

Mining Dust Monitoring System



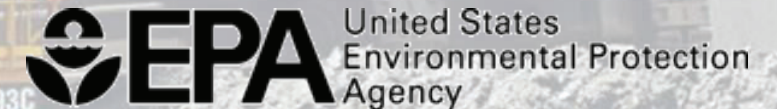


Area pertambangan tentunya sangat akrab dengan berbagai macam polutan seperti debu dari tanah dan hasil pembakaran, asap kendaraan berat, dan lainnya. Berdasarkan laporan analisis *dari ABC Tropical Nothr*, tentunya kondisi udara yang terpapar polutan seperti ini tidak baik untuk para penambang dan juga warga sekitar.

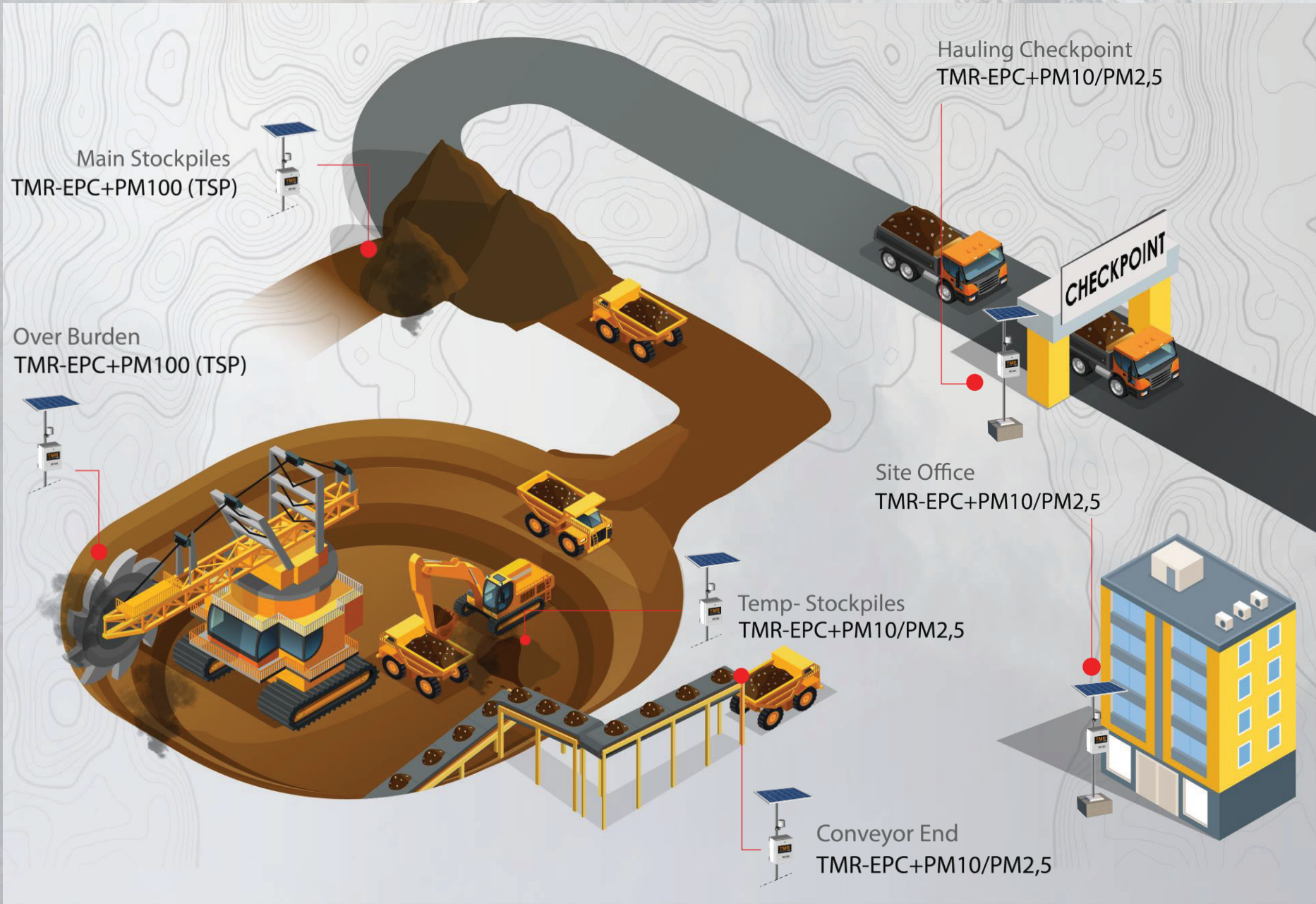
Salah satu poin penting di dalam hasil analisis tersebut yaitu semakin meningkat produksi batu bara yang dilakukan maka tingkat partikel debu yang berbahaya juga semakin meningkat.

