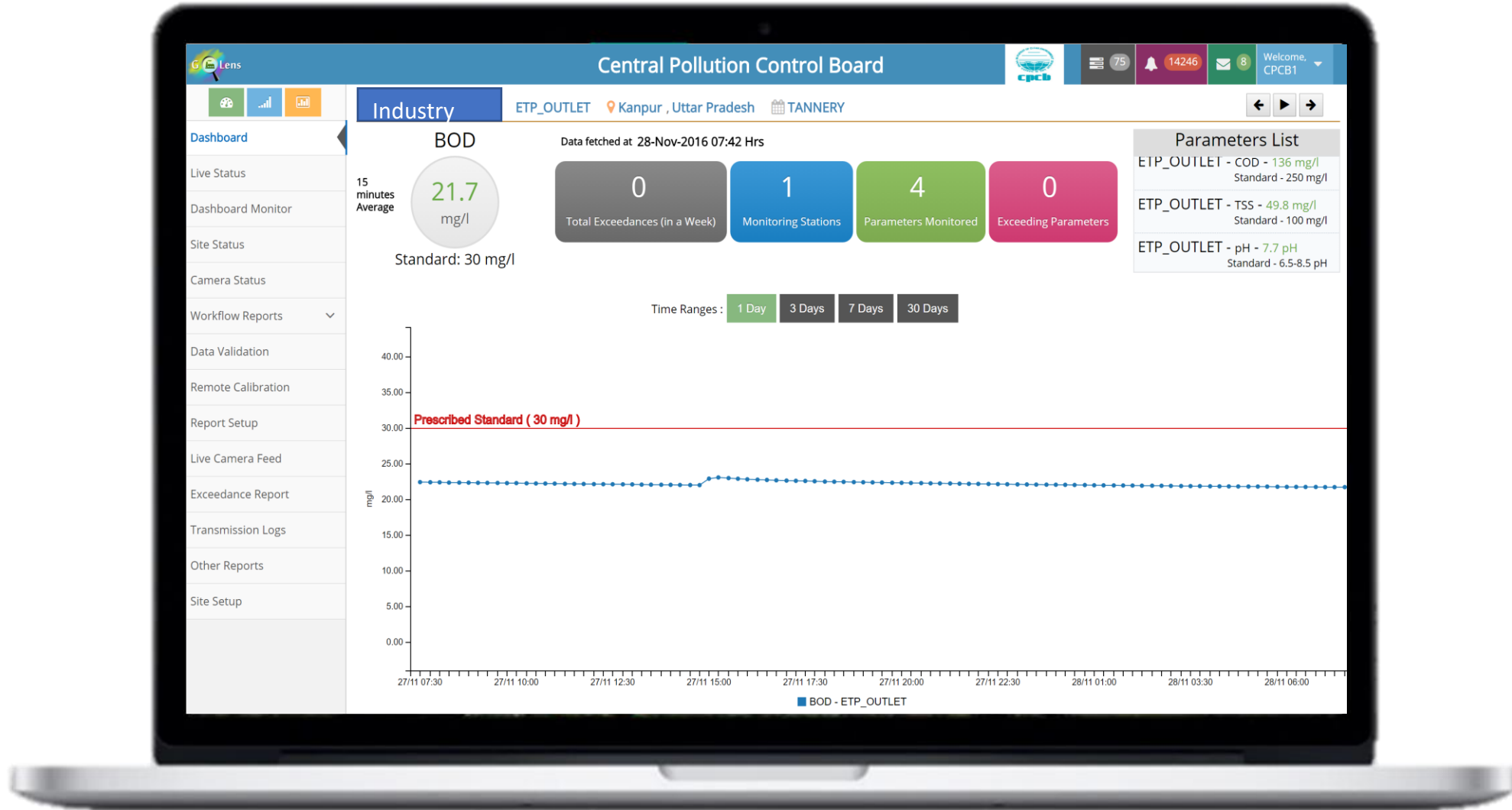




## Glens – Climate Accounting For a Greener Tomorrow



# Introducing



# What problems are we trying to Solve ?

## Central, Regional & Local Government / Authority

- A solution to track enforcement of control measures for pollution sources and monitor industry compliance
- Provide information and warnings on breach of thresholds in sources of pollution real-time.
- Prevention of sporadic switching on/off of monitoring devices to prevent detection
- Facilitate understanding of larger impact on transient meteorological conditions based on geography, wind, humidity and industrial clusters for prediction / forecasting.
- Facilitate in analysis of Environmental data for newer environmental initiatives and regulations - emission restrictions, emission levels and emission volumes

