

I-Protect

Automated NOC Operations

An IoT Based Solution on Cloud Platform

World Class Solutions

Proven Solutions for telecom



**An AI based Remote Monitoring
Solution for Telecom & Smart City**



System Infra Solutions Pvt. Ltd.

Solutions for life time...

An ISO 9001 : 2015, ISO 14001 : 2015, ISO 45001 : 2018 Certified Company

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Industry Challenges ▶

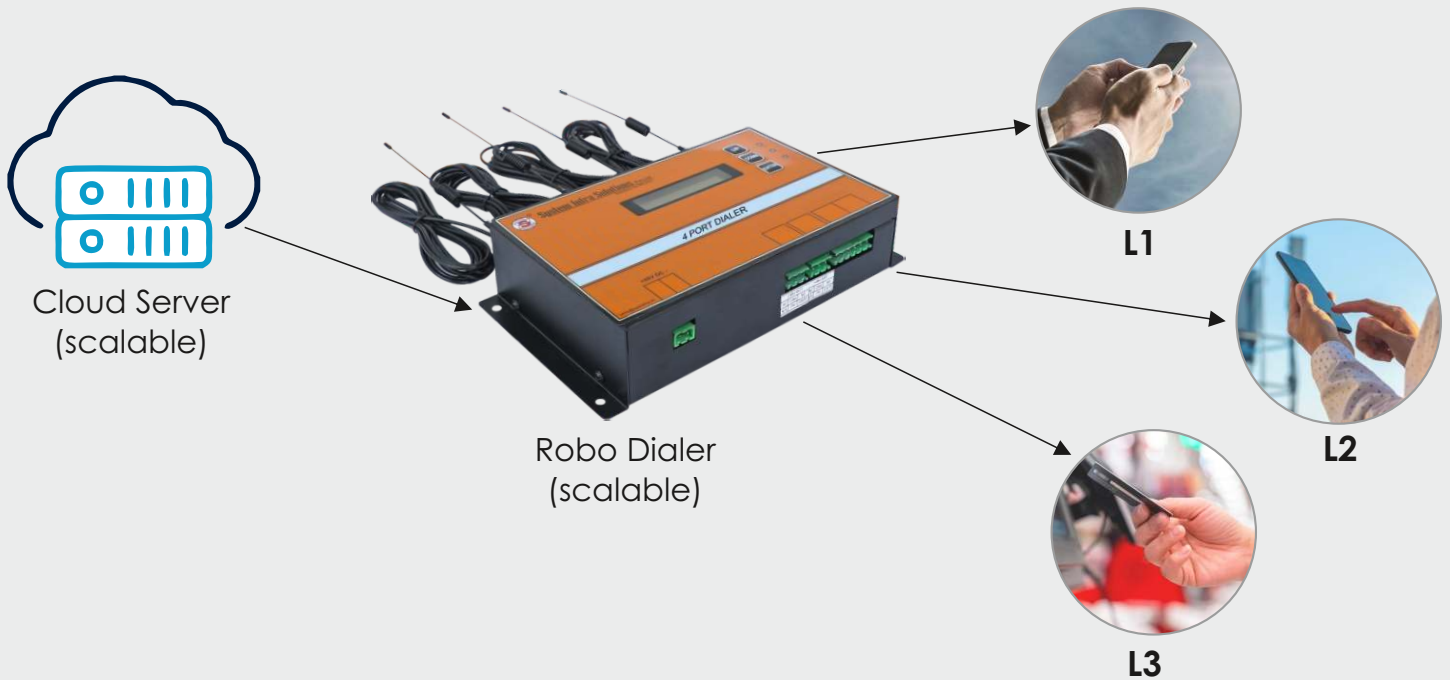
Telecom industry has been struggling to contain the high operation cost due to various overheads & inefficiencies in their existing system. These inefficiencies can be broadly categorized as below:

- Inaccurate reporting of data which leads to increase in operational cost.
- Unavailability of reporting mechanism to contain the loss of energy which leads to site outages & high energy cost.
- Battery theft/tampering and health status go unnoticed in absence of real time notification.
- No mechanism to detect the excessive heating of the battery, which may lead to explosion.
- There is no centralized system to monitor battery bank health in real time, leading to energy losses and detection is largely dependent on inefficient mechanism.
- Delayed reporting of issue results in increased resolution time.
- Unavailability of real-time centralized energy metering for DG, EB & Battery Run-Hour and historical trend.
- Lack of centralized database to maintain historical data for trend analysis and decision making.

Our Solution ▶

Having worked with the leading telecom service provider/ operators for more than 17 yrs, System Infra solutions has come up with it's unique products to address the challenges being faces by the industry. The answers to these challenges is I-Protect, which is a cutting edge solution backed by AI based application framework.