Melihat berbagai dampak buruk polutan yang dihasilkan maka perlu dipasang Sistem Pemantauan Kualitas Udara atau Air Quality Monitoring System (AQMS).

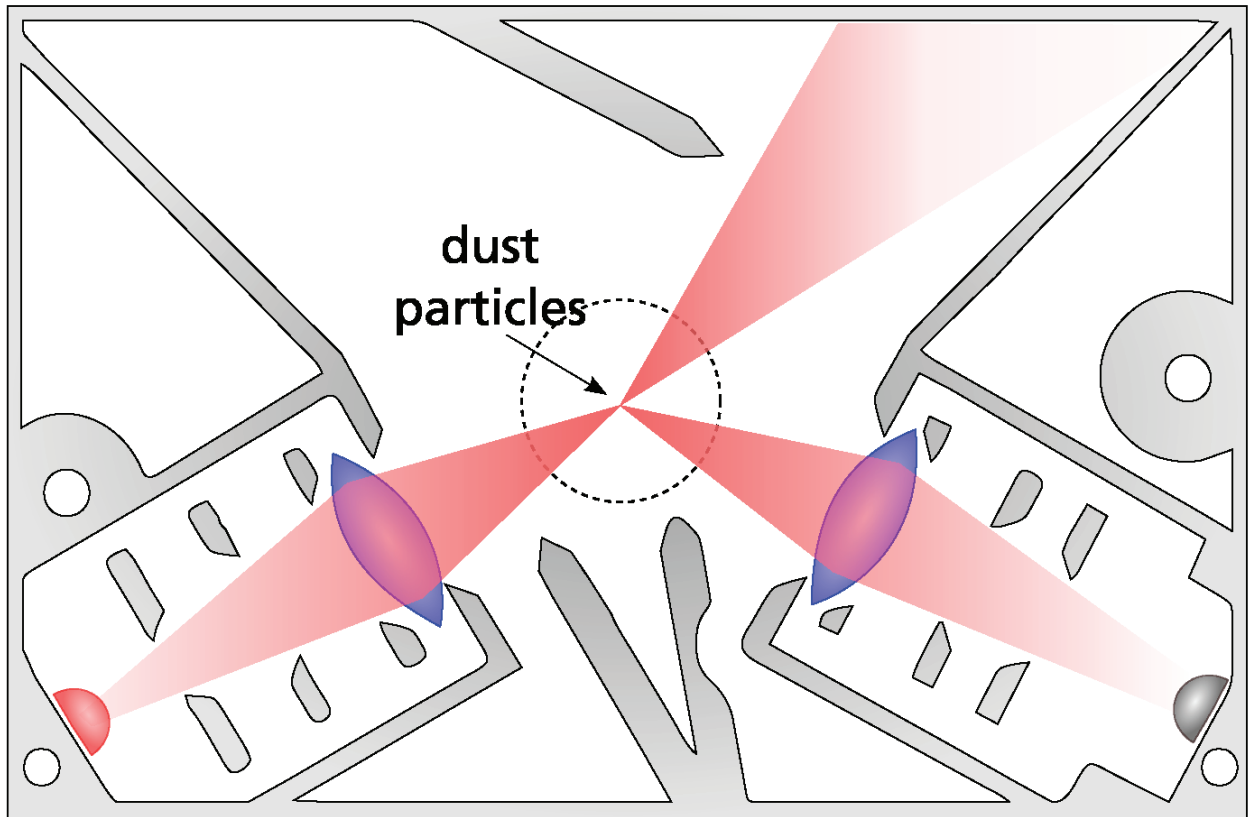
- KEPMEN LH BAPEDAL NOMOR: KEP107/KABAPEDAL/11/1997
- U.S. EPA
Air Quality Planning and
Standards Information Division
EPA-456/F-14-002



