

From Pipes to Pixels: The Digital Revolution in Rural Water Infrastructure: A Case Study in Serian Division



Ir. Ts. Qairuniza binti Roslan



Master of Engineering (Civil)
Bachelor Degree of Civil Engineering (Hons)



Divisional Water Engineer at Sarawak Rural
Water Supply Department (Serian Division)



8 years of experience in water supply
industry





CONTENTS

Brief History of Sarawak Rural Water Supply Department

Overview of Serian division

JBALB Serian Water Supply Infrastructures

Digital Revolution Timeline

Digital Water Supply Infrastructures

Challenges

Q&A

Sarawak Rural Water Supply Department
Jabatan Bekalan Air Luar Bandar Sarawak
(JBALB)

HISTORY OF JBALB SARAWAK





Serian Division Overview



Area of Serian Division
2,039.9 km²



Located **66km** away
from Kuching



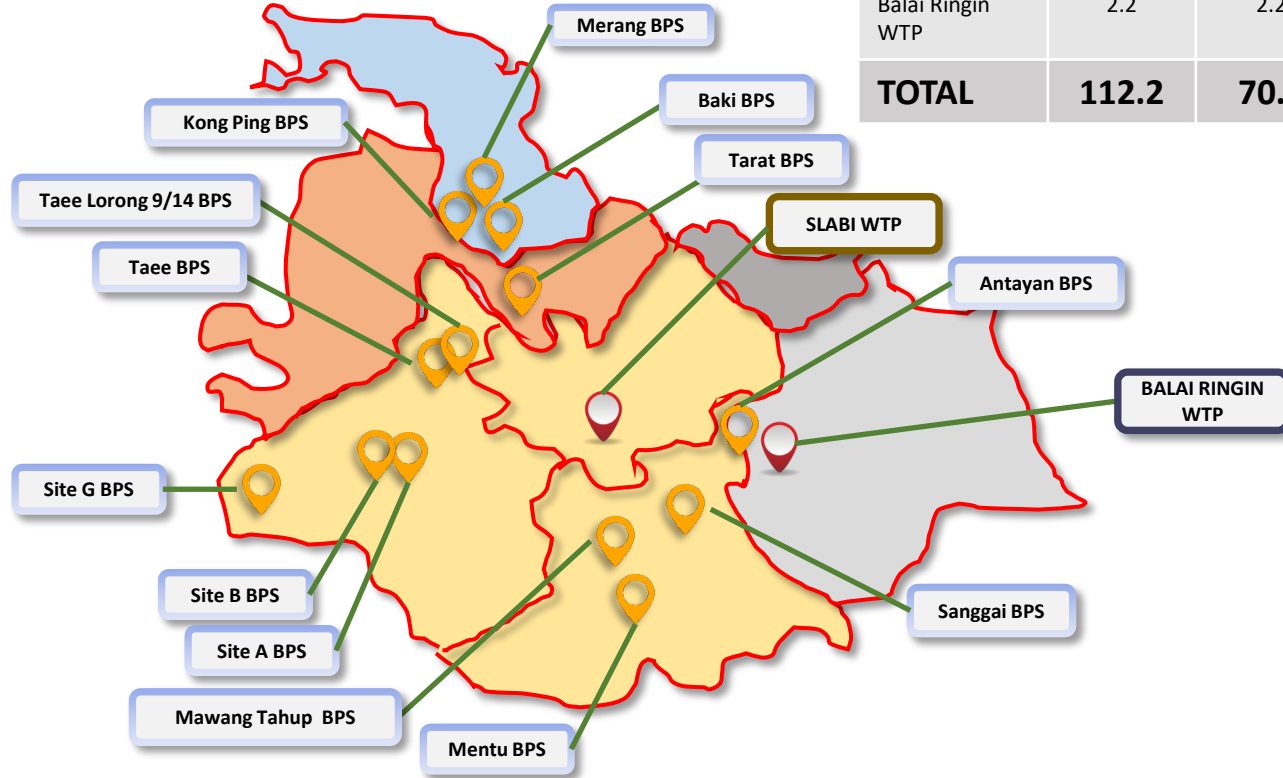
Populations
90,763



Hilly Terrain

JBALB SERIAN WATER SUPPLY INFRASTRUCTURES

ACTIVE WATER TREATMENT PLANTS	Total Design Capacity (MLD)	Active Design Capacity (MLD)	Active meter connection (Sep 2024)
Slabi WTP	110	68	23,886
Balai Ringin WTP	2.2	2.2	1,577
TOTAL	112.2	70.2	25,463