## Companies and Industries

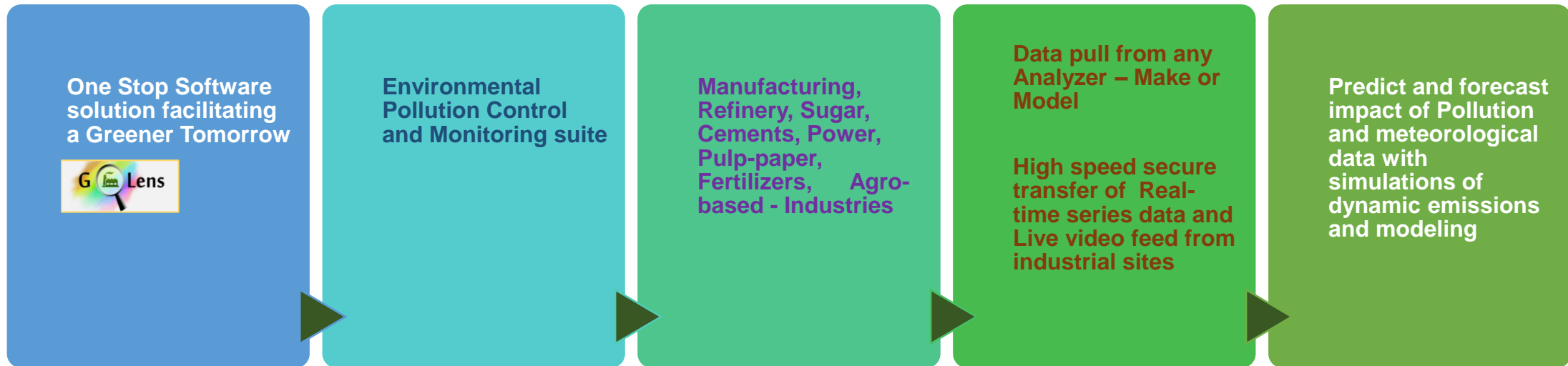
- Data collection and comprehensive Monitoring along with facilitate measurement of their pollution control equipment.
- Remote surveillance and tracking of devices and equipment's
- Instant alerts of e.g. pollution events, thus enabling them to take action immediately
- Facilitate them to take action when pollution sources are identified to install treatment and prevention equipment
- Reduce time in acquiring data (field visits, assembling lab reports, downloading information from loggers) instead read data from remotely deployed IoT devices to spend their time analyzing the data rather than acquiring it.
- Using remotely deployed devices, we can assemble large datasets with speed, helping to examine field data quickly and in real-time.
- Modelling and predictive analytics tools can be utilized to enable consultants to predict likely behaviour of a variety of contaminants.
- Controlling emissions from industrial plants through adherence.

## Analyzer / Stack Equipment Vendors

- Inbuilt Interfacing options to their Analysers and Equipment's
- IoT Gateway for Secured data communication
- Remote Calibration and Configuration Services
- Device Installation and Integration Services

Are we ready to shift from fundamentally unsustainable and exploitative direction to a restorative clean environment, use renewable energy and fight to curb global warming...

Look at the technologies and solutions that can help you achieve lower carbon kilowatt-hours!