Sensor Station illustration

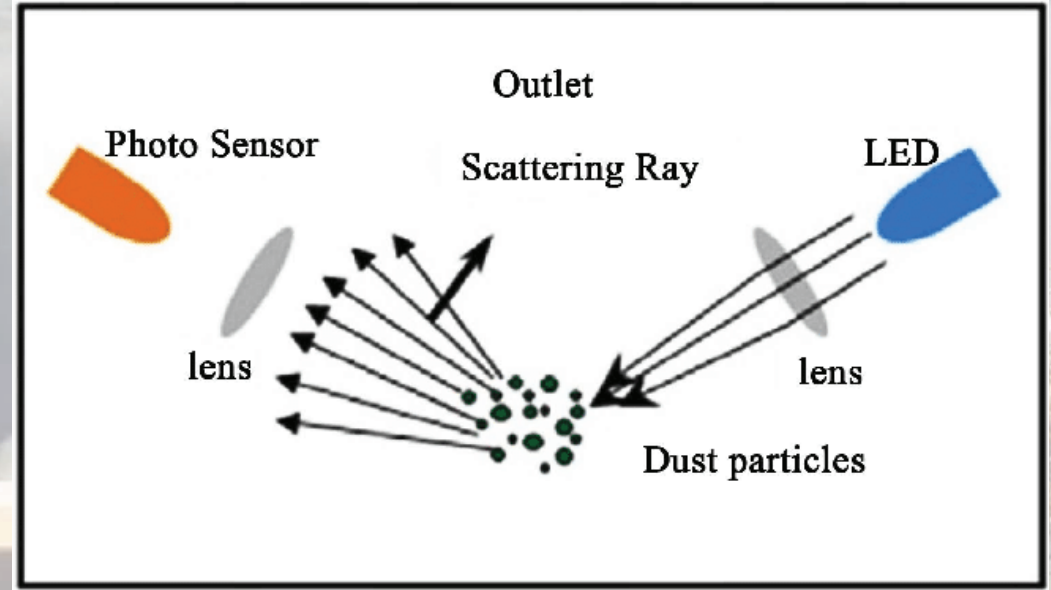


Prinsip Kerja Laser Scattering untuk Deteksi Partikel

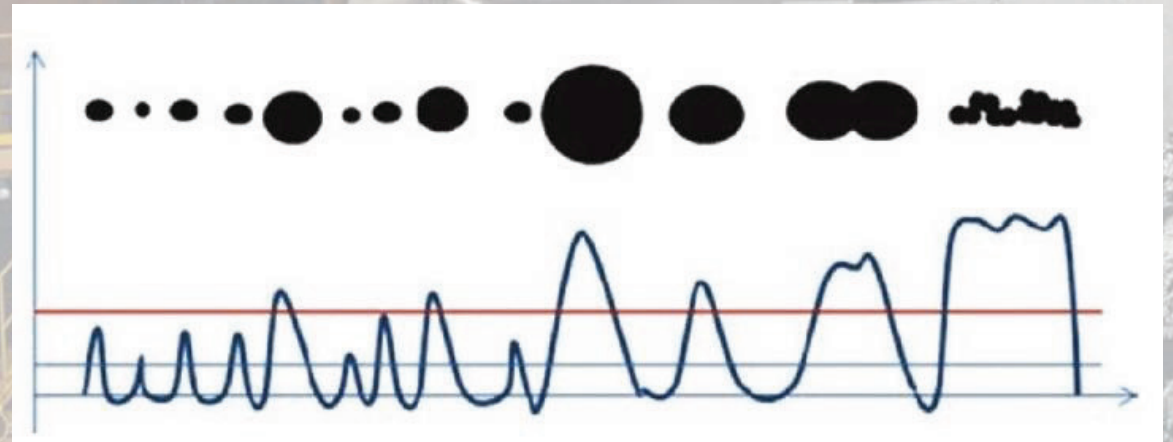


LED

receptor



Working principle of laser particulate sensor. After the laser scattering through the particles, the pulse signal outputted by the sensor will be transformed into digital signals. The number and diameter of particles then are obtained by analysis based on the correlation between the signal waveform and the particles diameter.



Spesifikasi Sensor



TMR-EPC

Embedded Controller for Distributed Automation system and Integrated Data Acquisition



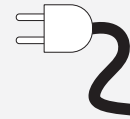
Spesification

- Processor : Intel Celeron (2 GHz)
- Memory : DDR3L (8GB)
- Storage : 2.5" SATA HDD 500GB:
- Ethernet : 2x Gigabit Ethernet RJ45 port
- Power consumption : 27 Watt max
- Power input : 220VAC 50Hz
(Power supply adapter included)
- Panel Box : IP65 Weatherproof
Fiberglass Panel Box 400x400x140mm

Features

- Preconfigured Realtime measuring visualization of connected sensors
- Preconfigured Realtime data forwarding to other system in Local Network (RJ45) with Modbus TCP protocol
- Easy to operate
- Visual On screen Alarm Condition
- 3 type of visualization (Bargraph, Analog, Chart)

Line IN
220VAC
50Hz



Line IN
220VAC
50Hz



Power Options

1. Direct Line In 110 – 220VAC 50Hz
Facility Power system as power source.
2. Hybrid Solar Power System
Facility Power as main power source, Solar power system as backup power (UPS)
3. Full Solar Power System
Solar power system as main power source using Large Battery Capacity (2 – 3 days backup)



TMR-PM2.5+PM10

The **TMR-PM2.5+PM10** Dust Sensor using laser scattering principle, detecting the existence of dust particle concentration in the air, the minimum can detect 1.0um particles, has a good consistency and stability. According to different usage environment.



