

Data Handling System

System, Experiences and Lessons

<https://www.erc.mp.gov.in>



Real-Time Monitoring Disruptive Advanced Technology



Validation

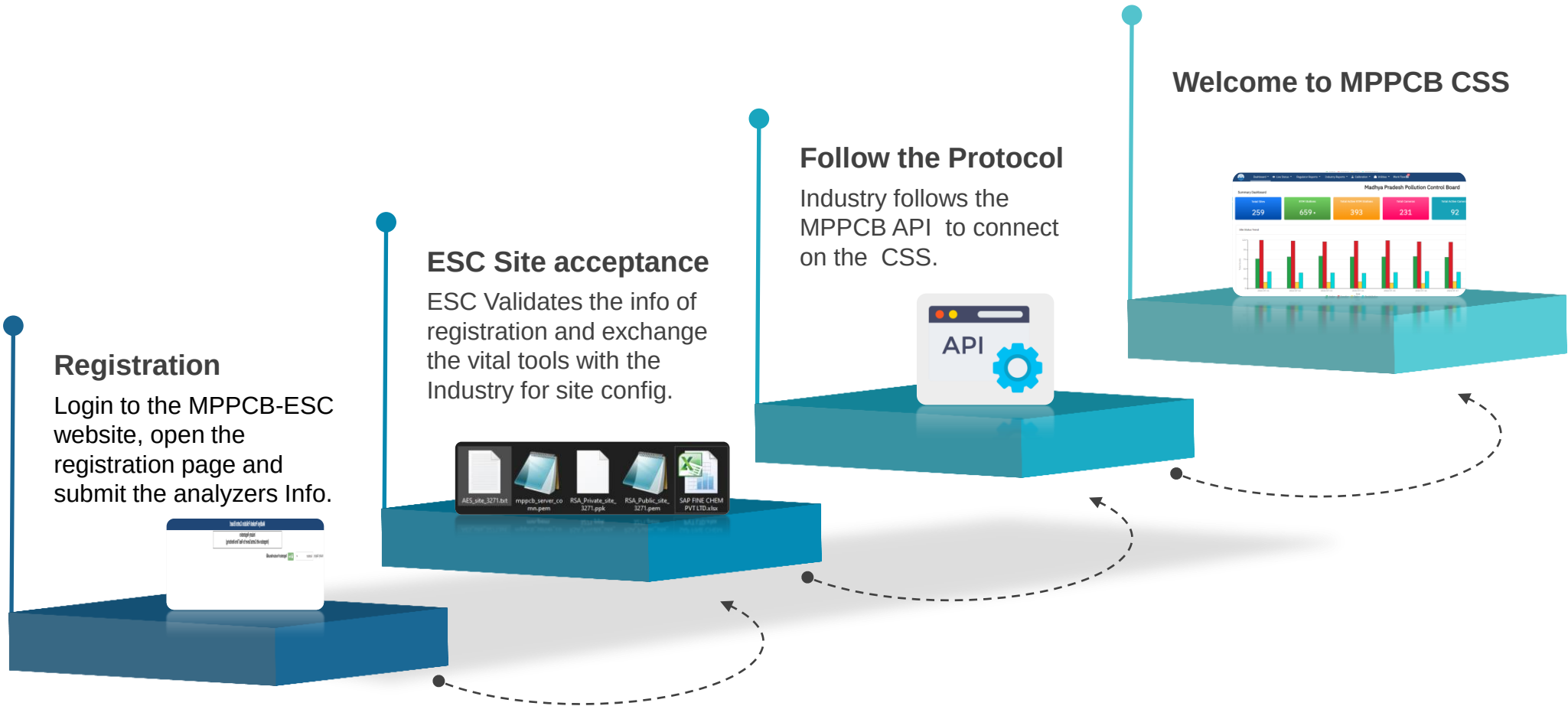
01 Network Validation

02 MP PCB Protocol Validation

03 Data Validation

04 Analyzer Validation

Industrial Connectivity at a Glance



MPPCB Protocol Validation



Protocol Validation

```
C:\Windows\System32\cmd.exe

E:\MKS\How to\Dat Decryption\Test_Decryption>Test_Decryption.exe
Unichem Laboratories Limited
INDORE
DHAR, MadhyaPradesh
India
5 5
1621C00 mg/l analyzer_268 3 0 0
1470ETP 010.0143499 76.3921148
1631800 mg/l analyzer_268 3 0 0
1470ETP 010.0143499 76.3921148
1611T55 mg/l analyzer_268 3 0 0
1470ETP 010.0143499 76.3921148
1651Flow m3/hr analyzer_268 3 0 0
1470ETP 010.0143499 76.3921148
1501pH pH analyzer_33 3 0 0
1470ETP 010.0143499 76.3921148
G21 313 119 7111249 0 0 0 0 1 0 0 0 0 1 1 0 1
U 0.0
G31 313 119 7111249 0 0 0 0 1 0 0 0 0 1 1 0 1
U 0.0
G11 313 119 7111249 0 0 0 0 1 0 0 0 0 1 1 0 1
U 0.5
G51 313 119 7111249 0 0 0 0 1 0 0 0 0 1 1 0 1
U 10.071875
501 313 119 7111249 0 0 0 0 1 0 0 0 0 1 1 0 1
U 7.291375
```