*Use today's 'best in class' Solution to set tomorrow's baseline.*

# Key Features



## Connectivity to any Device, Anywhere

Plug and Play based protocol for any analyzer make or model



## Certified & Compliant

MCERTS, EN14181 certified and ISO 7168 Compliant



## High Integrity data transfer

Secured, encrypted HTTPS transfer of data from devices onto server and digital signature



## Remote Calibration enabled

Feature inline with Qual 2, Qual 3 and AST



## Regulatory Compliance

Pre-built Reports for Regulatory Compliance including IED Reports  
Auto Generation of Qual 3 Repots, CUSUM, SHEWART and EMMA charts



## Real-time alerts and alarms with SMS and email integration

Real-time event processing triggering real-time actions



## Live intuitive Dashboards

Live Consolidated Dashboards including Analyzer status and Faults



## Integrated Advanced Analytics

Wind rose, pollution rose for source identification



## Live high streaming Camera feeds

Visible Emission Monitoring using Live Camera Feeds without any plug-ins

# Key Differentiators – Unique Features



## Connectivity to any Device, Anywhere – Open API based

- Protocol support built into the solution design to support any Analyzer of make and model.
- Facilitates easy interfacing with stack equipment's of any vendor. Plug an Play Model of the software enables remote deployment with zero site presence.
- One of the Critical need is, as the deployments are highly fragmented across multiple instrument suppliers, quick addition of new protocols / devices in the platform



## Camera Streaming without Plugin

- Live streaming of camera data without Plugins
- ISO-7168 compatibility & 100% Accurate value in real time of the analyser readings monitored remotely



## High Scalability Platform

- Highly Scalable Platform based on IoT, Cloud and Big Data principles providing High Availability
- Built on Distributed parallel processing design
- Highly reliant and performant platform which is currently supporting close to 5000 devices from 2500+ industries sending concurrent data on to Central server



## Remote Configuration & Control

- Glens gateway device – a compact and flexible data logger with advanced security features
- Advanced Analytics for automated tamper detection, calibration drift, data simulations, geographic geofencing etc



# Target Market



## Canada –

- Power
- Mining
- Mineral processing
- Dry cleaning
- Printing industry

## Eastern Europe

- Energy supply
- Chemicals
- Iron & Steel
- Metal (ferrous and non-ferrous) & Mining
- Pulp & Paper

## Middle East –

- Oil & Gas refineries
- Desalination plants
- Large power stations
- Cement manufacturing
- Smelting plants

## South East Asia

- Coal fired power plants
- Paper and pulp
- Textiles
- Food and beverages

# GLens – Environmental Pollution Control and Monitoring suite for Industries

GLens (Green Lens) empowers Regulators and Industries, through real time insights on the various emission and discharge levels by monitoring stations in real time.

## Ambient Air Quality Monitoring (AAQMS)

## Continuous Emissions Monitoring System (CEMS)

Web based software for real-time online monitoring of gas or particulate matter concentration or emission rate; parameters measured are SO<sub>2</sub>, CO, CO<sub>2</sub>, NO, NO<sub>2</sub>, NO<sub>x</sub>, H<sub>2</sub>S, NH<sub>3</sub> and VOC etc.,

## Effluent Quality Monitoring System (EQMS)

Monitor contaminants in water, wastewater, soils, sewage. Effluent parameters that are monitored and measured are pH, Temperature, Flow, TDS, BOD, COD, TSS, pH, Flow, Turbidity etc.,

- **Remote Calibration** and Configuration Services
- Device Installation and Integration Services

**Data Acquisition, Processing, Handling and Management** of Industrial and Environmental Data. Mobile Applications for Monitoring



# Products from GLens – iLens

Environmental Pollution Control and Monitoring suite for Industries

1

## iLens Client Data Acquisition and Monitoring System

For installation on Industry systems

2

## iLens Data Logger

IoT Gateway for Secured data communication

3

## iLens -GLens Central Server

For Remote Data monitoring , Reporting and Analytics

iLens Client Data Acquisition and Monitoring System –  
**Client side software**  
For installation on Industry systems

Directly pull the data from the Analyser

RS232/RS485 or DAC without any intermediate software

High Integrity data transfer

secured, encrypted HTTPS transfer

Live Camera Feed

from IP Camera's in site

Provision for GPS positions

Provision for GPS position of Analyser along with data collection

Automated Data Quality Code assignment

during data collection based on delayed data, analyser failure, fault etc.