Spesification

Sampling object	PM1.0, PM2.5, PM10 Concentration
Range	0-2000ug/m ³
Accuracy	±3%FS@25°C
Supply	5VDC, 12-24VDC
Power Consumption	<50mA@24V
Warm Up Time	3min
Response Time	<90s
Temperature Drift	≤0.2%FS/°C
Stability	<±2%FS
Repeatability	<±1%FS
Operating Temperature	-20°C ±50°C @15-80%RH
Storage	-40-60°C @20%-90%RH
Shell material	ABS

Applications

- Air quality monitoring
- Smart home
- Warehousing
- Public place
- Workshop
- Clear room

TMR-PM100



Dust Sensor using laser scattering principle, detecting the existence of dust particle concentration in the air, the minimum can detect 1.0um particles, has a good consistency and stability. According to different usage environment, there are indoor type and outdoor type to select. This Product is an industrial standard grade and is compatible with TMR-EPC and/or TMR-PPC

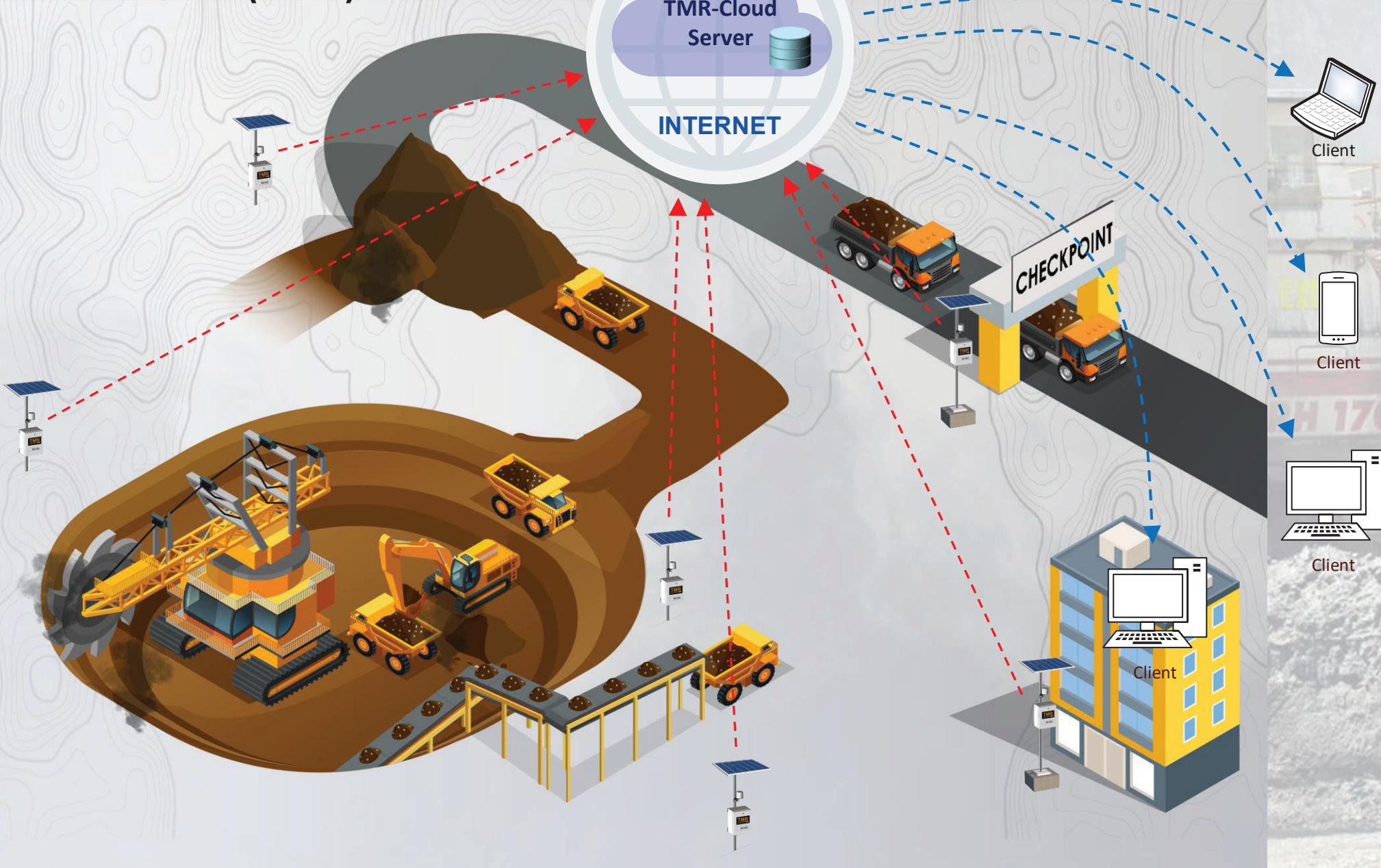
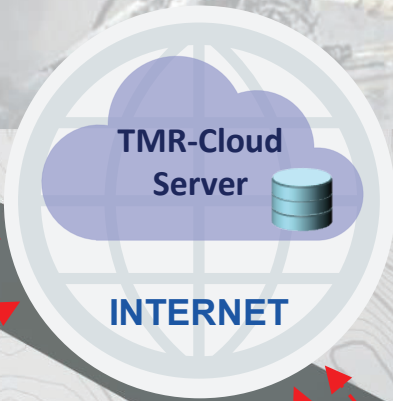
Spesification