ISO-7168

File Format

Industry should validate the ISO format at Site



Encryption of Data

Data Security

Industry Should Validate How The Vendor Encrypt The Data at Site

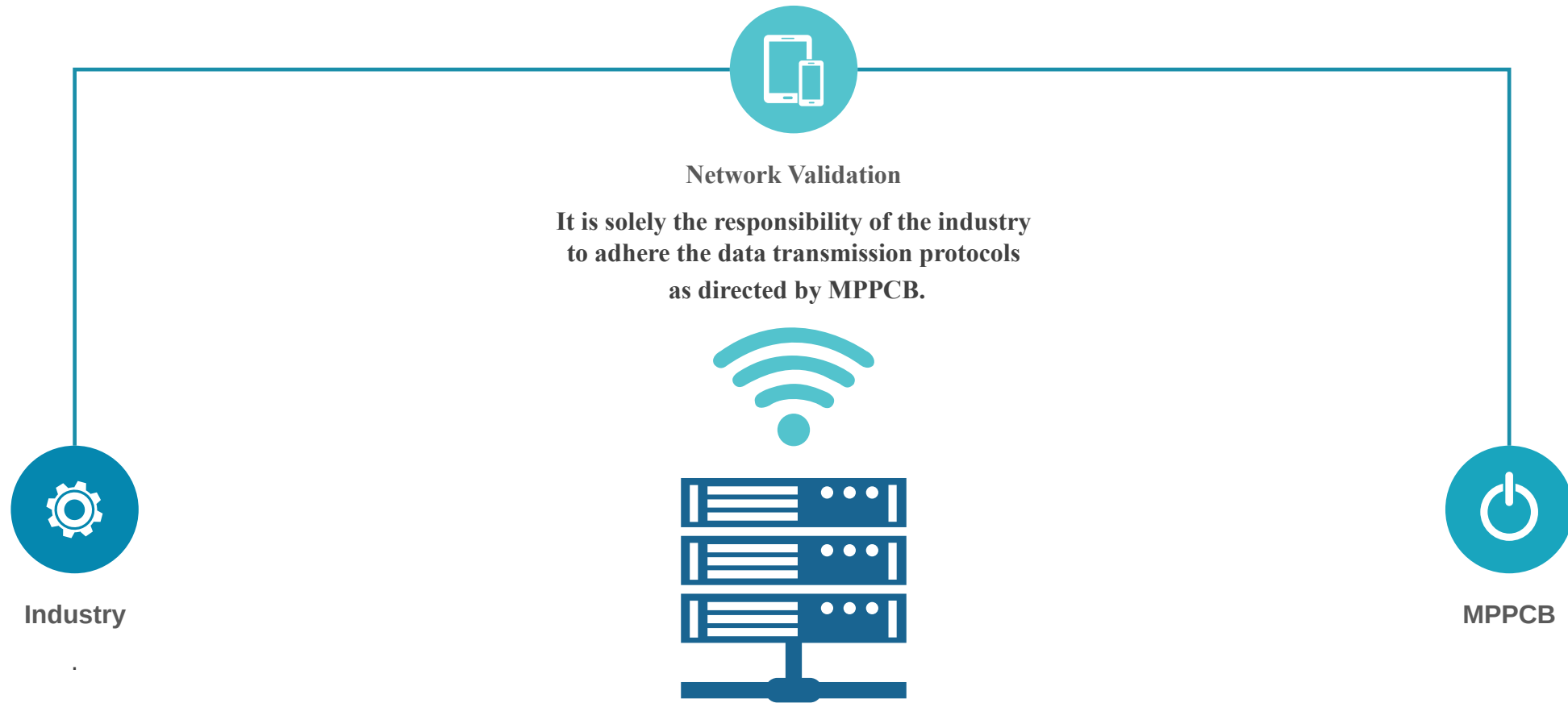


Data Transmission

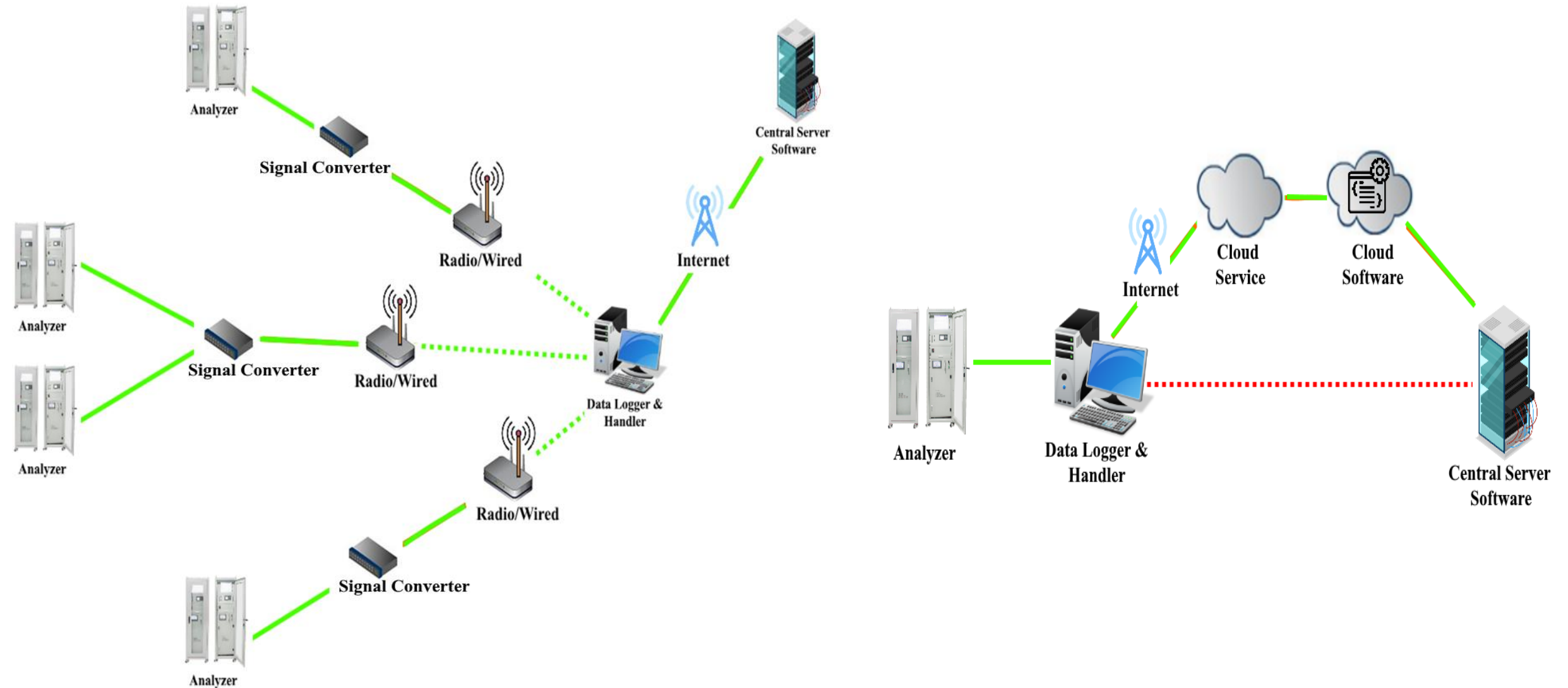
Know your Destinations

Industry Should Know the Path of Data Transmission

