



Jal Jeevan Mission

Smart Rural Water Management



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Technological Interventions and Innovations

Technology offers solutions to address most of the challenges. However, in some cases, due to complex nature of challenges, the available technology is unable to provide a comprehensive solution and hence innovative solutions are required.

Innovations in drinking water sector.

- Artificial Intelligence (AI).
- Data Analytics.
- Block-chain technology.
- Machine learning.
- Nano-technology.

Reverse Osmosis System



Nano technology based



Fibre Reinforced Plastic (FRP)

These systems can be used for any water treatment application including sea water filtration.



Chemical Removal Water Treatment Filters



GIS mapping of existing & proposed infrastructure

Tantraypora - Goom
Ahmed Pora- Tanyeray
Water Supply Scheme
Under Jal Jeevan
Mission

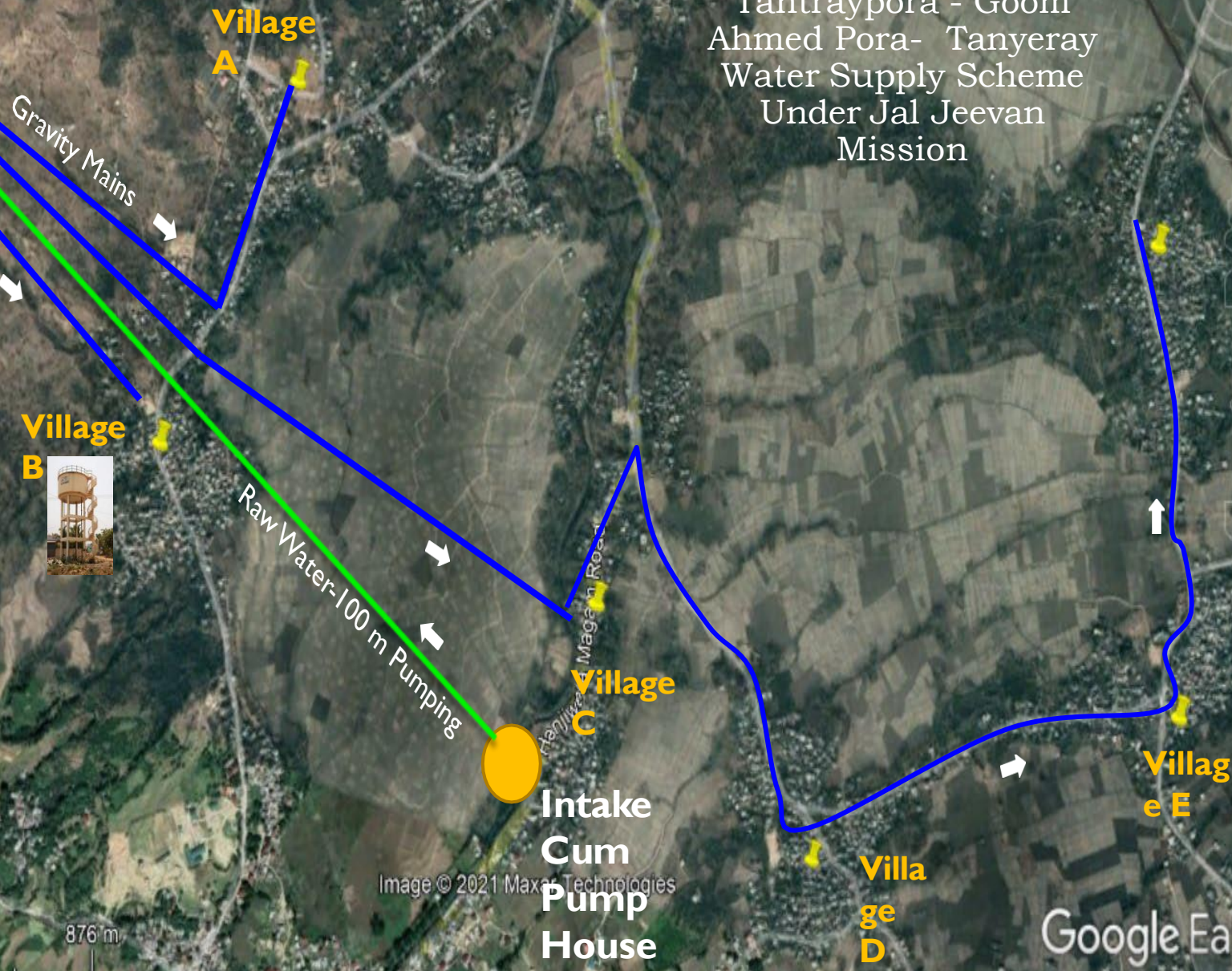


Image © 2021 Maxar Technologies

Google Earth



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Intra Village GIS Mapping





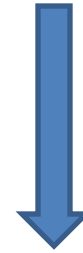
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Functionality of FHTC