Active WTP
2 nos

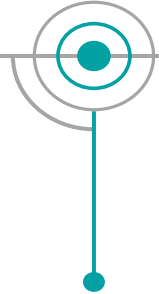
Active Booster Pump Station
13 nos

Water Storage Reservoir
13 nos

DIGITAL REVOLUTION TIMELINE



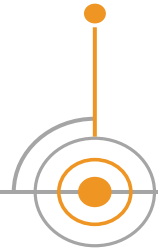
2015



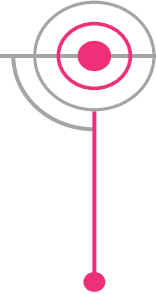
Formation of JBALB

Establishment DMAs, Advanced Pressure Management System

2019



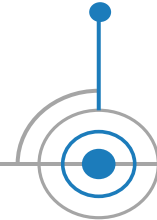
2020



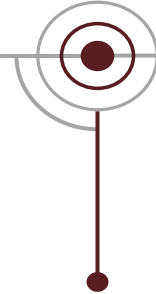
Establishment Command Centre (HQ), SCADA, Telemetry System

Implementation of Smart Meter, Digital Reading & Maintenance Monitoring

2022



2025



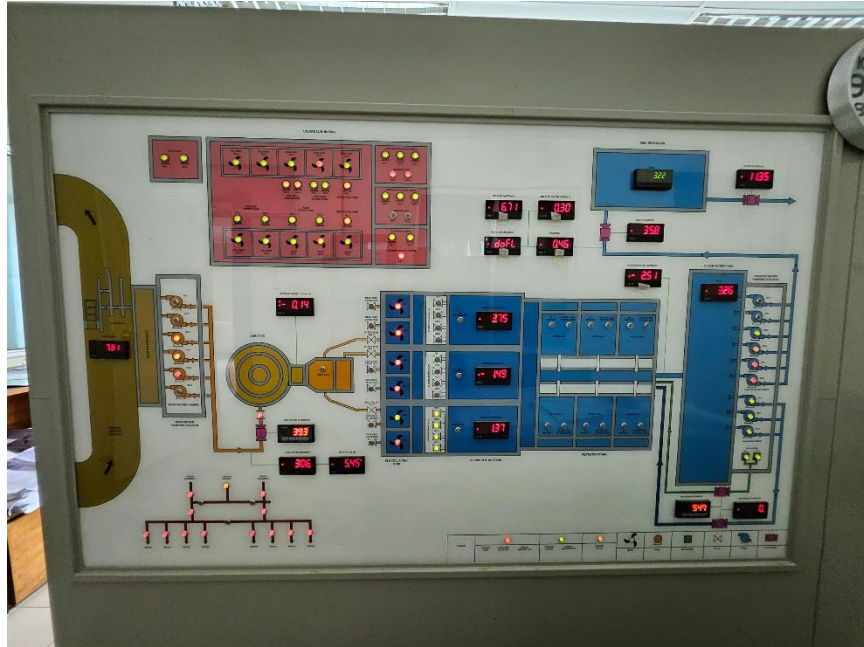
Establishment Mini Command Centre (Serian)