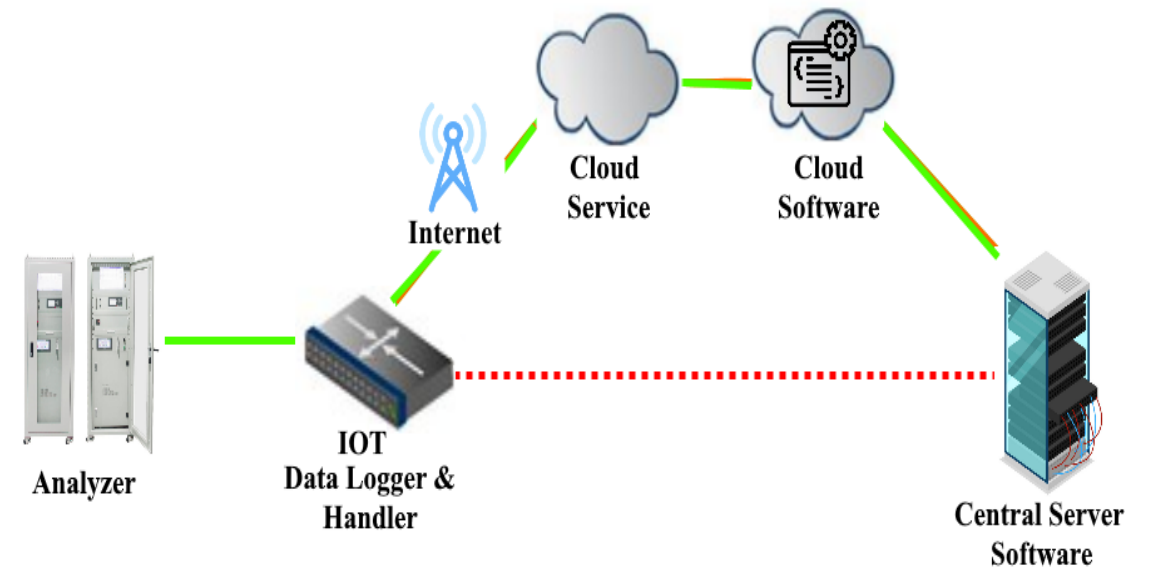
Network Validation



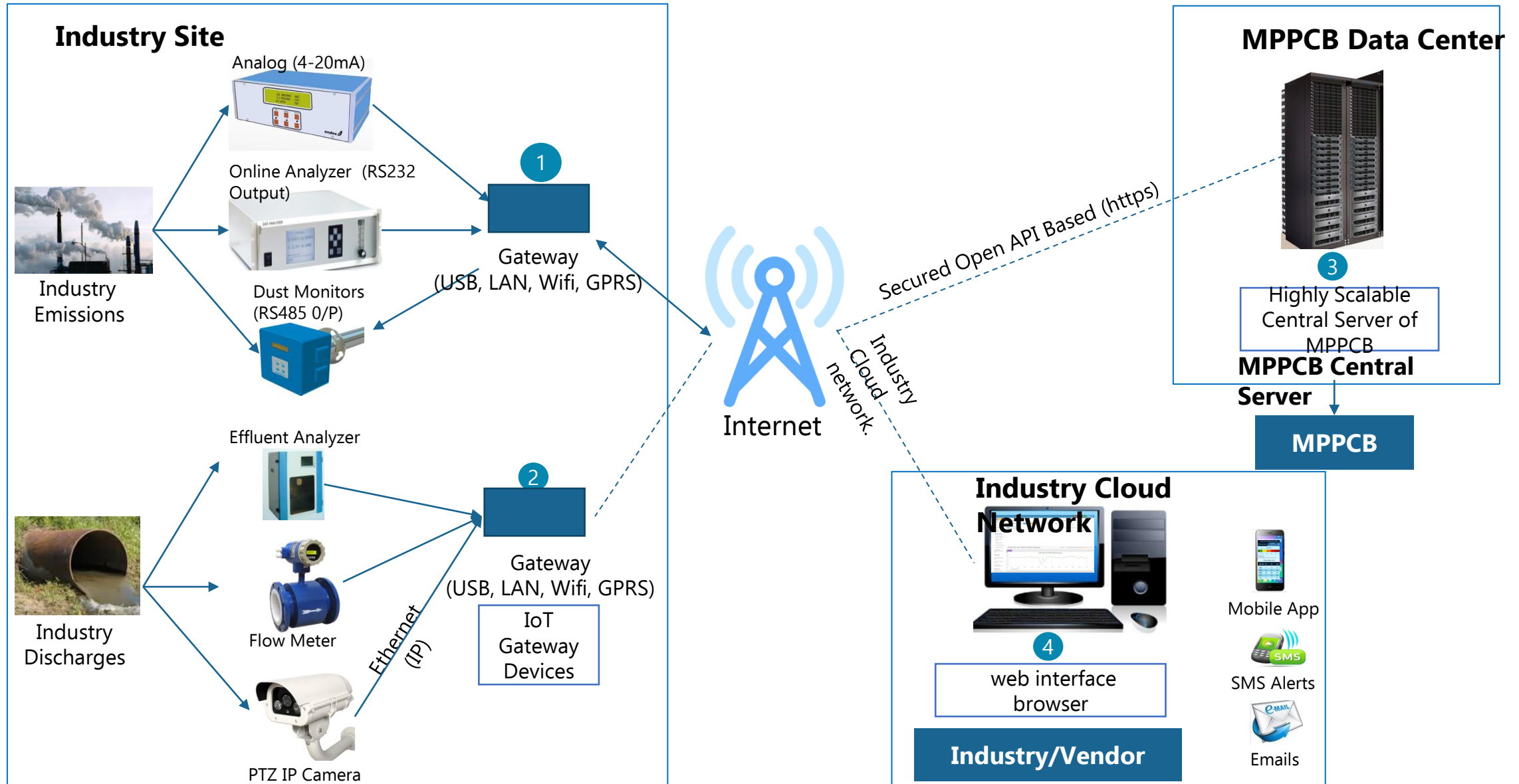
Industries - Network Architecture