Smart Monitoring System



SCADA



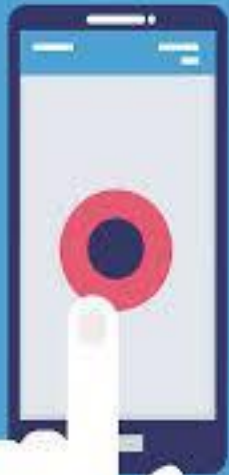
IOT Based Sensor

Monitoring

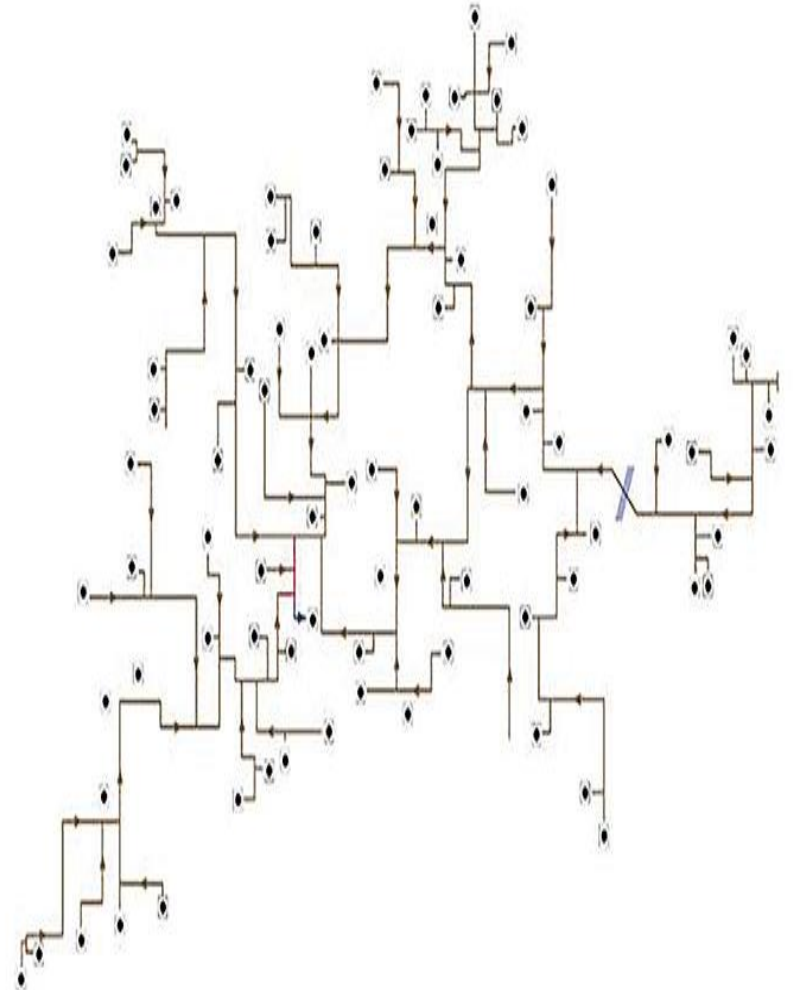
- Use of sensors for monitoring water level, discharge, water quality, automatic motor operation, data logger for capturing the data.
- Use of Supervisory Control and Data Access (SCADA) system in MVS.
- real time dashboard to constantly monitor the functionality of household tap connections.
- monitoring tools to be used by PHED/ RWS Department