Bi-directional connectivity

with each client to set the Analyser configuration and remote calibration

# Products from Glens - iLens

Environmental Pollution Control and Monitoring suite for Industries

## iLens Data Logger IoT Gateway for Secured data communication

### Interface through various modes

4 to 20 mA DC

RS232 input

RS485. Also we can do parallel connections on a single port.

LAN port available for TCP/IP

### Plug in any Analyser – any Make any Model

- Siemens
- Ecotech
- Teledyne
- Fuji
- Hach
- Forbes Marshal
- Horiba
- BAM – MetOne
- Sick Maihak
- RAE Guard
- Thermo Scientific
- Honeywell
- Met One
- MRU
- Casella
- ABB
- Environmental SA

Emission Parameters	Ambient Parameters	Effluent Parameters	Metrological Parameters
SO2	PM10	pH	Absolute humidity
PM	PM2.5	Temperature	Relative humidity
CO	O3	Flow	Pressure
CO2	CO	TDS	Precipitation
NO	CO2		Direct Solar Radiation
NO2	NO		Direct Solar Visible Radiation
NOx	NO2		Direct Solar UV Radiation
NH3	NOx		Direct Solar IR Radiation
VOC	VOC		Temperature
	SO2		Wind Velocity

# Products from Glens - iLens

Environmental Pollution Control and Monitoring suite for Industries

## iLens (Glens) **Central Server Software** Features For Remote Data monitoring , Reporting and Analytics

### ISO Data format compliance

- Web Based software – MCERTS certified
- Compliant to ISO-7168 Data format

### Pre-built alarm and alerts

- Configured on the Regulators defined thresholds for the industry.
- SMS/Email integrated with the Alarms and Alerts

### Integrated workflow

- Integrated workflow for site and regulator collaboration
- Workflow based Data Validation Module

### Reports and Analytics

- Pre-built Reports as per Regulator requirements Provision to add any custom reports.
- Integration with Predictive Analytics software for statistical inference on the data

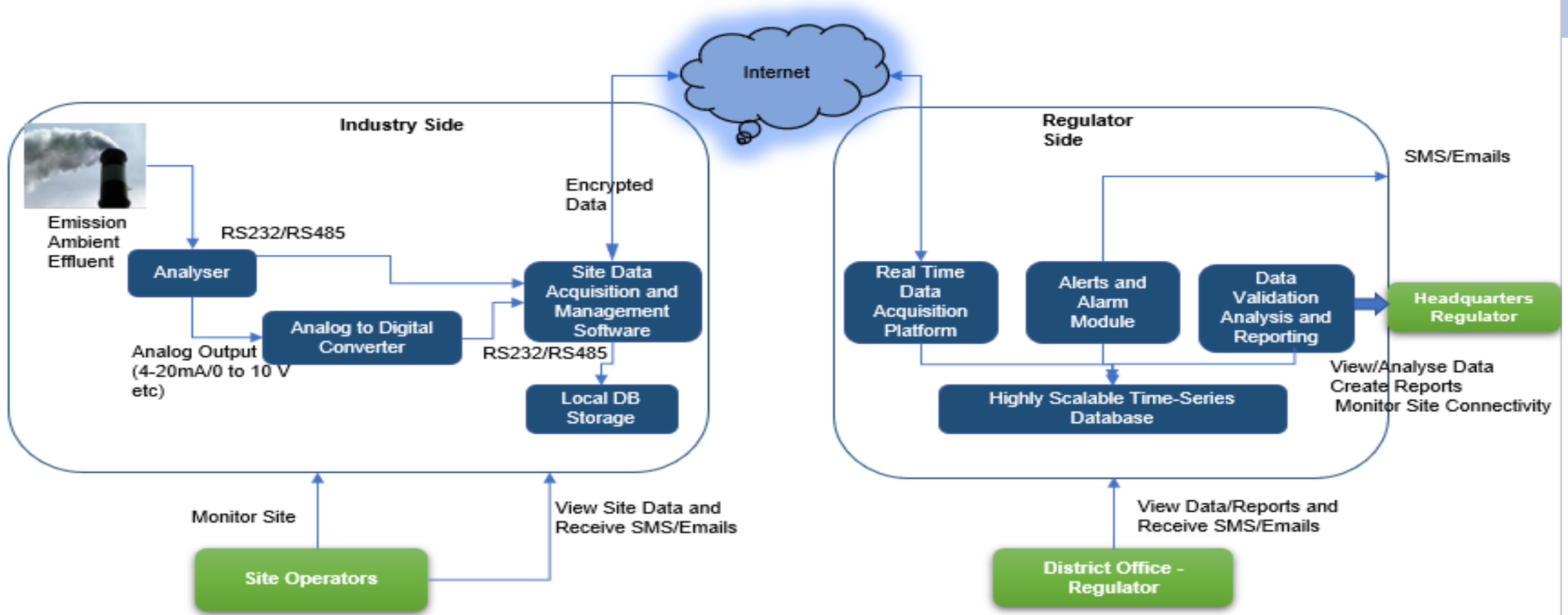
### Access Control Mechanism for Robust Security