Industries - Network Architectures



Industries - Ideal Network Architectures

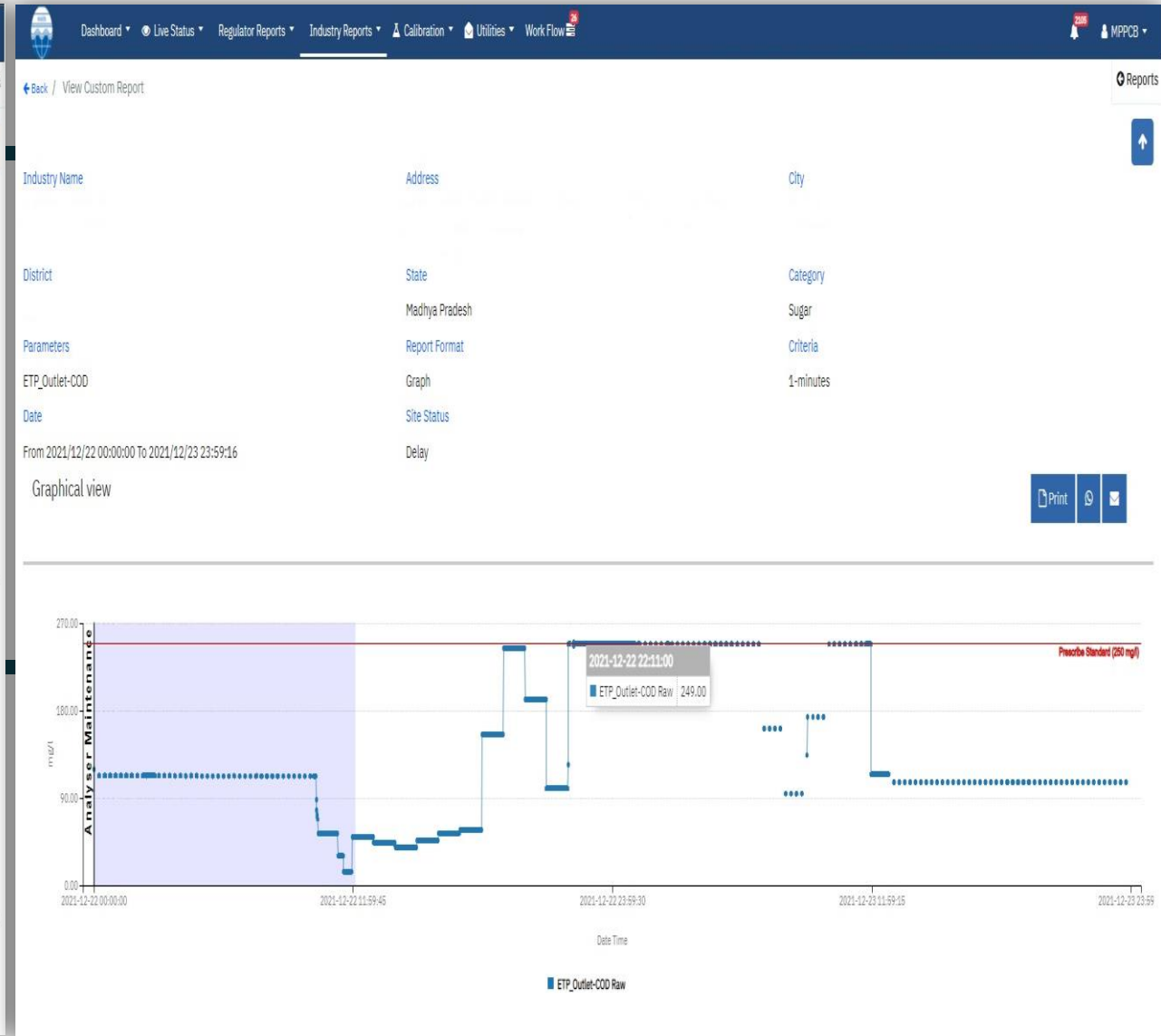
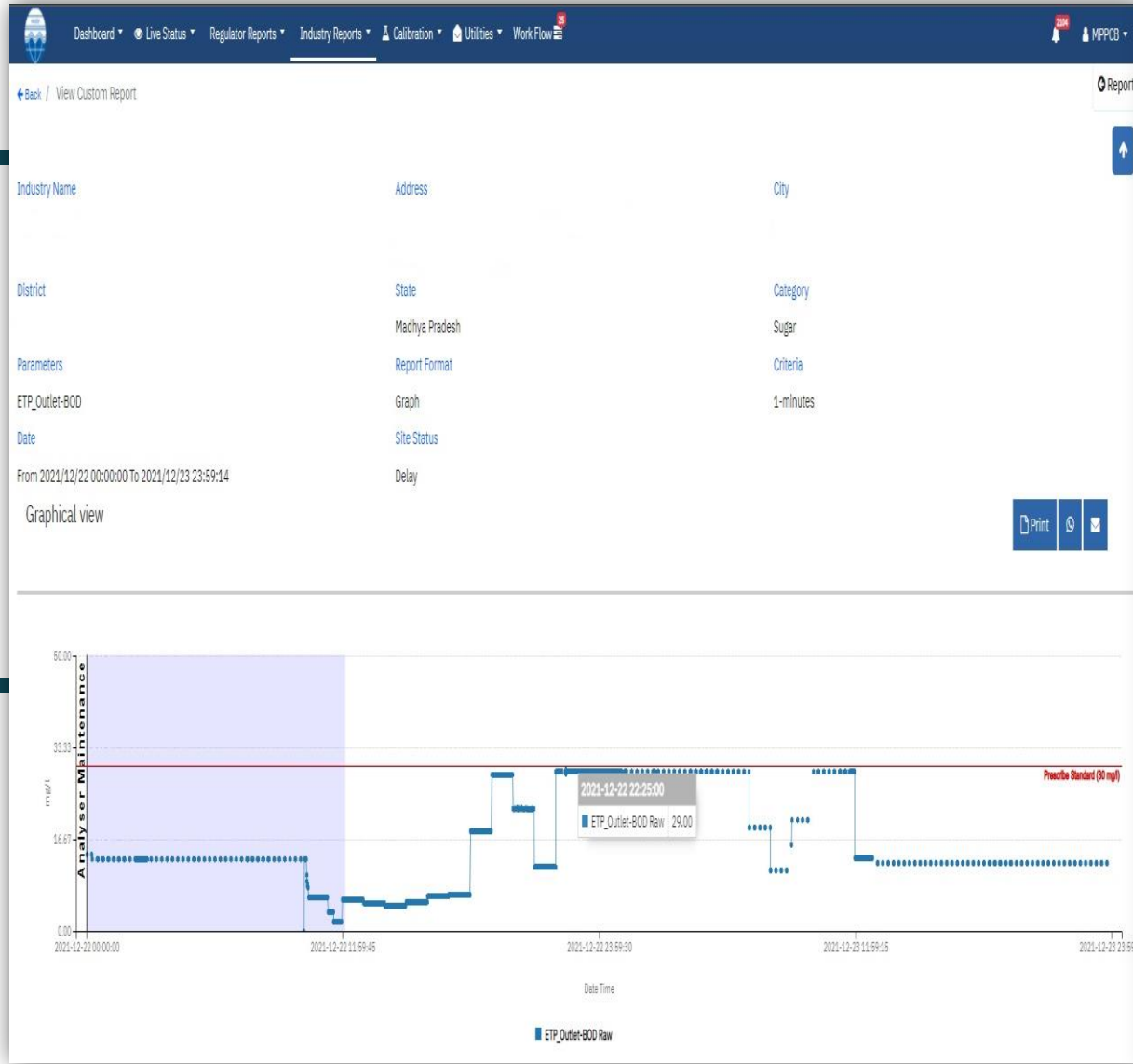