- Manual monitoring & checking on site,
- Take longer downtime & recovery time

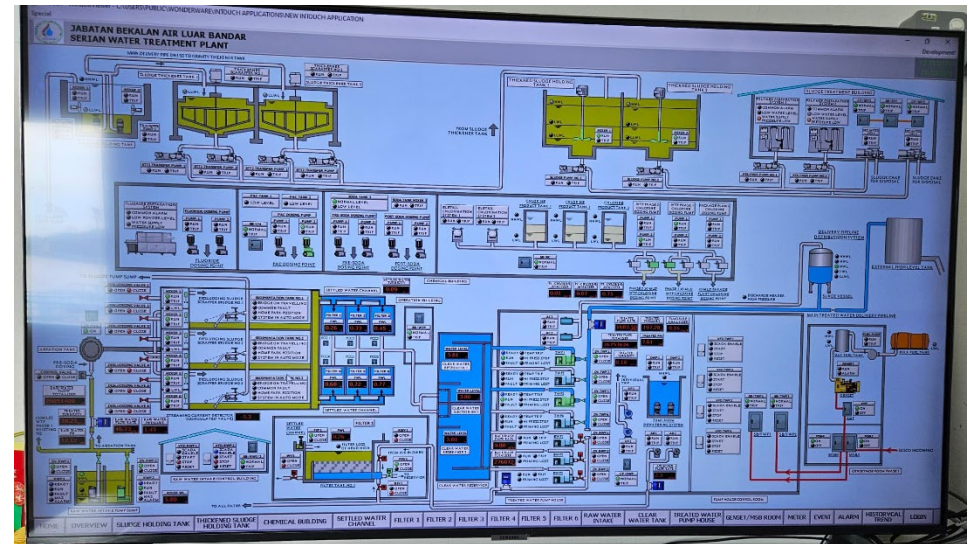
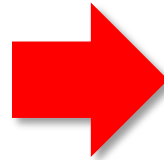
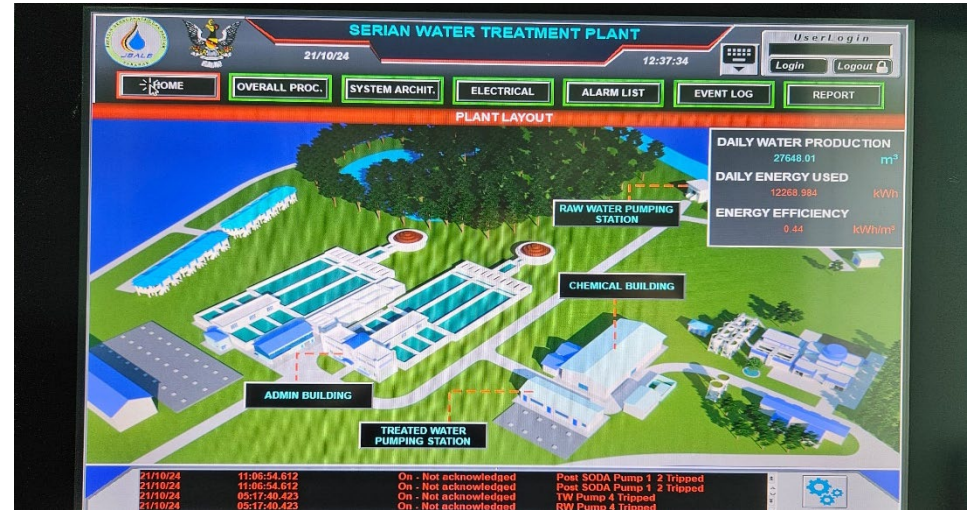
- Transition period
- Training

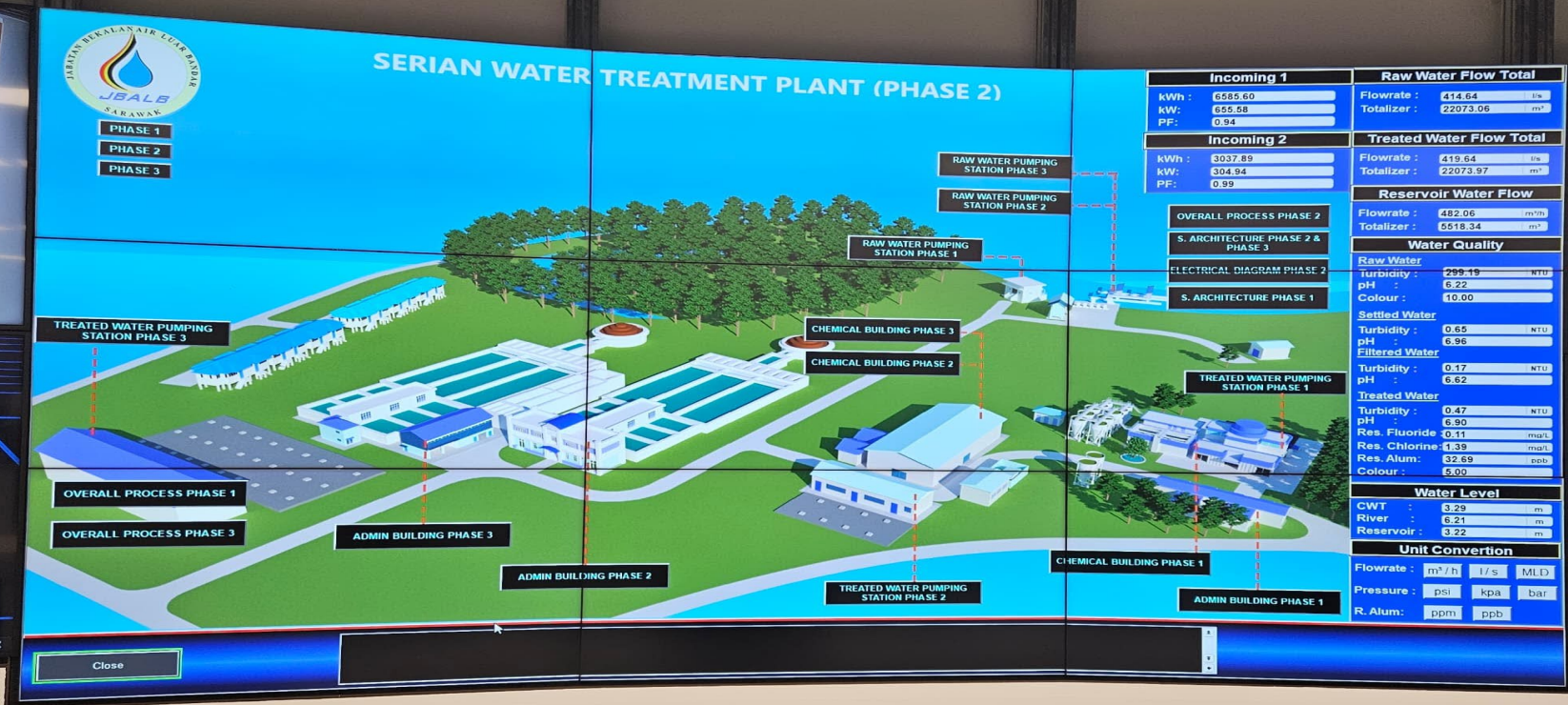
- Digital monitoring and improvement
- Shorter downtime & recovery time