- Role based secured access for industry site and regulators with inbox for each individuals

### Highly Scalable - REST based open protocol

- Highly Scalable built on REST based open protocol to support Multi-client scenarios.

# Conceptual view – Real-time data acquisition





# GLens – Real-time monitoring of data – Summary View

Site Status List / Real Time Report / Trends

## GLens Testing Site

ECity, Bengaluru

FERTILIZER

Refresh

Data Last Received On 4 minutes ago	CPCB Last Updated Time 22 minutes ago	Configuration Updated On 3 days ago	Calibration at 3 days ago	CEMS 21	EQMS 2	AAQMS 3	Total Stations 26
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### Live Readings

Emission Effluent Ambient All

Help

 279.14 mg/m3 AMMONIA_PRI - CO 15 MinsAvg: 233.74 mg/m3 Limit: 0 - 100.0 mg/m3 Range: 0 - 1000	 97.52 mg/Nm3 AMMONIA_PRI - NOx 15 MinsAvg: 104.01 mg/Nm3 Limit: 0 - 100.0 mg/Nm3 Range: 0 - 1000	 0.0 mg/Nm3 AMMONIA_PRI - SO2 15 MinsAvg: 0.43 mg/Nm3 Limit: 0 - 100.0 mg/Nm3 Range: 0 - 1000
 NA mg/m3 AN_Prlng_Twr_K8 - CO 15 MinsAvg: NA mg/m3 Limit: 0 - 100 mg/m3 Range: 0 - 1000	 NA mg/Nm3 AN_Prlng_Twr_K8 - NOx 15 MinsAvg: NA mg/Nm3 Limit: 0 - 100 mg/Nm3 Range: 0 - 1000	 NA mg/Nm3 AN_Prlng_Twr_K8 - SO2 15 MinsAvg: NA mg/Nm3 Limit: 0 - 100 mg/Nm3 Range: 0 - 1000