Data Validation



Quality of Data



Quality of Data

Description	ETP_Outlet-BOD_U	ETP_Outlet-COD_U
Prescribed Standards	0 - 30	0 - 250
Maximum Data	29.0	249.0
Minimum Data	0.0	0.0
Geometric Mean	11.08	95.16
Median	12.42	106.63
Standard Deviation	4.78	40.69
Maximum Value At Time	2021-12-22 22	2021-12-22 22
Minimum Value At Time	2021-12-25 14	2021-12-25 14
Valid Data Points	514	514
Total Data Points	882	882
Data Availability %	58.28%	58.28%

SI No	Time	ETP_Outlet-BOD_U	ETP_Outlet-COD_U
1	2021-12-22 00	13.41	114.54
2	2021-12-22 01	13.21	113.42
3	2021-12-22 02	13.21	113.42
4	2021-12-22 03	13.21	113.41
5	2021-12-22 04	13.21	113.39
6	2021-12-22 05	13.20	113.36
7	2021-12-22 06	13.20	113.36
8	2021-12-22 07	13.20	113.36
9	2021-12-22 08	13.20	113.36
10	2021-12-22 09	13.20	113.36
11	2021-12-22 10	7.40	65.43
12	2021-12-22 11	3.73	32.03
13	2021-12-22 12	5.80	49.74
14	2021-12-22 13	5.19	44.53
15	2021-12-22 14	4.68	40.18
16	2021-12-22 15	5.46	47.00
17	2021-12-22 16	6.36	54.71

Data availability %		88.89	88.89	88.89
SI No	Time	JABALPUR_MSW_PRIVATE_LIMITED-NOx(mg/Nm3)	JABALPUR_MSW_PRIVATE_LIMITED-PM(mg/Nm3)	JABALPUR_MSW_PRIVATE_LIMITED-SO2(mg/Nm3)
61	2022-02-07 15:00:00	0.0	29.87	0.0
62	2022-02-07 15:15:00	0.0	28.07	0.0
63	2022-02-07 15:30:00	0.0	28.00	0.0
64	2022-02-07 15:45:00	0.0	28.00	0.0
65	2022-02-07 16:00:00	0.0	28.00	0.0
66	2022-02-07 16:15:00	0.0	28.00	0.0
67	2022-02-07 16:30:00	0.0	28.00	0.0
68	2022-02-07 16:45:00	0.0	28.00	0.0
69	2022-02-07 17:00:00	0.0	28.00	0.0
70	2022-02-07 17:15:00	0.0	28.00	0.0
71	2022-02-07 17:30:00	0.0	28.00	0.0
72	2022-02-07 17:45:00	0.0	28.00	0.0
73	2022-02-07 18:00:00	0.0	28.00	0.0
74	2022-02-07 18:15:00	0.0	28.00	0.0
75	2022-02-07 18:30:00	0.0	28.00	0.0

Source of Data



Station

AAQMS_1

Parameters

Report Format

Tabular

Criteria

1-hours

Date

From 2022/05/17 00:00:00 To 2022/05/21 00:00:15

Tabular view

Time ×

AAQMS_1

AAQMS_1

AAQMS_1

AAQMS_1

+2 ▾

Excel

Search...

S. No	Time						
		PM10 - (ug/m3) Raw	PM2.5 - (ug/m3) Raw	SO2 - (ug/m3) Raw	NOx - (ug/m3) Raw	CO - (mg/m3) Raw	O3 - (ug/m3) Raw
69	2022-05-19 20	8	8.66	4.99	8.48	5.28	NA
70	2022-05-19 21	8	8.66	4.99	8.48	5.28	NA
71	2022-05-19 22	8	8.66	4.99	8.48	5.28	NA
72	2022-05-19 23	8	8.66	4.99	8.48	5.28	NA
73	2022-05-20 00	8	8.66	4.99	8.48	5.28	NA
74	2022-05-20 01	8	8.66	4.99	8.48	5.28	NA
75	2022-05-20 02	8	8.66	4.99	8.48	5.28	NA
76	2022-05-20 03	8	8.66	4.99	8.48	5.28	NA
77	2022-05-20 04	8	8.66	4.99	8.48	5.28	NA
78	2022-05-20 05	8	8.66	4.99	8.48	5.28	NA

Source of Data

Station

UNIT1,UNIT2,RO_REJECT

Parameters

UNIT1-SO_x,UNIT1-NO,UNIT1-PM,UNIT1-CO,UNIT2-SO_x,UNIT2-NO,UNIT2-CO,UNIT2-PM,RO_REJECT-TSS,RO_REJECT-pH,RO_REJECT-Temperature

Report Format

Tabular

Criteria

1-hours

Date

From 2020/11/18 00:00:00 To 2020/11/18 23:00:00

Tabular view

Time × UNIT1-SO_x - (mg/Nm3) Raw × UNIT1-NO - (mg/Nm3) Raw × UNIT1-PM - (mg/m3) Raw × UNIT1-CO - (LPH) Raw × +7 ▾