Sampling object	PM100 Concentration
Range	0-2000ug/m ³
Accuracy	±3%FS@25°C
Supply	5VDC, 12-24VDC
Power Consumption	<50mA@24V
Warm Up Time	3min
Response Time	<90s
Temperature Drift	≤0.2%FS/°C
Stability	<±2%FS
Repeatability	<±1%FS
Operating Temperature	-20°C ±50°C @15-80%RH
Storage	-40-60°C @20%-90%RH
Shell material	ABS

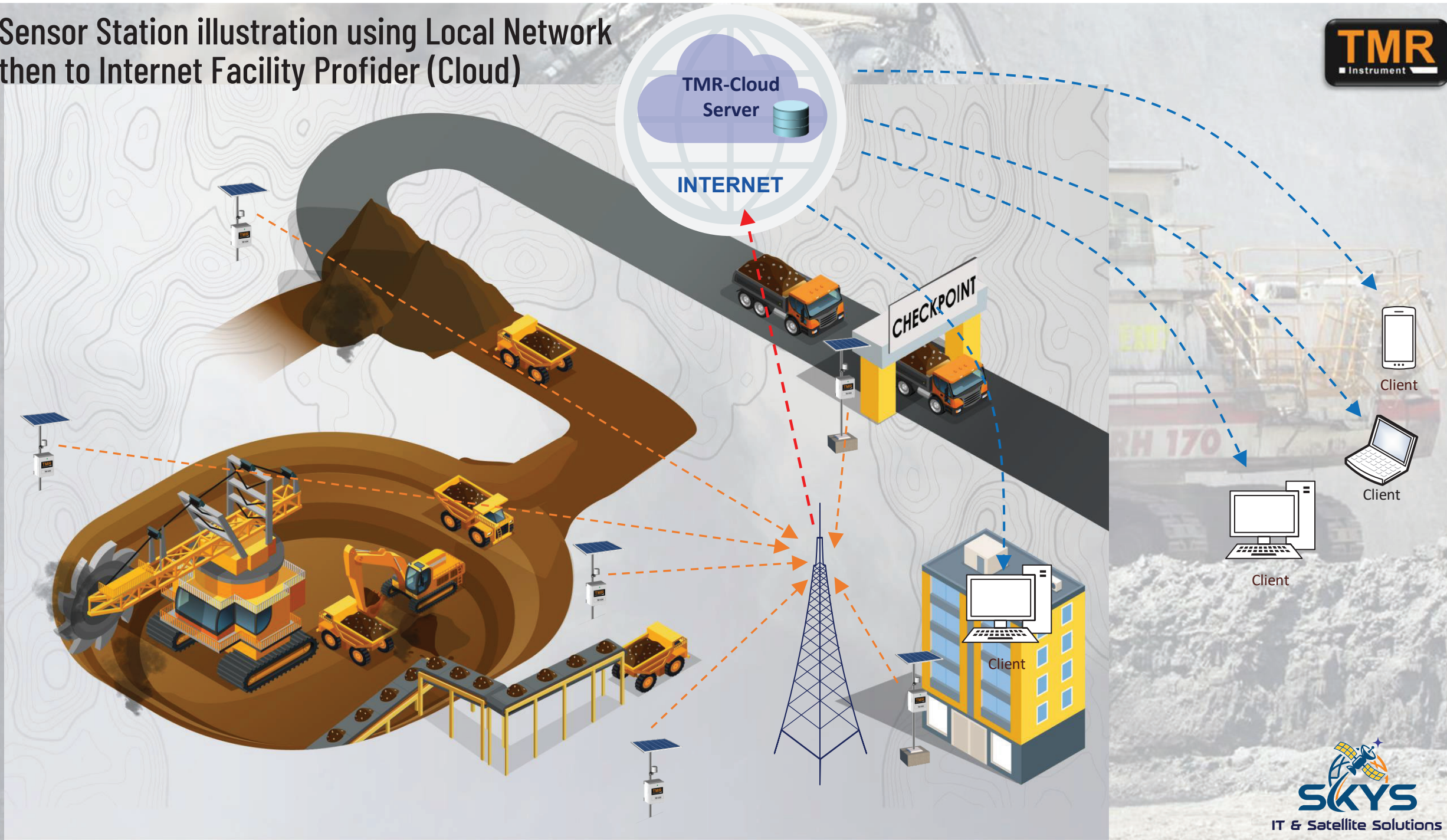
Applications

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Sensor Station illustration using GSM Internet SIM Card (Cloud)