# GLens – Real-time monitoring of data – Trends View



Site Status List / Real Time Report / Trends

## GLens Testing Site

City, Bengaluru FERTILIZER

Quick Range

1 Day 3 Days 7 Days 30 Days

From Date \* 1/6/2021, 8:22 PM To Date \* 1/7/2021, 8:22 PM Station HRS1\_1

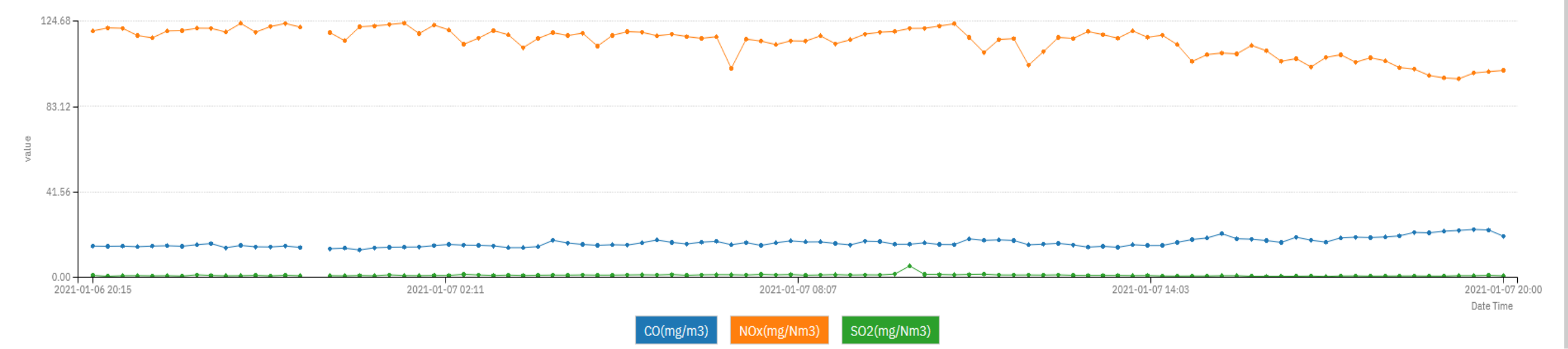
Frequency 15 Minutes

table View  Fetch

## RealTime Report

Print Excel Pdf

### HRS1\_1 - 15 Min - Average Data



# Analyzer setup

Dashboard | Live Status | Regulator Reports | Industry Reports | Star Rating | Analytic Reports | Operation Reports | Calibration | Utilities | Work Flow <sup>14428</sup> | <sup>339271</sup> | Sayantanray

### System Configurations / Add Analyser

Name X Monitoring Type

**Add Analyser**

Name \* Shimadzu Corporation Monitoring Type \* Effluent Analyser Make \* Shimadzu Corporation Number of Parameters \* 7

Parameter Details \*

x BOD x COD x TOC x Ammoniacal Nitrogen x Total\_nitrogen x Phosphate x TSS x

Close Save

S. No	Name	Monitoring Type	Analyser Make	Number of Parameters	Parameters
1					
2					
3					
4					
5					
6	Prima-AAPQMS-19C	Ambient	Prima	6	SO2, CO, NOx, O3, PM10, PM2.5,
7	Theta_MP600	Ambient	Theta_MP600	7	Wind_Speed, Wind_Direction, Relative h...
8	DHT_50	Emission	DHT_50	1	PM,
9	Hoiba	Ambient	Hoiba_370	1	CO,
10	HD - L14-65PTZ36X	Effluent	VINTRON	1	Camera,

Total Records : 857

# Custom Reports

← Custom Reports / Generate report

Back

Industry Name

Deepak Fertilizers And Petrochemicals Corp. Ltd.

District

Raigad

Station

ETP\_1\_Outlet

Criteria

15-minutes

Address

Plot K-1-MIDC-Industrial- Area-Taloja

State

Maharashtra

Parameters

ETP\_1\_Outlet-COD

Date

From 2021/01/07 00:00:00 To 2021/01/07 19:56:12

City

Navi Mumbai

Category

Fertilizer

Report Format

Tabular

Tabular view

Time × ETP\_1\_Outlet-COD - (mg/l) Raw ×

Search...

S. No	Time	ETP_1_Outlet-COD - (mg/l) Raw
1	2021-01-07 00:00	45.16
2	2021-01-07 00:15	46.41
3	2021-01-07 00:30	44.86
4	2021-01-07 00:45	45.18
5	2021-01-07 01:00	45.32