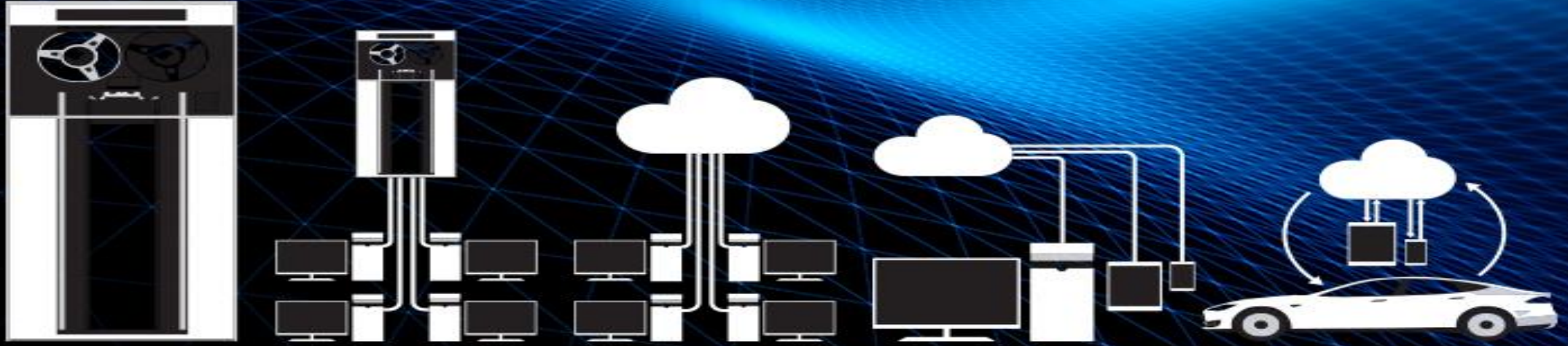


Search...

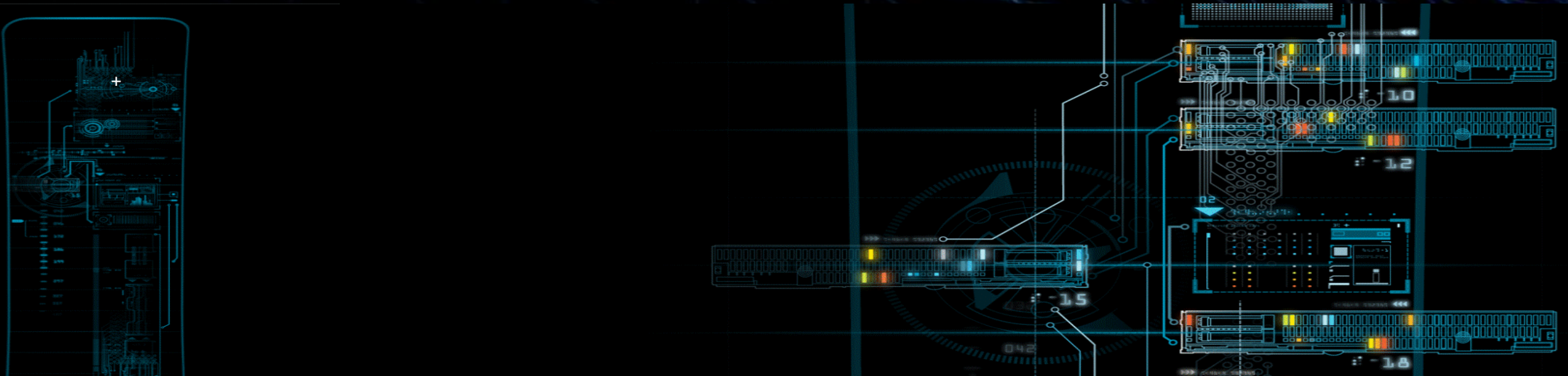
S. No	Time	UNIT1-SO _x - (mg/Nm3) Raw	UNIT1-NO - (mg/Nm3) Raw	UNIT1-PM - (mg/m3) Raw	UNIT1-CO - (LPH) Raw	UNIT2-SO _x - (mg/Nm3) Raw	UNIT2-NO - (mg/Nm3) Raw	UNIT2-CO - (mg/Nm3) Raw	UNIT2-PM - (mg/m3) Raw	RO_REJECT-TSS - (mg/l) Raw	RO_REJECT-pH - (Raw)
8	2020-11-18 07	6	8.42	6.56	9.9	7.37	1.91	9.05	3.17	6.55	4.17
9	2020-11-18 08	6	8.42	6.56	9.9	7.37	1.91	9.05	3.17	6.55	4.17
10	2020-11-18 09	6	8.42	6.56	9.9	7.37	1.91	9.05	3.17	6.55	4.17
11	2020-11-18 10	6	8.42	6.56	9.9	7.37	1.91	9.05	3.17	6.55	4.17
12	2020-11-18 11	6	8.42	6.56	9.9	7.37	1.91	9.05	3.17	6.55	4.17
13	2020-11-18 12	6	8.42	6.56	9.9	7.37	1.91	9.05	3.17	6.55	4.17
14	2020-11-18 13	6	8.42	6.56	9.9	7.37	1.91	9.05	3.17	6.55	4.17
15	2020-11-18 14	6	8.42	6.56	9.9	7.37	1.91	9.05	3.17	6.55	4.17
16	2020-11-18 15	6	8.42	6.56	9.9	7.37	1.91	9.05	3.17	6.55	4.17
17	2020-11-18 16	6	8.42	6.56	9.9	7.37	1.91	9.05	3.17	6.55	4.17
18	2020-11-18 17	6	8.42	6.56	9.9	7.37	1.91	9.05	3.17	6.55	4.17

Total Records : 24

Analyzer Validation



Remote Calibration



Performa of Remote Calibration-Check

Command Execution

All the commands of Remote calibration will be triggered from MPPCB Central Server.