2014



2024





Digital Water Supply Infrastructure

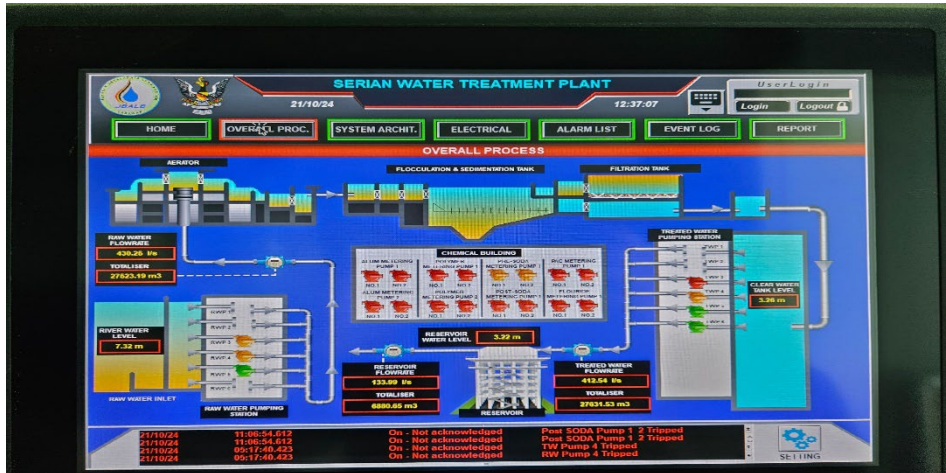
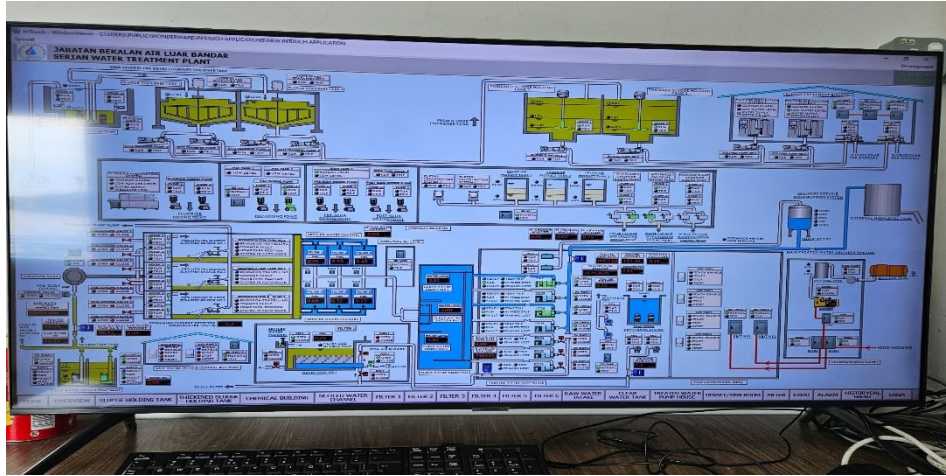
MAIN COMMAND CENTRE (HQ)