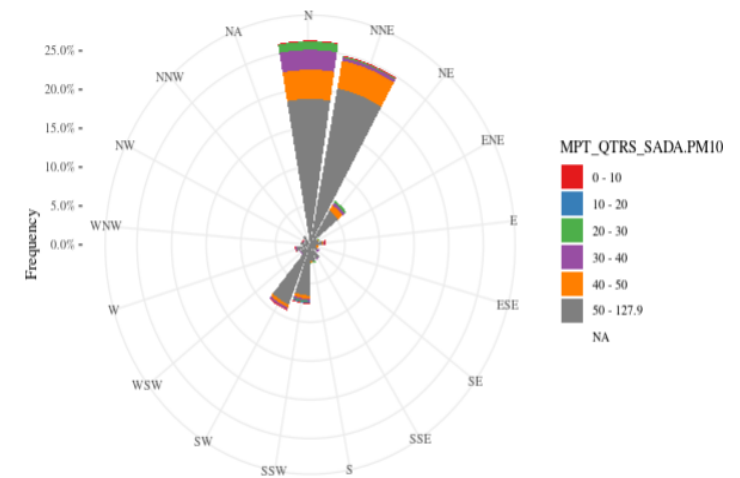
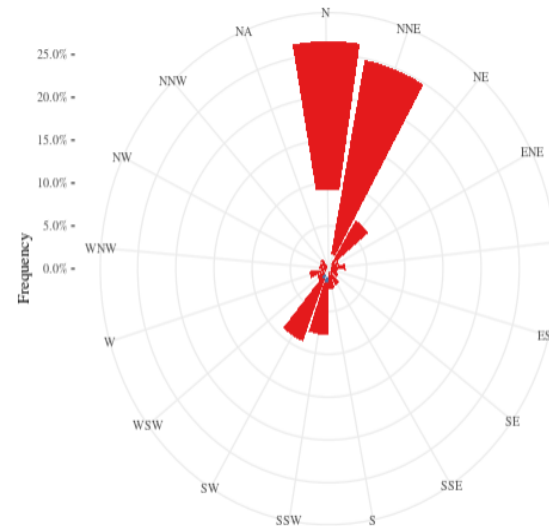
## Analytics Reports

**Date Range**  
2020-12-07 to 2021-01-07

**Report Type:**  
wind-pollutionRose ▾

**Parameter:**  
MPT\_QTRS\_SADA.PM10

- PDF
- CSV
- Word
- PNG
- JPEG





# About Knowledge Lens

# Knowledge Lens ☐☐ Digital Transformation Solution Provider



**Product and Services driven** company with niche focus on AI, Big Data, Cloud, IoT, Blockchain, Augmented Reality



Big Data, IoT and AI solution provider for **Fortune 500** companies  
3000 + customers worldwide (US, Middle East, India)



**Machine Learning** App deployed on the Edge for one of the world's top Manufacturing company with actionable insights for Predictive Analytics



Dedicated technology group of **450+** people in AI, Big Data, IoT, Cloud, Blockchain, AR/VR



**Strategic alliances** with industry-leading technology companies



## Some Industry Recognition

- Recognized as one of the 25 most **Valuable Data Science Companies** Building the Future Blocks – The CEO Magazine – Feb 2020
- Winner of **Most Admired Data Solution Provider 2019 – WPI BIC 2019**
- Winner of **Informatica Implementation Partner of Year 2019**
- Recognized as one of the **10 most Recommended Big Data Solution Providers** – CIO insider 2019
- Awarded **CEMS Solution Partner Award** at DigiGreen Conclave 2019
- Awarded - One among the **NASSCOM Emerge 50 products** 2016

Microsoft Partner | Gold Data Analytics



ThermoFisher SCIENTIFIC



# Knowledge Lens – Industry 4.0 Experience

## ASSETS CONNECTED

Total Assets being monitored

200,000 +

## GATEWAYS LIVE

Gateway & Sensor devices deployed across the world

15,000 +

## APPLICATIONS

Use cases implemented across Industry verticals

54

## INDUSTRY SECTORS

Different sectors being catered by iLens

Industrial & Manufacturing – Textiles & Flooring, Cement, Sugar, Steel  
Energy & Utilities | Food & Beverage | Environment & Water  
Pharmaceuticals | Agriculture | Transport & Logistics  
Industrial Safety

