

# Smart Shopfloor Data Collection System

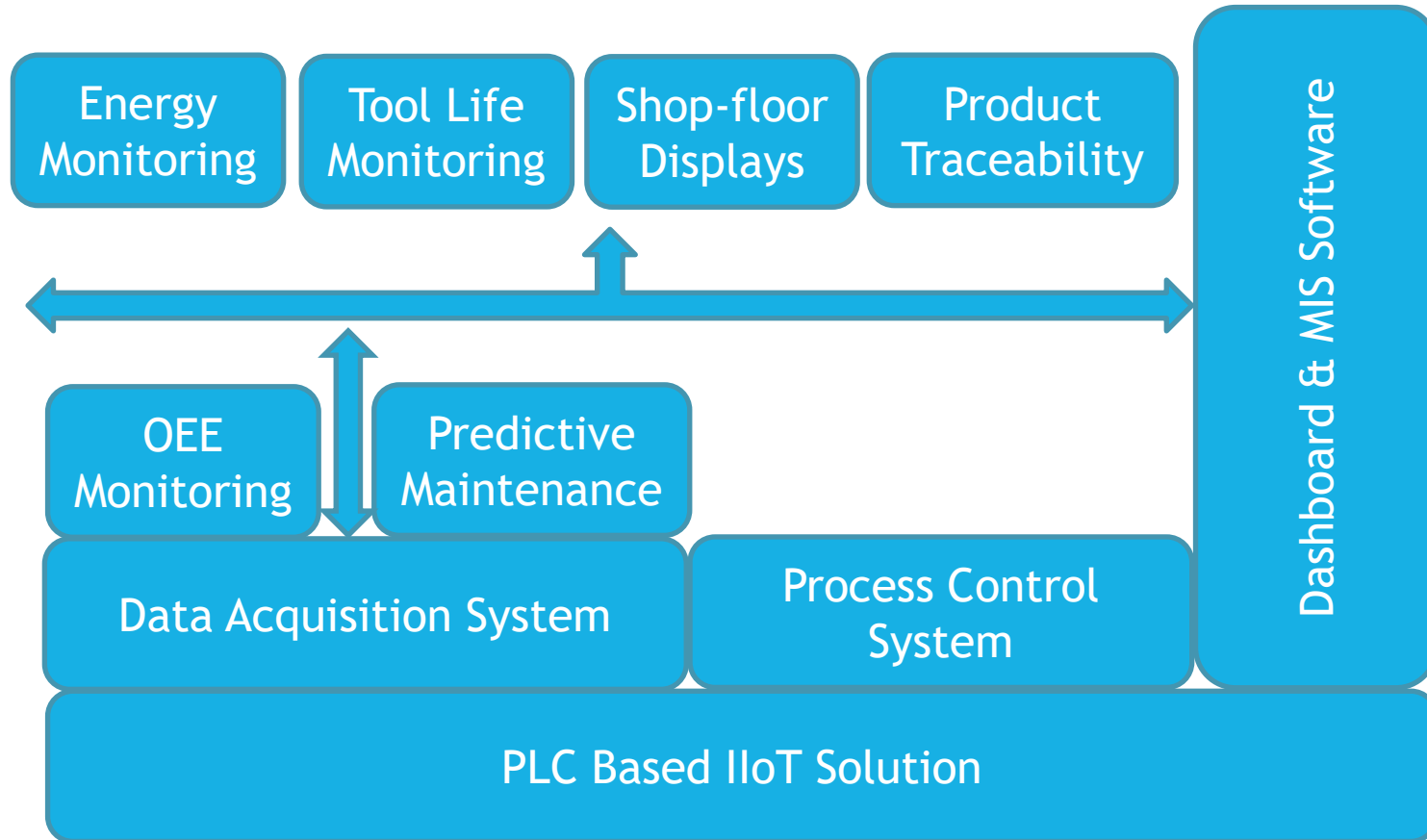
A True IIoT Platform with collaboration of IT and OT Experts

By Softgear Systems and Partners

# Industrial Internet of Things

- ▶ IIoT = Internet of Things
- ▶ Technologies and concepts keeps evolving
- ▶ Organizations keep looking for opportunities for improving process efficiencies and effectiveness (TPM, Lean, Kaizen etc)
- ▶ IIoT solution helps in reducing data hangover, People can focus on Data Analysis instead of Data creation
- ▶ Minimum error in Data
- ▶ IIoT helps to look at Process and Data in a Integrated way
- ▶ Improved Visibility and build responsive culture on floor