INTERNET OF THINGS



IOT Based Pipe line leak detection system



IOT Sensor for Water Applications

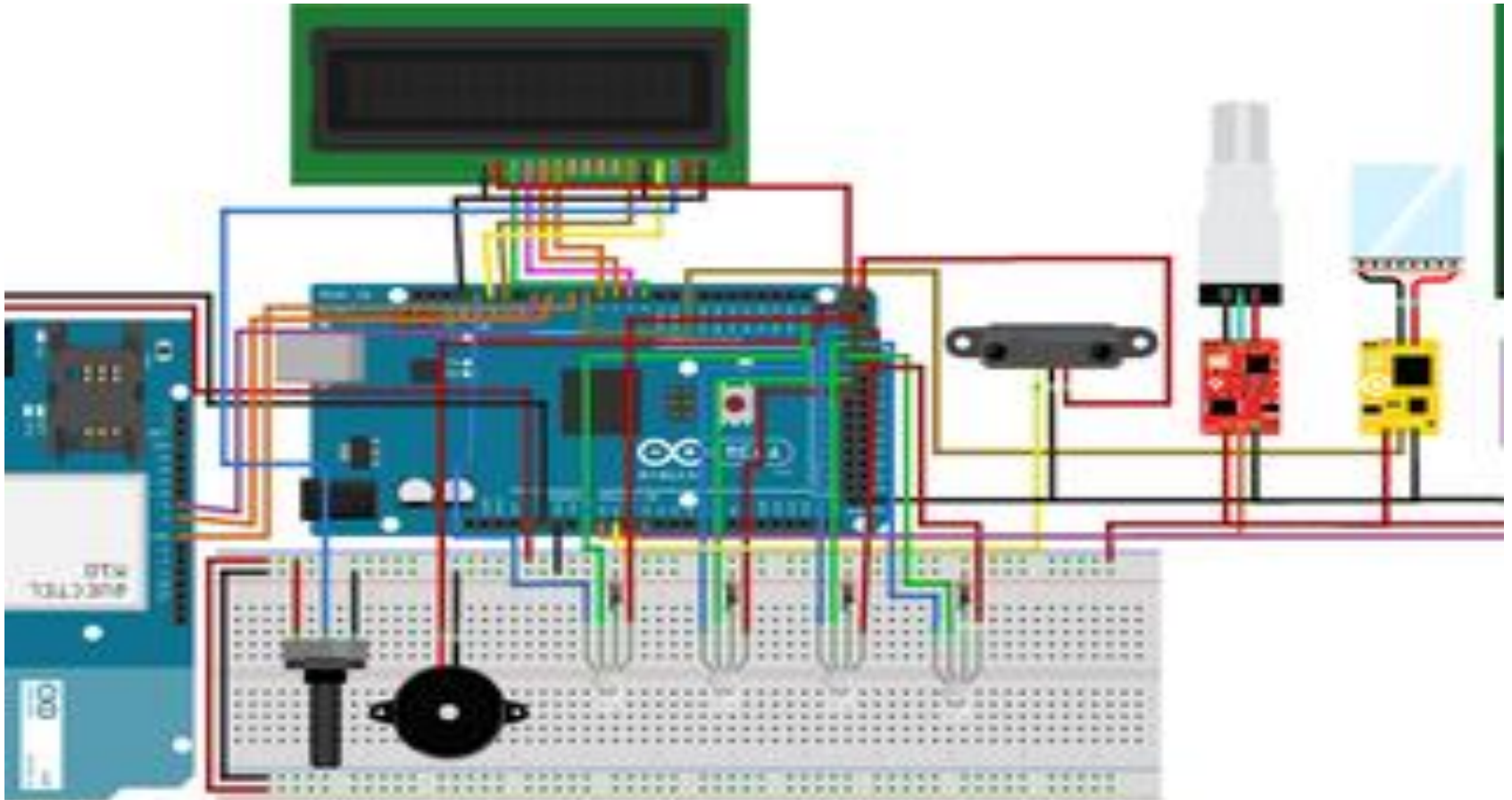


Pressure Sensor

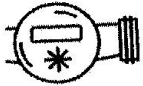


Water Flow Sensor

IOT Based Water Quality Monitoring System

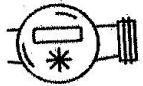


Device Functionality



Bulk Flow Meter

Records volume of water flowing through the meter (100 mm) from main supply line in the form of pulses



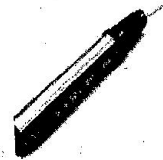
Consumer Flow Meter

Records volume of water flowing through the meter (25 mm) in the form of pulses at the consumer end



Pressure Sensor

Records the water pressure in the supply line at the consumer end in the form of digital output



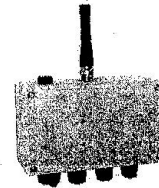
Residual Chlorine Sensor

Records the free residual chlorine level in the supply line water at the consumer end in the form of digital output