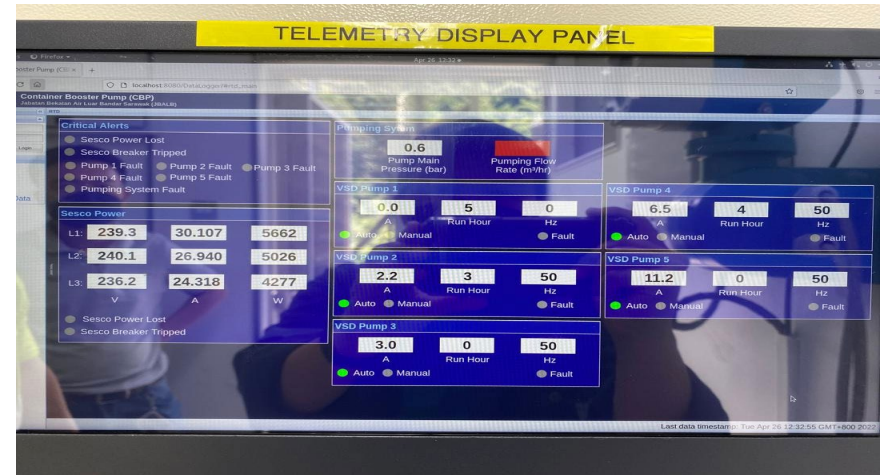
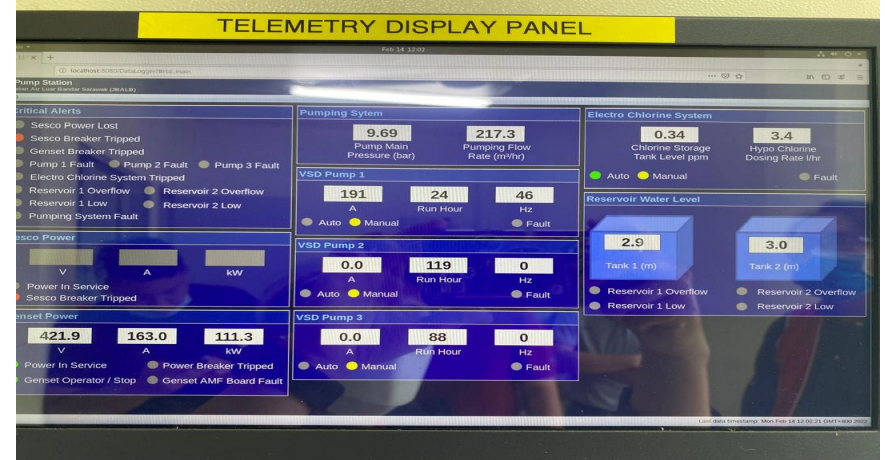
MINI COMMAND CENTRE (SERIAN)