Sensor Station illustration using Local Network then to Internet Facility Profider (Cloud)



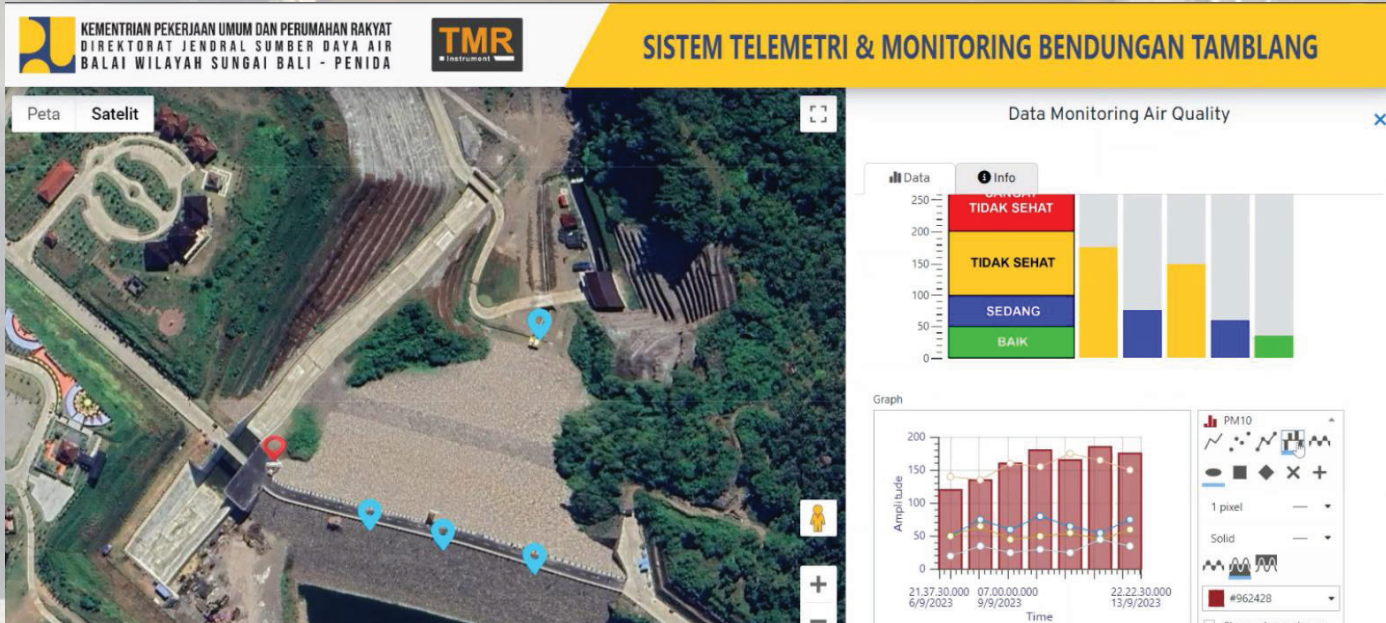
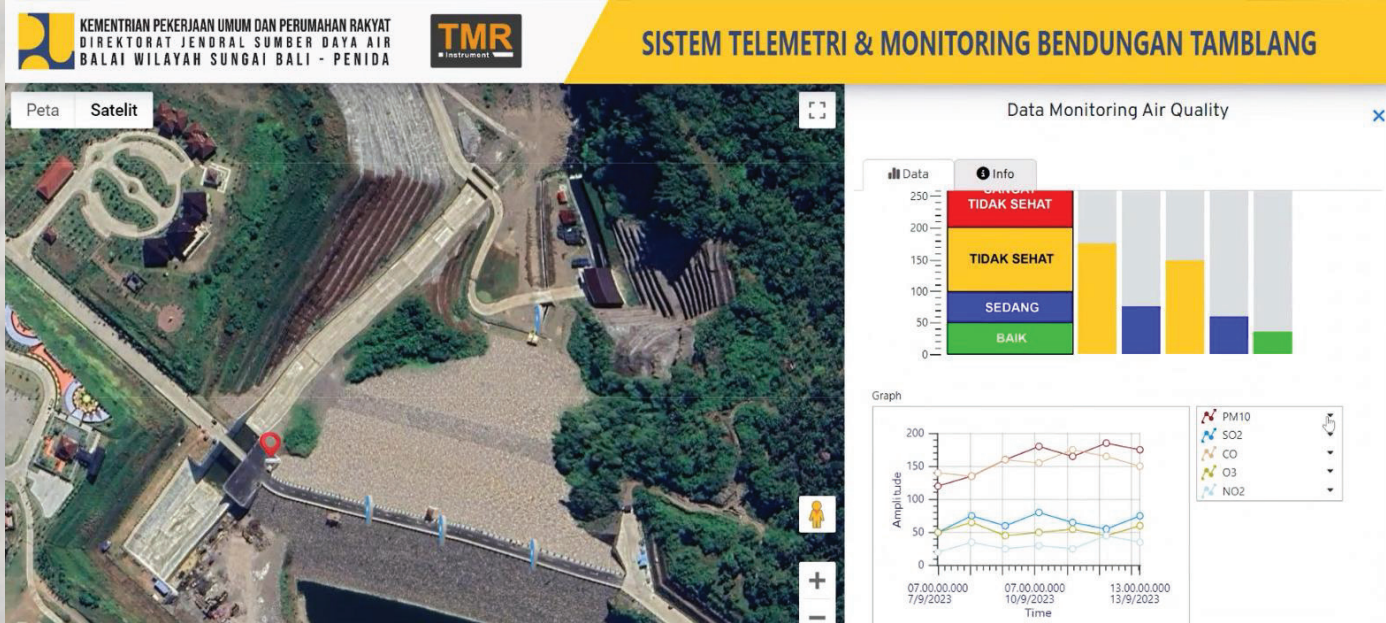
Sensor Station illustration using Local Network (Customer Local Server)



