those of traditional cellular networks, providing a more affordable solution for businesses and municipalities looking to implement IoT solutions.