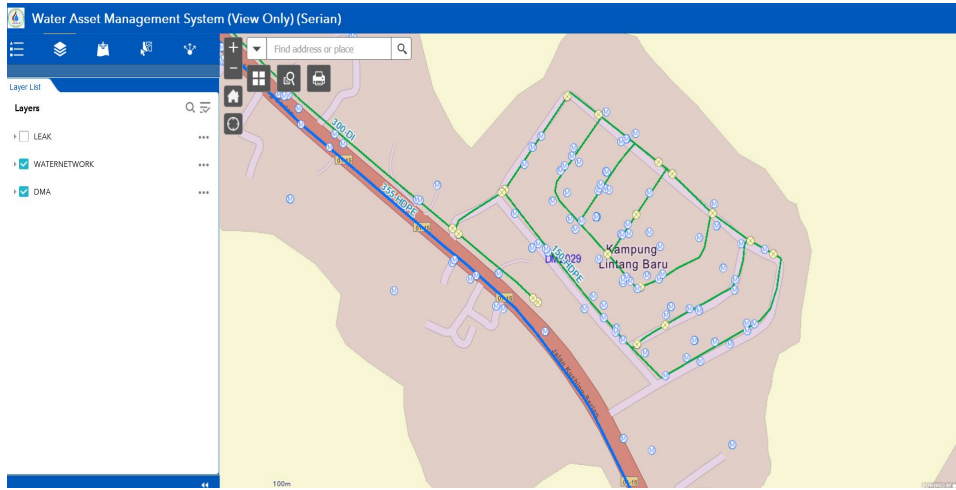
SCADA SYSTEM



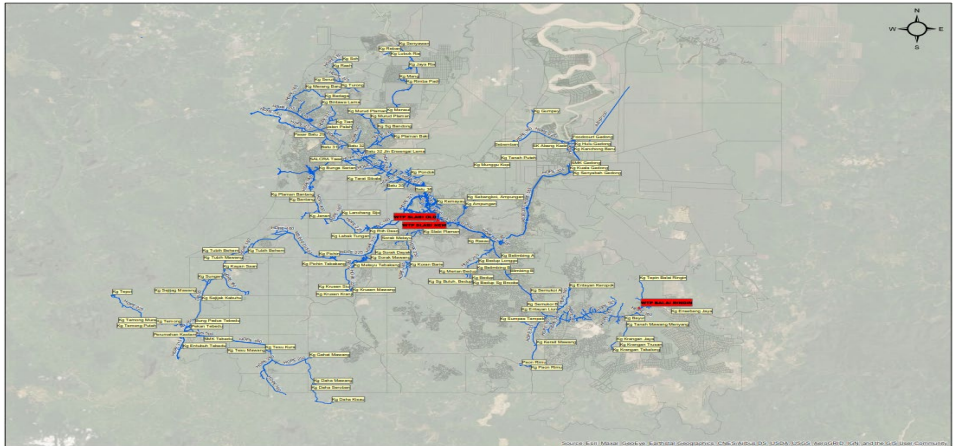
TELEMETRY SYSTEM FOR BPS



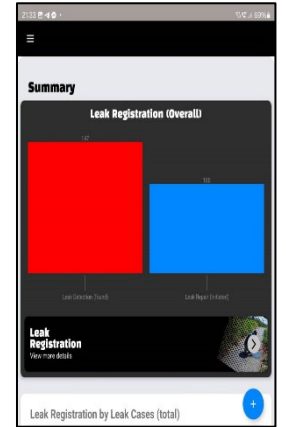
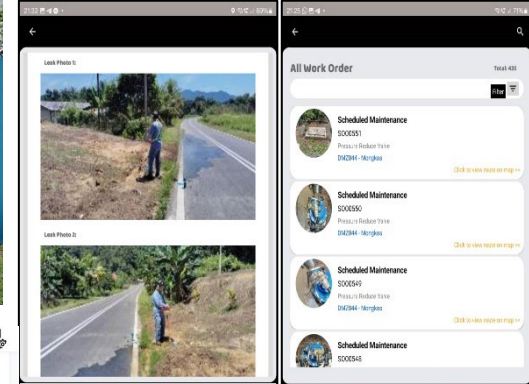
GIS MAPPING