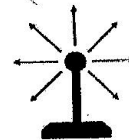
Hydrostatic Level Sensor

Records the water column level in the borehole in the form of digital output



Lora RTU (Remote Terminal Unit)

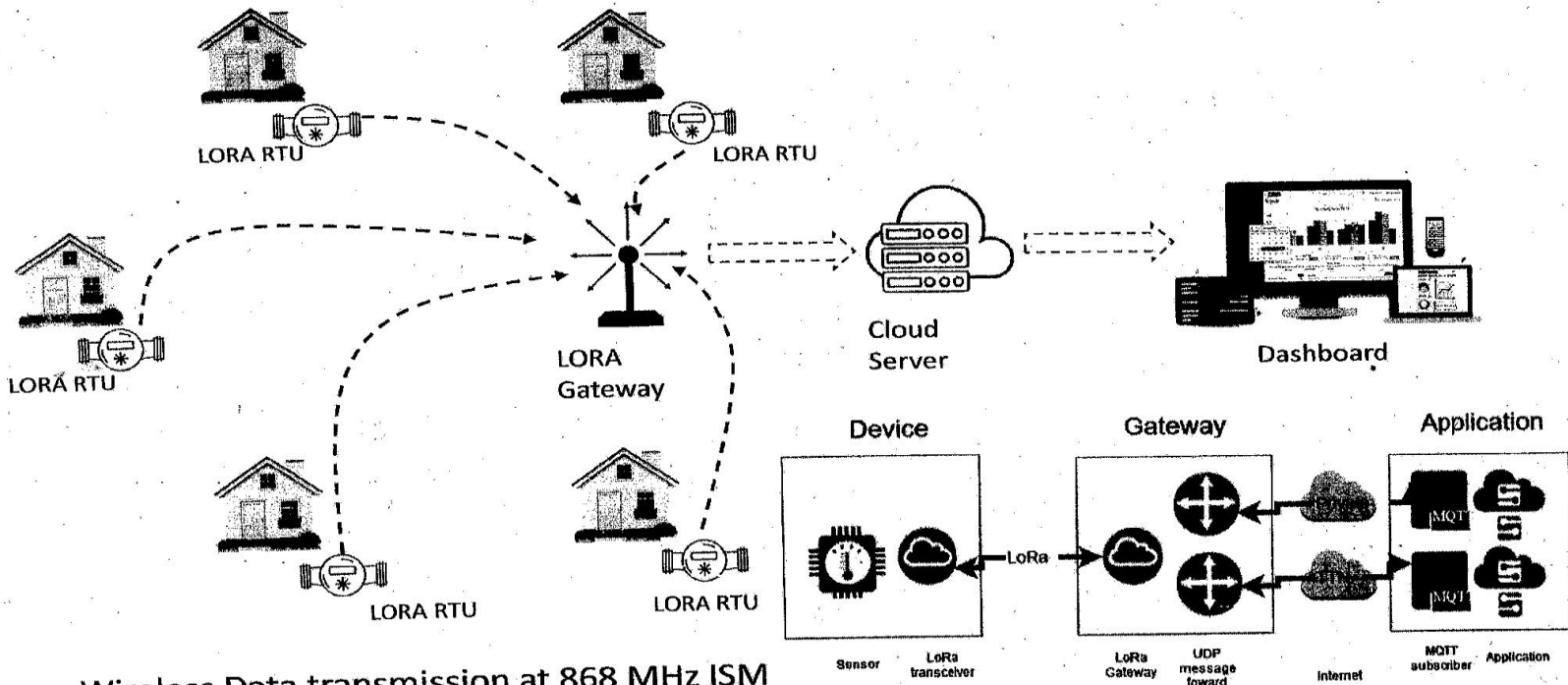
Collects the real-time analog, Digital and pulse output from the sensors/meters and converts into electrical signal. These electrical signals in the form frequency is transmitted to the gateway wirelessly using ISM free band 868 MHz Frequency



Lora Gateway (Aggregator)

Receives the signals from all the RTU's within the range and converts back into the readable format. These decrypted sensor data is sent to the cloud server using cellular network. At the server the data is processed into useful analytics and graphical representation is displayed in the dashboard

Private Network Infrastructure Architecture



Wireless Data transmission at 868 MHz ISM free band using Lora technology

Wireless Data transmission through internet



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Water is the elixir of life

THANKS