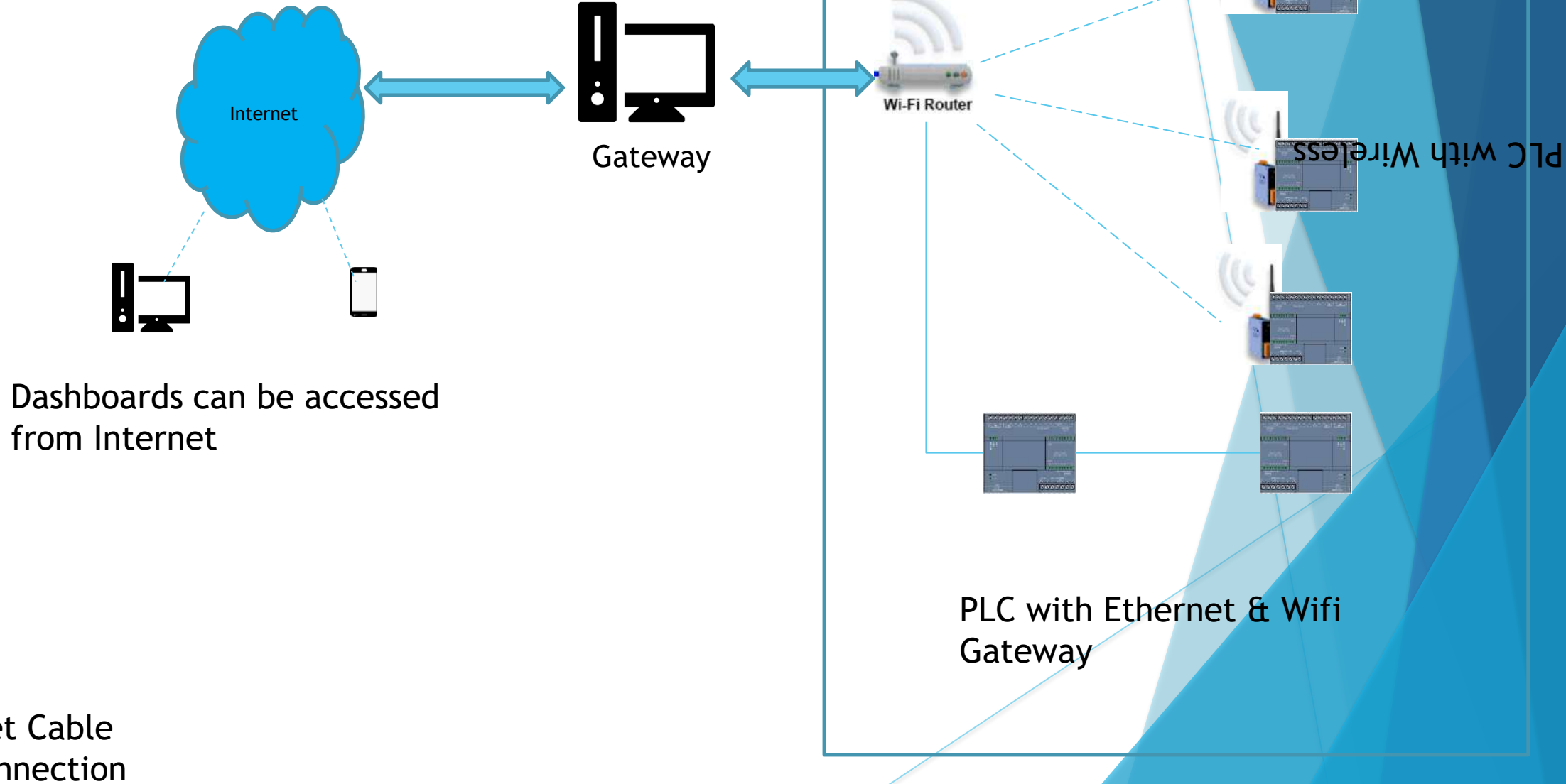
# IIoT Landscape



# Solution - OEE Monitoring

- ▶ OEE - Overall Equipment Effectiveness
- ▶ Created by collaborating with experts from IT and OT fields
- ▶ Helps in Near realtime OEE Monitoring from anywhere
- ▶ Most of the shopfloor Machines (Old and New) can be interfaced using PLC gateway
- ▶ Helps in Shopfloor Monitoring using %OEE, Machine status, Plan vs Actual Production Dashboards
- ▶ Important step towards Industry 4.0
- ▶ Supports PC and Mobile Interface
- ▶ Integration with ERP possible
- ▶ Wifi Integration Possible
- ▶ Inbuilt Data Security