SERIAN DIVISION



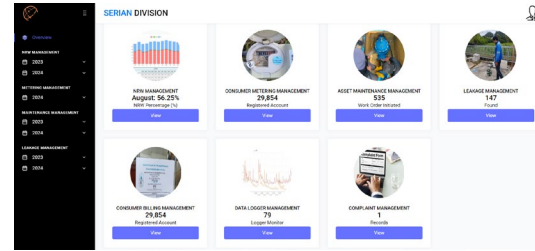
DIGITAL MAINTENANCE MONITORING



ADVANCED PRESSURE MANAGEMENT SYSTEM

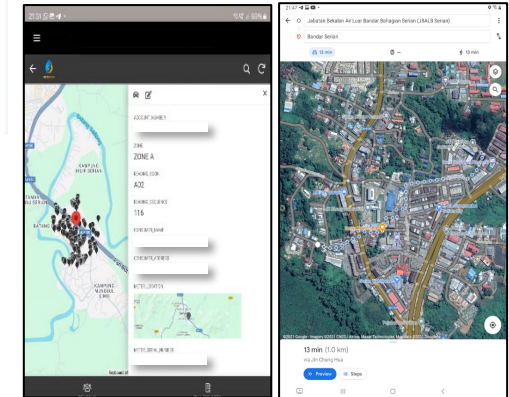
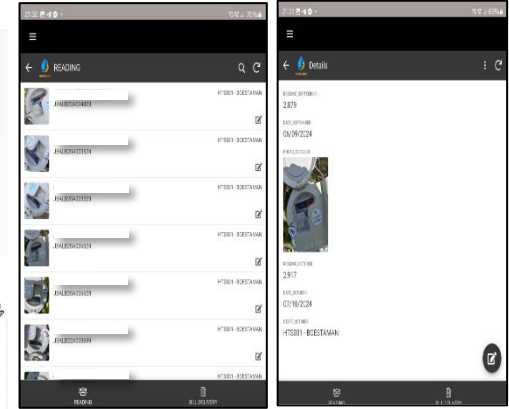


SMART METER & DIGITAL READING SYSTEM

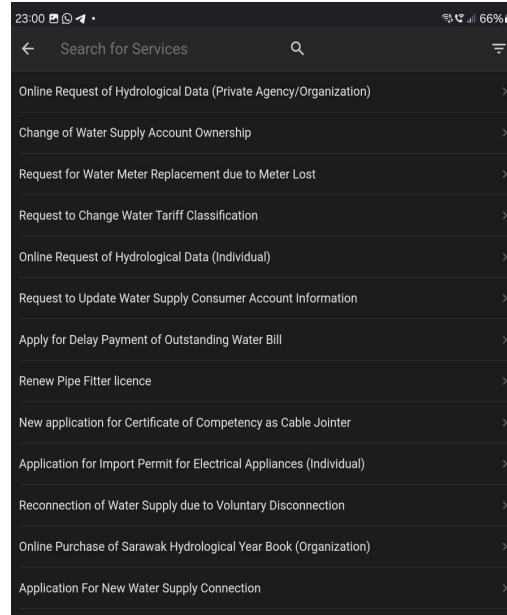
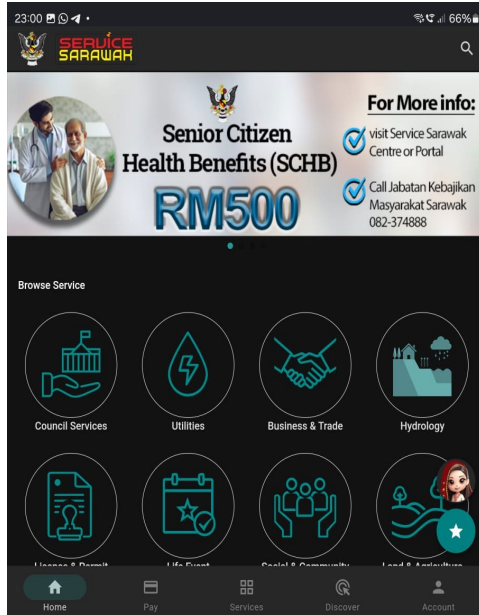


SERIAN DIVISION

ID	Street	Street number	Prolifera	Position
879A000001			1002	
879A000002			948	
879A000003			948	
879A000004			943	
879A000005			943	
879A000006			943	
879A000007			949	
879A000008			1005	
879A000009			1054	
879A000010			915	
879A000011			940	



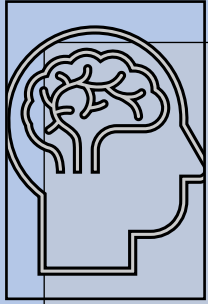
METER APPLICATION SERVICES



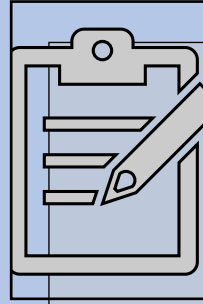
BILL PAYMENT



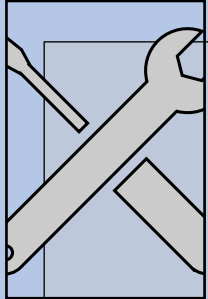
CHALLENGES



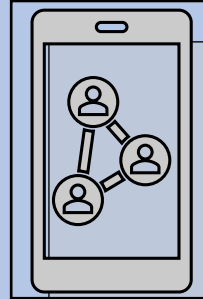
Mindset



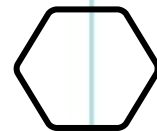
Modernizing SOP



Maintenance



Network Coverage
& Electricity



THANK YOU!

**ANY
QUESTIONS?**