- Centralized View of Tower Infrastructure
- Inhouse Designed and Developed
- Dedicated R&D team for future supports
- On-demand and scheduled reporting
- Multichannel Communication
- High availability, redundancy and scalability
- Reduced Capex
- Fast ROI
- Reduction in Opex by containing energy losses
- 2G, 3G, 4G, LTE & 5G site compatible
- Applicable in other industries like Smart City, Railways
- Shared or dedicated cloud hosting models



Unparalleled Features ▶

- Centralized/De-centralized IoT based automated NOC monitoring solution for all sites in scope.
- Real-time monitoring of all critical alarms & notifications through various channels (App Notification, SMS, Voice call & Email).
- Real-time battery bank health monitoring.
- Historical trend analysis & dashboard for monitoring.
- Nominal Capex requirement for the solution & quick deployment
- Cloud based high availability application infrastructure that can be scaled up & down based on the requirement.
- Automatic voice call (Robo-Dialling) feature eliminates the need for dedicated human resources.
- The solution minimizes the cost of outage by providing real-time notifications.

Alarms Monitored

Theft	Fire
Temperature	Door
Motion	BTS Voltage
DG Run Hours	EB Run Hours
BB Run Hours	Battery Health Status

Reports Available

Site Metering	Alarm Activity
Battery Bank Health	Communication Report
Root Cause Analysis	Outage Report
Battery Energy Loss	Calling Report (Receive, Reject, Not Attend)
Live Reporting (DG, Mains, Battery & Critical Alarms)	