## iLENS CLIENTS

Customers worldwide

3000+

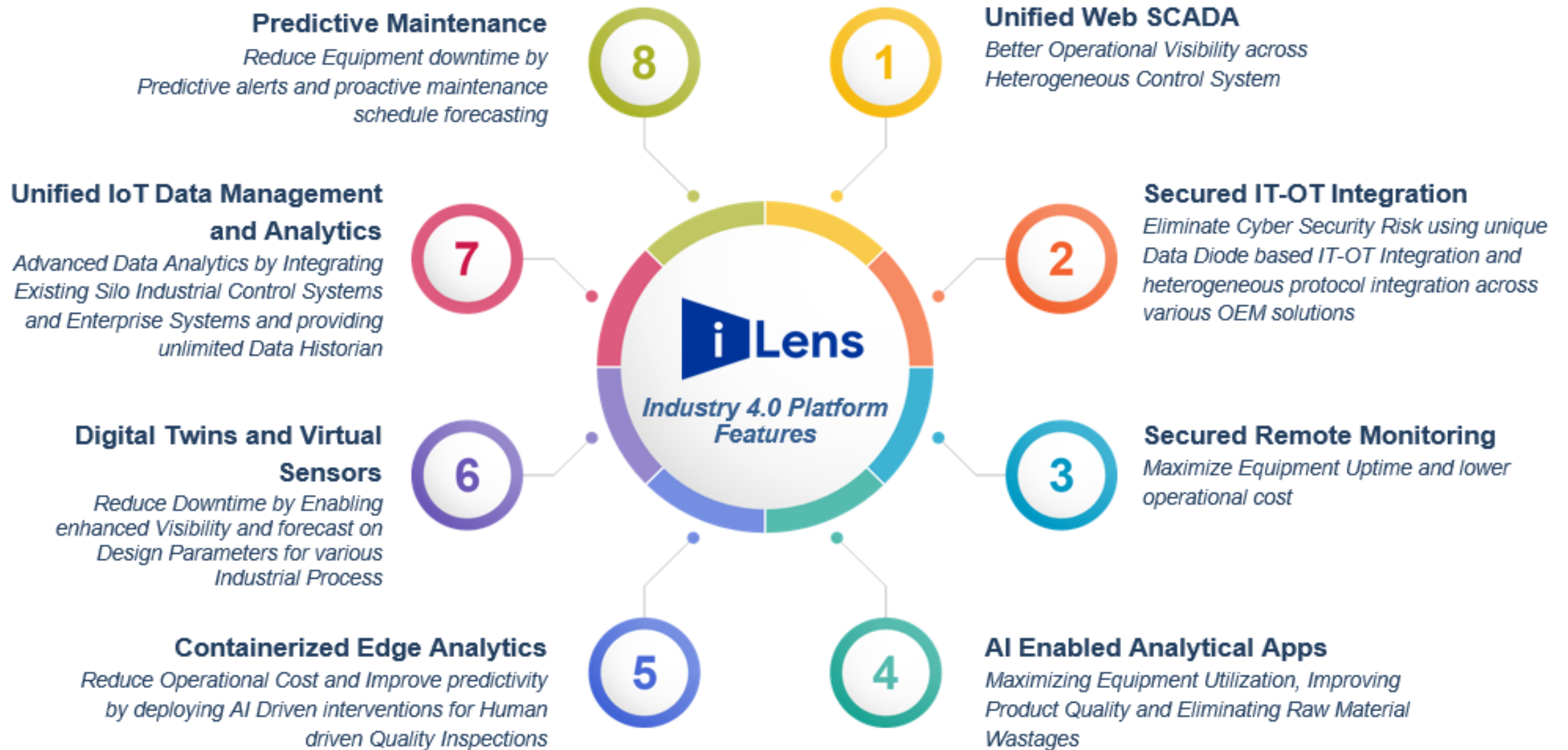
## DELIVERED VALUE

Value created for our customers per year

10 MUSD+



# Next Generation Industrial IoT Platform



## Our Products



## Who We Are

Knowledge Lens is a software product company that focuses on developing innovative solutions in niche technology areas such as Artificial Intelligence, Data Science, Industrial IoT, Blockchain and Cloud. Our mission is to discover intelligent insights from enterprise data and deliver business value to our customers. Our offices span across different geographies, and we are privileged to serve 3000+ companies across the globe with our unique products and services. We have successfully transformed companies into Smart Enterprises by implementing Next Generation Enterprise Data Lakes, AI Powered Intelligent Apps and Industry 4.0 solutions both on premise and cloud.

We are a "Great Place to Work" certified company. We have strong partnerships with industry leaders such as Microsoft, Databricks, Informatica, ThermoFisher, ABB, YOKOGAWA etc. for our products and services.



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