FRIM, the Field Remote Infrastructure Monitoring System, is the UN's Internet of Things (IoT) ecosystem for remote and automated data collection, infrastructure monitoring, and control. IoT is transforming our lives, and its impact on the UN is equally profound.

FRIM is a robust and highly scalable ecosystem tailored to the UN's needs. Launched in 2016 by UNGSC, it was initially developed to provide a unified tool for monitoring all critical parameters of our data centre.

FRIM ecosystem consists of two main components:

1. Physical Layer: Sensors and Devices that collect raw data and send it to the platform.

2. Application Layer: This is where data is organised, analysed, visualised, and stored. It has a global reach, and the data are available for multiple UN environmental applications.

What does FRIM measure? Primarily Wastewater Treatment Plants (WWTP), water, fuel, and energy consumption and production. Additionally, we can monitor tank levels, air and water quality, HVAC systems, UPS units, waste bin sensors, weather stations, and more.

Sensors are connected to the system through two robust and reliable communication infrastructures:

- A long-range wireless infrastructure using LoRaWAN technology that doesn't require cables. It's ideal for rapid deployment and perfect for collecting data on water consumption and air quality from staff accommodations.

- A cabled infrastructure, ideal for controlling and monitoring complex environments like data centers or generator clusters in real-time.

The next target is the integration of remote data acquisition and control. A prime example of FRIM's integrated monitoring and control capabilities is the generator auto-fueling system. We can remotely start a pump to refill a generator's daily fuel tank when the fuel level drops below the warning threshold, avoiding the risk of moving personnel, preventing power outages, and ensuring continuous service.

The FRIM ecosystem is extensive and continues to grow. More than 8,000 sensors are connected to the platform, providing over 30,000 TAGs (single measurements) from more than 20 UN entities.

The UN is currently using FRIM data to:

- Increase efficiency in using scarce resources and optimise consumption, helping the UN achieve its ambitious sustainability targets and reduce its global carbon footprint as per the 2030 Agenda.

- Perform preventive maintenance and predictive analysis to enhance services availability and business continuity.

- Support with detailed reports data-driven decision processes.

- Improve staff safety.