# Solution Architecture



# Benefits of IIoT

- ▶ Improved Shopfloor visibility can bring overall OEE improvement by approx. 10%-15%
- ▶ Lot many organization specific improved can be seen:
  - ▶ Reduction in WIP
  - ▶ Better Planning and Scheduling
  - ▶ Improved Working Capital
  - ▶ Better Response to Customer Queries
  - ▶ Better Traceability
  - ▶ Better Job Costing visibility
  - ▶ Reduction in Direct and In-direct expenses
  - ▶ And Many More depending on How organization wants to make use of collected Data ?

# Dashboard Screens

vInnovate Technologies



Dashboard

Local Admin

Super Admin

Support

Customer support

X

vSmart(IOT) Manufacturing Dashboard

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Main Dashboard Cumulative Cycle Time Reporting

Machines	Actual Value	Shift Production		Target Value	Status	OEE
DC08	13	0.1%	0.0%	99.2%	9999	00:00
DC05	11	0.1%	0.0%	99.2%	9999	00:00
machine 21	4263	42.6%	0.0%	57.4%	9999	00:00
machine 22	3874	38.7%	0.0%	61.3%	9999	00:00

No Power Idle Run Alarm Actual Gap Remaining

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# Dashboard Screens

**vinnovate Technologies**

**vsmart**  
DASHBOARD

- Dashboard
- Local Admin
- Super Admin
- Support
- Customer support

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### vSmart(IOT) Manufacturing Dashboard

Main Dashboard **Cumulative** Cycle Time Reporting

DC08 [EXPORT OEE SHIFT](#)