Sensor Station illustration using Local Network and connect to Internet for access the monitoring everywhere (Customer Local Server)



Monitoring app illustration (example)



Monitoring app illustration (example)



KEMENTERIAN PEKERJAAN UMUM DAN PERUMAHAN RAKYAT
DIREKTORAT JENDRAL SUMBER DAYA AIR
BALAI WILAYAH SUNGAI BALI - PENIDA

TMR Instrument

SISTEM TELEMETRI & MONITORING BENDUNGAN TAMBLANG

Peta Satelit



Data Info



KEMENTERIAN PEKERJAAN UMUM DAN PERUMAHAN RAKYAT
DIREKTORAT JENDRAL SUMBER DAYA AIR
BALAI WILAYAH SUNGAI BALI - PENIDA

TMR Instrument

SISTEM TELEMETRI & MONITORING BENDUNGAN TAMBLANG

Peta Satelit



Data Analysis STA D6+10

Def A Def B Info

Battery



12.75 V



Monitoring app illustration (example)



Web Applications > LiveDashboard

Locations
AWLR Kapuk
AWLR Marunda

37.34 53.56 100.51

Start: 12/20/2021 12:00:00.000 AM

Amplitude vs Time

WL_50m (mH2O)
WL_100m (mH2O)
WL_150m (mH2O)

Activate Windows
Go to Settings to activate Windows.

