

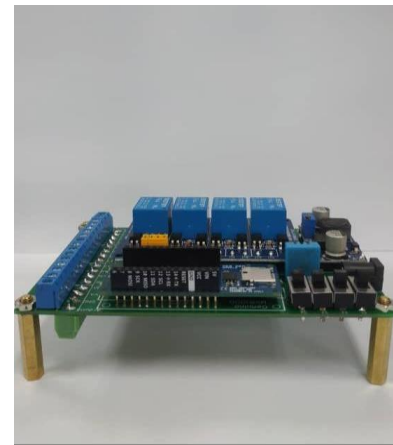
UFRA TECH



UFRA TECH SDN. BHD. (Reg. No 1433019-M)

Smart data logger are perfect wherever remote processes require automatic supervision and real-time monitoring. The Smart Data Logger combine with communication capabilities, connects battery-powered, autonomous monitoring and GSM networking to provide low-cost, low-maintenance monitoring of highly dispersed assets.

Engage with us for complete system and we provides an economic and flexible solution for remote data logging system.



Projects:

1) Smart Data Logger for Real time Monitoring of soil pH and Cathodic Protection Monitoring Unit (pH-CP RMU) of Gas Pipeline Network.

- Gambar 1

2) Smart Data Logger for Real time Cathodic Protection Monitoring Unit (CP RMU) of Gas Pipeline Network.

- Gambar 2

3) Study of Correlation between Impressed Current Cathodic Protection Systems (ICCP) of Gas Pipeline with Telluric Current.

The buried gas pipelines are potentially vulnerable to space weather. During the periods of enhanced geo-magnetic activity, the potential differences between the pipeline and surrounding soil (referred to as pipe-to-soil potential (PSPs)) may exhibit large voltage swings which outside the recommended “safe range” and lead to risk of pipeline corrosion. In order to establish the study, the digital and robust CP data logger system is designed, developed and installed at the identified Test-post for PSP recordings. The geomagnetic data will be acquired from MAGnetic Data Acquisition System (MAGDAS). The study investigate the problem of large PSP swing are predominantly due to Telluric or other possible factors. The mitigation plan will be suggested based on the findings for immediate rectification.

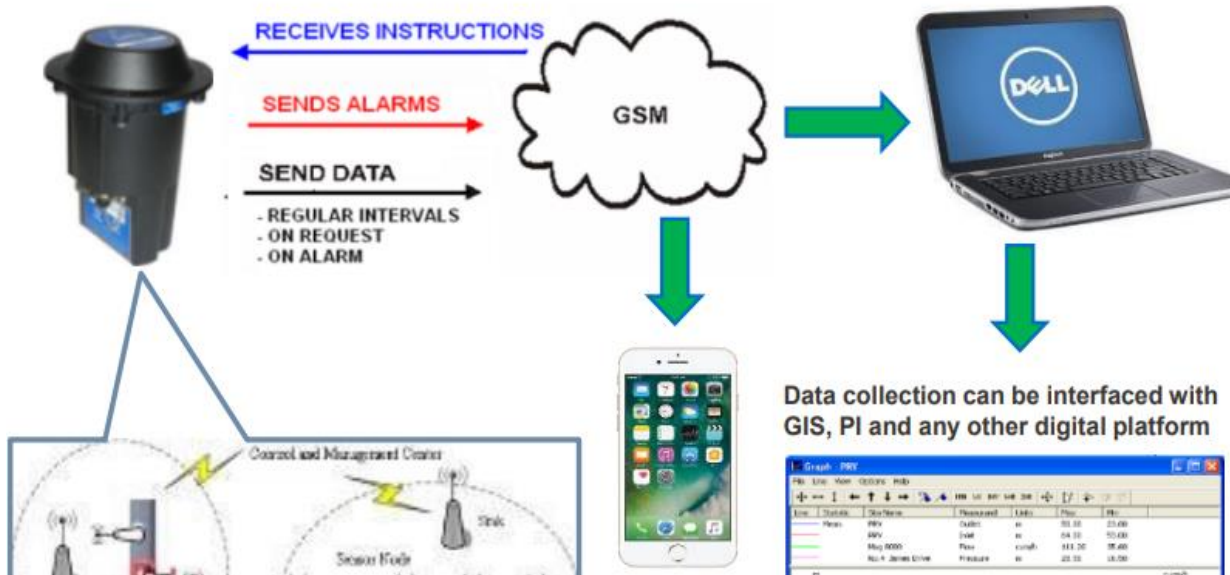
- Gambar 3

Gambar 1:

Installation of Smart Data Logger : pH-CP RMU Monitoring System at Sungai Kim Kim, Pasir Gudang



ESSENTIAL REQUIREMENTS: Digitalizing effort will provide instantaneous notification on the abnormalities, improve data collection efficiency and accuracy for analysis



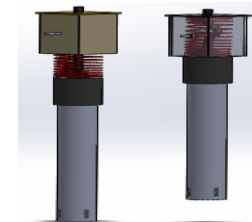
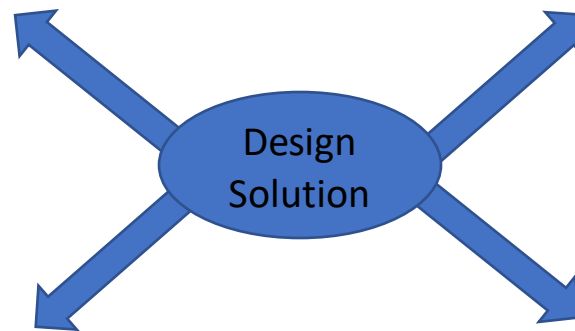
ESSENTIAL REQUIREMENTS

1. Pre-determined locations. Mostly will be areas where PGB ROW is adjacent to industries. Accessibility difficulty is generally low
2. Direct measurement to the soil, close proximity to the pipe
3. Intrusion-proof features
4. Reconfiguration to other back-end system is allowable
5. Selective data logging and processing capability
6. Option for self-sustained operation without reliance on external power
7. Maintenance free for the underground sensors (subject to manufacturer capability)

Soil pH Sensor

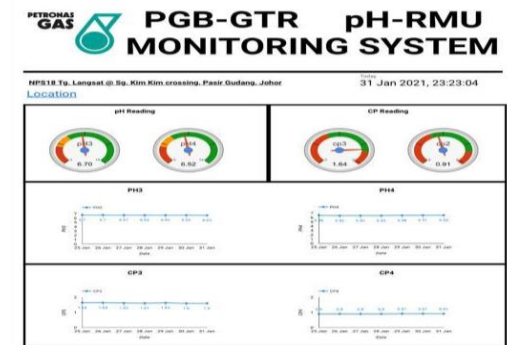


Control and Monitoring System



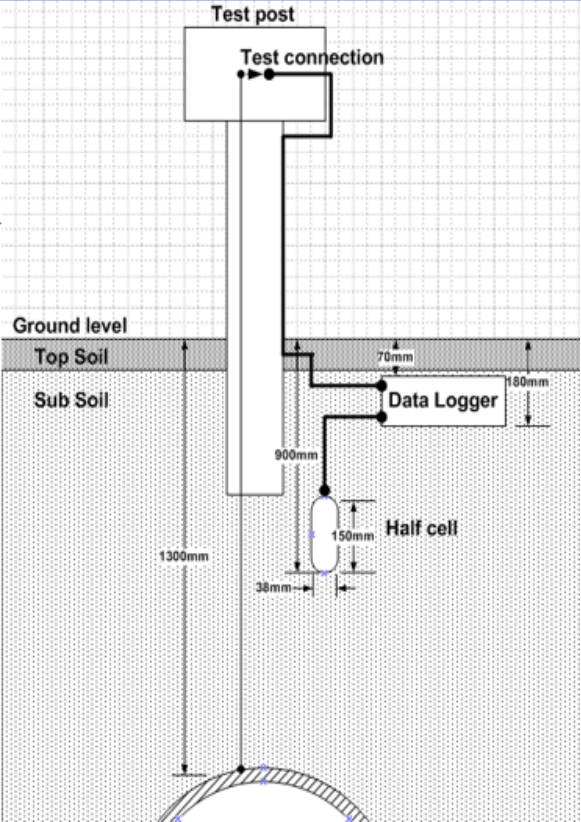
Motorized Mechanism

Back-end System



Gambar 2:

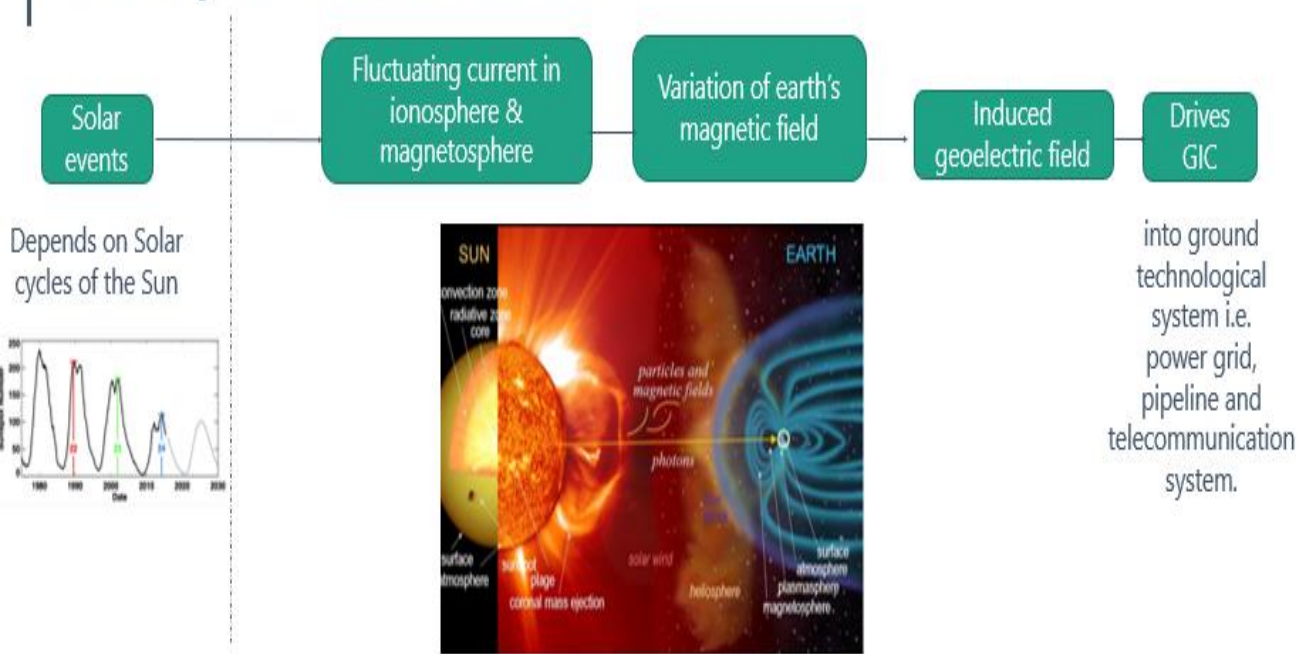
Installation of CP RMU Smart Data Logger at Gas Pipeline Northern Malaysia



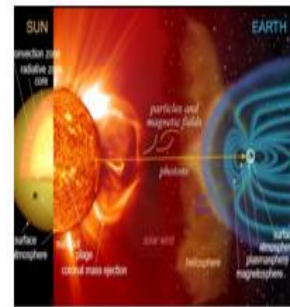
Gambar 3:

Concept of Telluric Current and Geomagnetic and Soil Condition Data Collection

Theory of Telluric current



into ground technological system i.e. power grid, pipeline and telecommunication system.



Located at Langkawi capable to capture earth electromagnetic readings at Kedah



Soil Conductivity Sensor

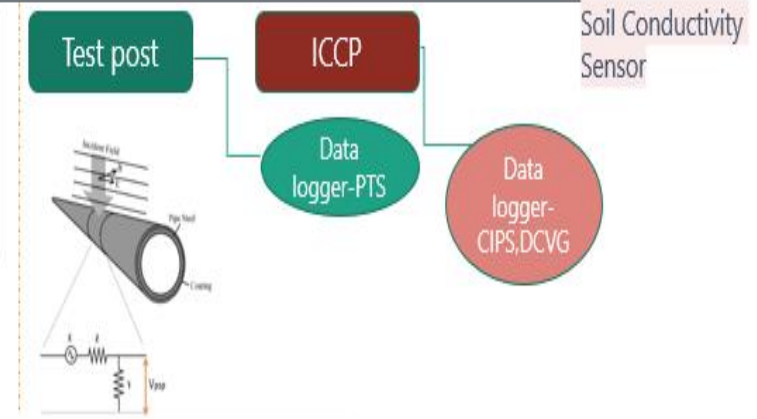


Fig. 1 : Pipeline system network

- Solar flare disturbance from Sun activities penetrate the Earth crust forming Electric field and further induced ground current due to resistance contributed by the pipeline network. This current named as telluric current will attack the underground technological system especially power grid, pipeline and telecommunication system.
- In fact, GIC also able to enhance the soil conductivity by accelerating the pipeline corrosion faster. Other factors may influence the corrosion such as pipeline topology, which need to investigate further.