Analyzer Config

The industry should ensure the configurations of analyzers/DAHS for Remote calibration as per the Central server API for Remote calibration

Unit Acquisition

Please make sure the analyzer and Calibrator unit acquisition should be similar.

Date and Time

Analyzer, DAHS and Calibrator date and time should be similar.

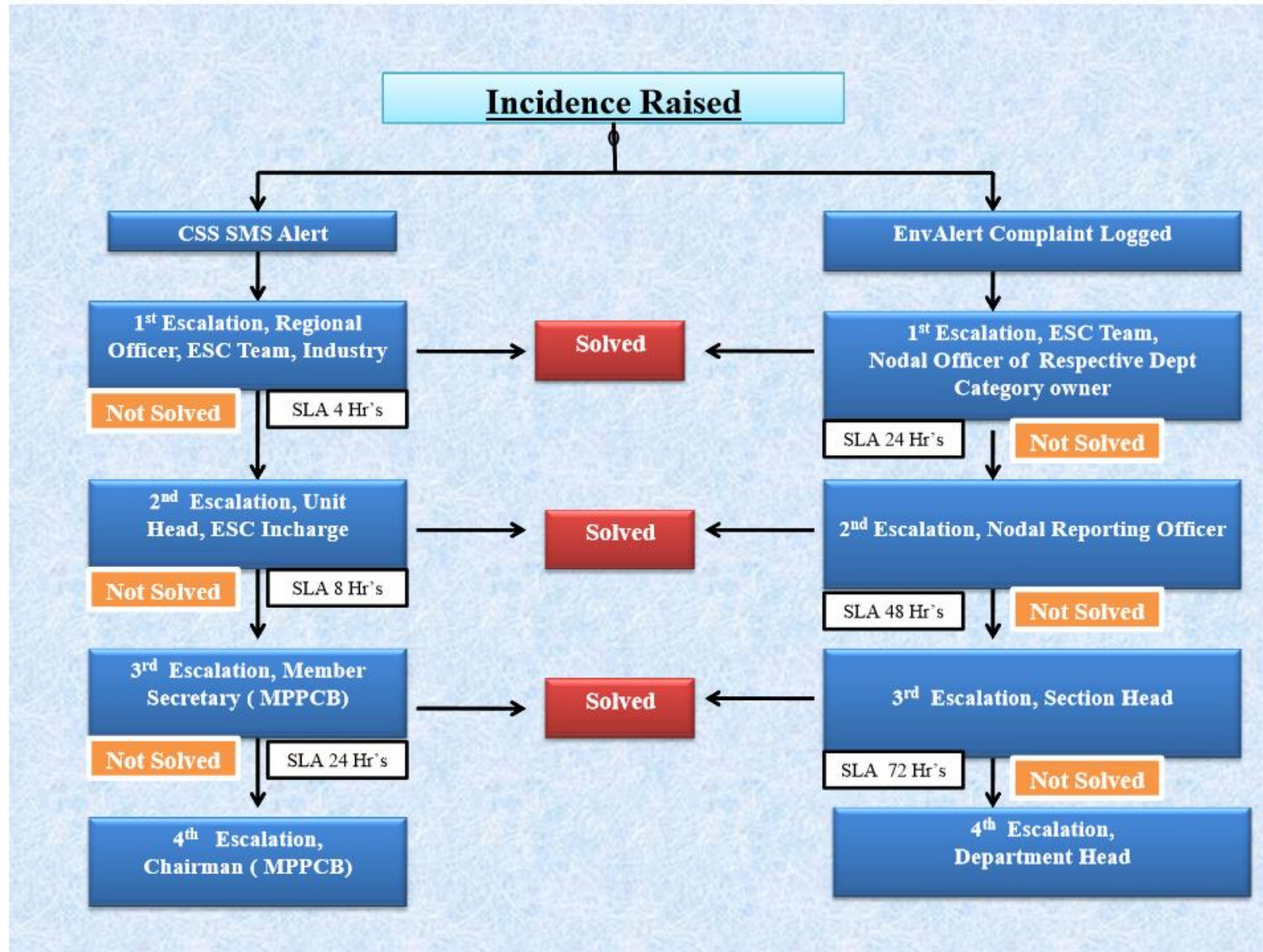
Relevant Certificate

All the certificates of a gas cylinder (proper visibility of Refill date and expiry date) and snap of the cylinders at Analyzer shelter.

Analyzer login

DAHS and Analyzer should be login remotely, throughout the process of Remote Calibration. (Via Video Call or any other process)

Escalation Matrix





THANK YOU

Madhya Pradesh Pollution Control Board



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