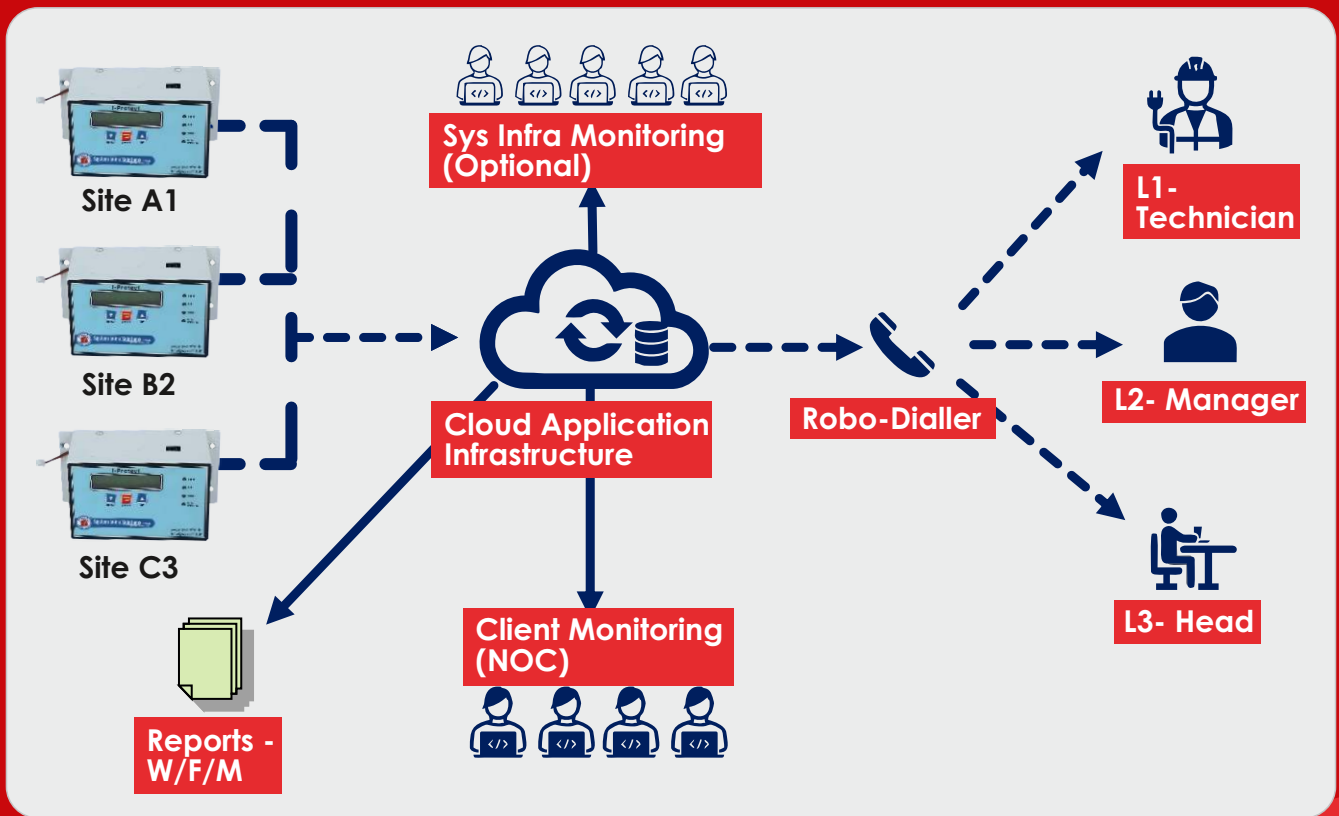
Web & Mobile Interface

- SMS: messages sent to three levels of escalations assigned to each site
- Mail: e-mails sent to the assigned levels at a defined intervals
- Voice Messaging: dedicated dialer calls the assigned levels depending on nature of alarms
- Mobile App: Status can be accessed on the go with built-in notification mechanism
- Self customizable alarms: parameters can be set by user to receive the set alarms
- Mobile App: Customizable Alerts and notifications
- Web App: Real-time status and data access through secure web interface

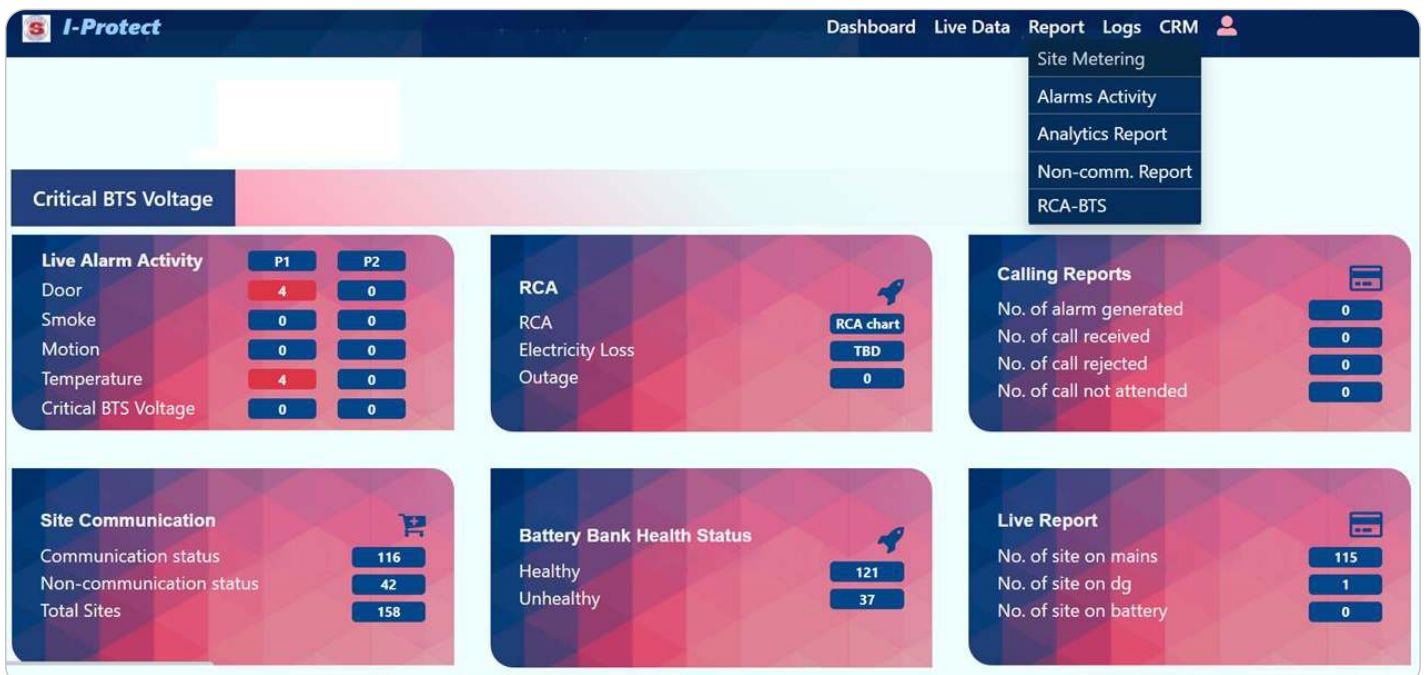
Reporting

- On-demand automated and scheduled reporting
- Detailed Report generated on Daily, weekly, fortnightly, monthly or as customized
- Report parameters include Alarms, time metering, outage/uptime, Battery health
- Alarms: alarms generated on site (Activity, Motion, Door, Smoke, Temperature)
- Time Metering: Energy time metering of energy via Mains, Generator and Battery bank
- Outage: Uptime and outage data in hours and defined window
- Battery health: Battery health status and energy loss due to faulty battery