Dashboards

08-21-2021 Sat 15:28:47

BENDUNGAN SEI HARAPAN

WFP3 4.27 + 4 mdp1
WFP1 3.11 + 4 mdp1
WFP2 1.04 + 4 mdp1

Dashboards

Analisa Ketinggian Air

Pos AWLR Karang Talun

Rata-Rata Ketinggian_Air pada 2020-04-10

0.85 m
0.80 m
0.75 m
0.70 m
0.65 m

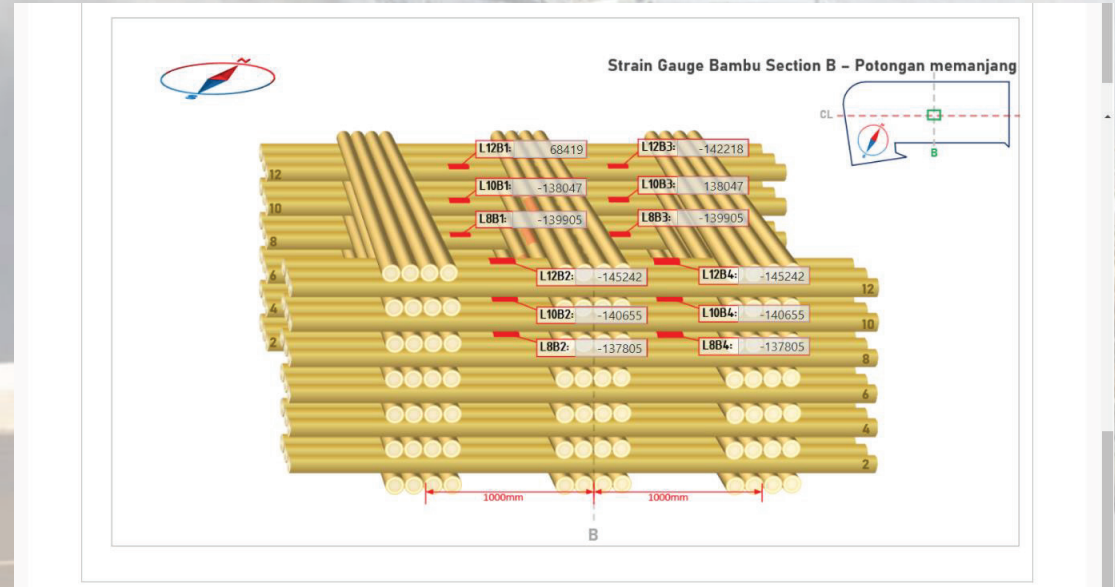
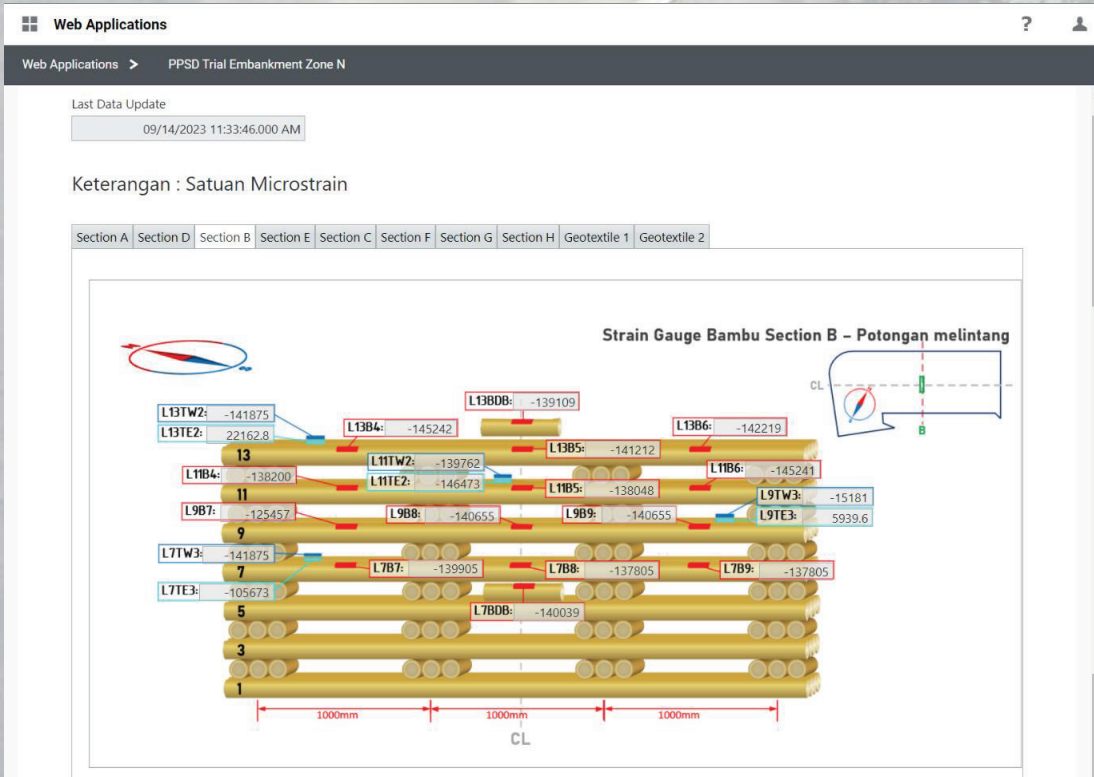
10 Apr 20 02:00 04:00 06:00 08:00 10:00 12:00 14:00 16:00 18:00 20:00 22:00

Informasi

ID Logger	: 10044
Series	: WLR-110
Sensor	: US-150-SM
SN	:
Koordinat Lokasi	: -7.86525; 110.26483
Elevasi Sensor	: 6.797 m meter
No. Selular	: +62811282363
PIC	: Ibu Nama
Kontak PIC	: +62856130658
Kontraktor	:



Monitoring app illustration (example)



Alarm Management

TMR Management System™



Systems Management

Alarms and Notifications

Active Alarms

Alarms

Active

Inactive

Alarm Rules

Tags

Notifications

Strategies

Email Groups

Email Templates

Acknowledge

<input type="checkbox"/>		Name ↑
<input type="checkbox"/>		PM100 High on 'Ha
<input type="checkbox"/>		Low Battery on 'Ov
<input type="checkbox"/>		PM2.5 Warning on

Alarms and Notifications

Email Templates

Selected Template: PM 100 Ala

Alarms and Notifications

Email Groups

Selected Group: Placeholder address group

Save Revert

Alarms and Notifications

Notification Strategies

Selected Strategy: PM 100 Alarm

Save

Description:

PM 100 measurement has reach the maximum threshold alarm

+ Email Group

Email

Email Group: Placeholder address group



Email Template: High CPU usage message template



IT & Satellite Solutions

Terimakasih