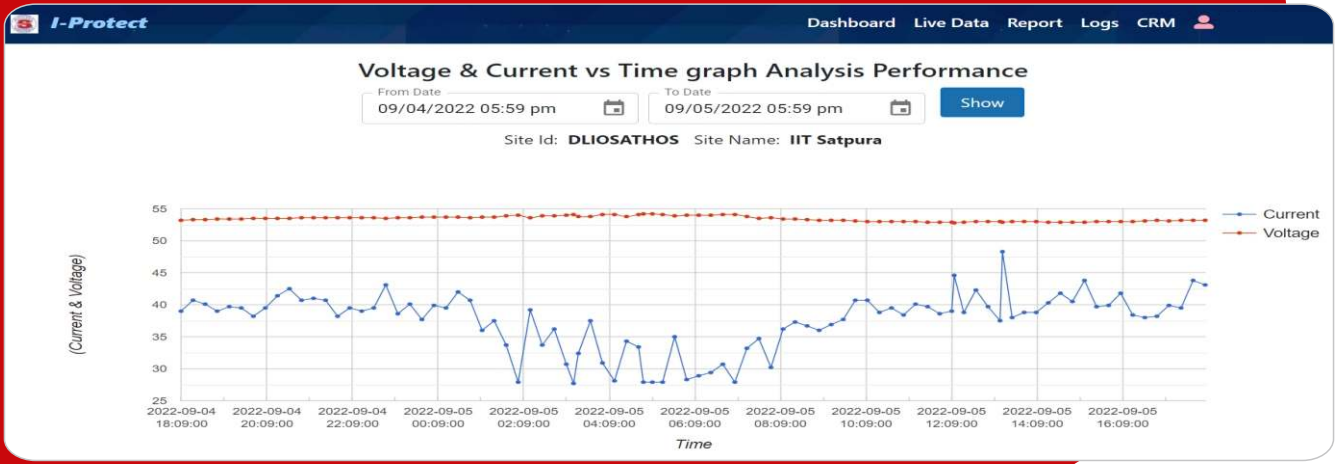
System Architecture



I-Protect NOC Dashboard



I-Protect Voltage & Current Time Graph ▶



Daily/ Weekly/ Monthly Report ▶

Sr. No.	Circle	Date	Start Time (HHMM)	End Time (HHMM)	Site ID	Site Name	Airtel	Jio	VIL	MTNL	BSNL	Activity	Motion	Door	Smoke	EB Runhour	DG Runhour	BB Run Hour	Outage in minutes (less than 47V)	Uptime	%Site on EB	%Site on DG	%Site on Battery	%Low Voltage (Less Than 47V)	Battery Health (CH1)
1	Assam	20-Sep-22	00.00.20	00.00.19	Site ID	Site Name						75	75	0	0	21.67	1.9	0.42	00.00	23.59	90.33%	7.92%	1.75%	0%	Service Required
2	Assam	20-Sep-22	00.00.20	00.00.19	Site ID	Site Name						10	10	0	0	19.5	4.48	00.00	23.59	0%	81.32%	18.68%	0%	Good	
3	Assam	20-Sep-22	00.00.20	00.00.19	Site ID	Site Name						0	0	0	0	14.67	9.32	00.00	23.59	0%	61.15%	38.85%	0%	Good	

Requested Running Hours between 2022-09-19 14:13:00 And 2022-09-20 14:13:00.

Showing Running Hours between 2022-09-19 14:14:12 And 2022-09-20 14:10:42.

Site on Mains	22.2
Site on DG	1.22
Site on Battery	0.53

Site on Mains 92.69%, Site on DG 5.09%, Site on Battery 2.21%

Battery Health Status

#	Battery1	Battery2
Physical capacity	600	0
Usable capacity	370.07	0

Alarm

Motions	Door	Temperature	Fire
NO	NO	44.40 °C	NO

No.	Site ID	Site Name	Timestamp	Voltage	Door	Motion	Load	Temp	Current	Current	Physical/Usable	Physical/Usable
1	GSH00700	AMPHER 12 MILE	2022-09-20 14:22:37	52.40	CLOSED	NO	Mains	43.90	+2.10	-0.20	600/370.07	
2	CWNR0400	CWNR04	2022-09-20 14:23:01	48.20	CLOSED	NO	Battery	32.50	-73.90	-0.00	600/598.76	
3	CWNR2300	CWNR23	2022-09-20 14:22:46	53.40	CLOSED	NO	DG	31.80	+61.80	-0.20	600/600	



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