Hour  Shift  Day  Week  Month  Year

**Cumulative** Actual/Target **13 / 9999** **OEE %** OEE/Target **0.13 / 100**

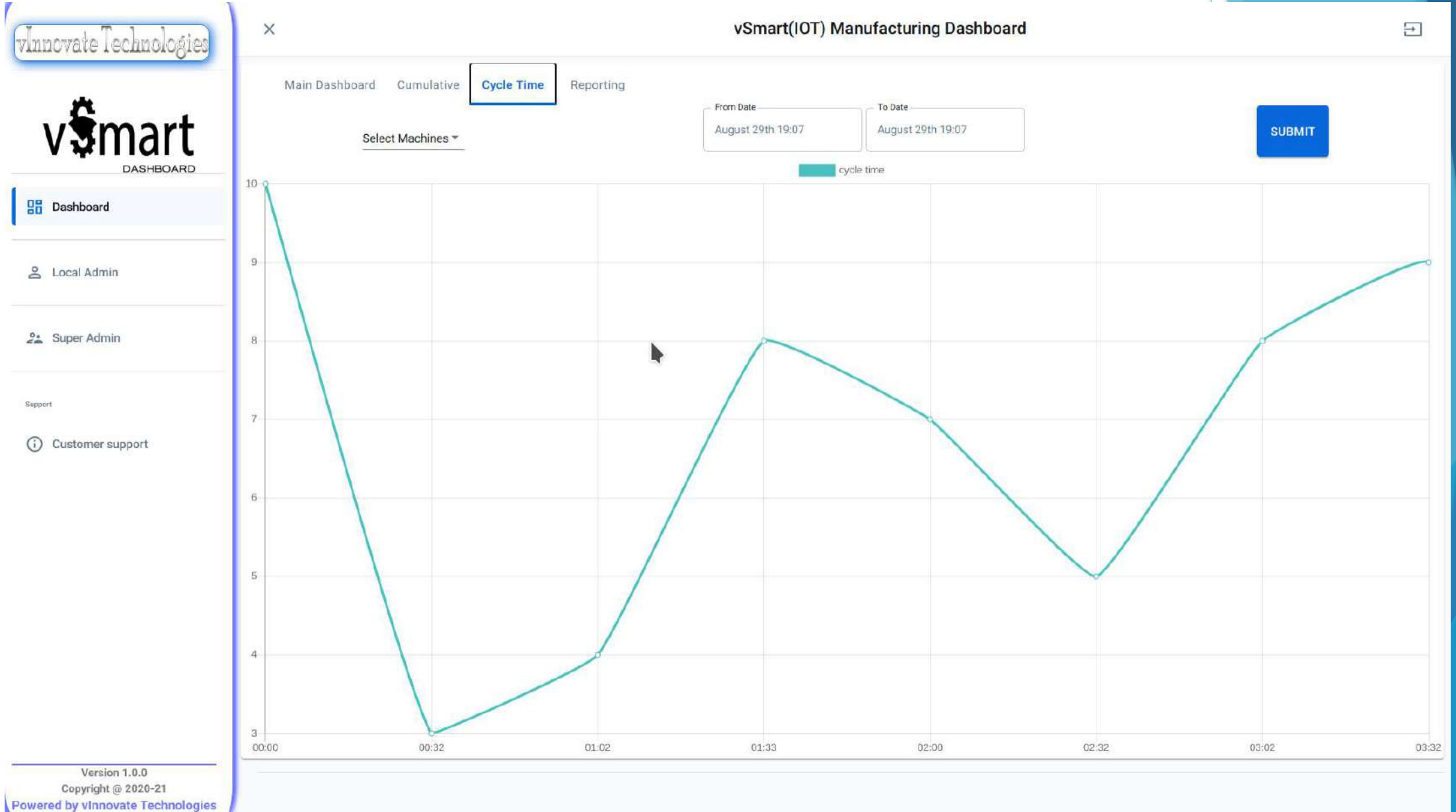
Actual Gap Oee

Shift	Actual	Gap
current shift	13	9986
last 1 shift	13	9986

Shift	Oee
current shift	0.13
last 1 shift	0.13



# Dashboard Screens



# Dashboard Screens

The screenshot displays the 'Local Admin' dashboard for vSmart. The interface includes a sidebar with navigation options: Dashboard, Local Admin (selected), Super Admin, Support, and Customer support. The main content area features a top navigation bar with tabs: MANAGE PLC (active), MANAGE SHIFT, MANAGE TARGETS, MANAGE DOWNTIME, MANAGE REJECTION, MANAGE USERS, MANAGE PART TARGET, and MANAGE PROPERTY. Below the tabs, three large digital displays show the numbers 19, 07, and 31. The central area contains two panels for PLC management:

- PLC1 Panel:** Shows 'Plc Device' as PLC1. The 'Next Cycle Time is' field is empty. The status is 'Plc Gateway is in ideal state' (in red text). The 'Last Fetched Time' is empty. A toggle switch is in the 'ON' position, and a 'FORCE PULL' button is visible.
- PLC2 Panel:** Shows 'Plc Device' as PLC2. The 'Next Cycle Time is' field contains '19:07:23'. The status is empty. The 'Last Fetched Time' is '19:07:22'. A toggle switch is in the 'ON' position, and a 'FORCE PULL' button is visible.

At the bottom left, the footer text reads: Version 1.0.0, Copyright @ 2020-21, Powered by vInnovate Technologies.

# Role Based User Management



MANAGE PLC

**MANAGE SHIFT**

MANAGE TARGETS

MANAGE DOWNTIME

MANAGE REJECTION

MANAGE USERS

MANAGE PART  
TARGET

MANAGE PROPERTY

CREATE 1 WEEK SHIFT AND TARGET

Select Month  
August 2020

## Configure Shifts

Search icon, Close icon, Add icon

Actions	Shift Name	Shift Date ↑	Shift Start Time	Shift End Time
	shift 1	2020-08-14	7:00:00 AM	7:00:00 PM
	shift 2	2020-08-14	7:00:00 PM	7:00:00 AM
	shift 1	2020-08-15	7:00:00 AM	7:00:00 PM
	shift 2	2020-08-15	7:00:00 PM	7:00:00 AM
	shift 1	2020-08-16	7:00:00 AM	7:00:00 PM

5 rows | 1-5 of 36

# Role Based User Management

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DASHBOARD

Dashboard

Local Admin

Super Admin

Support

Customer support

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Local Admin

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MANAGE PLC

MANAGE SHIFT

**MANAGE TARGETS**

MANAGE DOWNTIME

MANAGE REJECTION

MANAGE USERS

MANAGE PART  
TARGET

MANAGE PROPERTY

select month











August 2020

## Configure Shift Targets

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Actions	Shift Name	Shift Date	Machine Name	Register Name	Register Target Value
 	shift 1	2020-08-14	DC08	ACTUAL	9999
 	shift 2	2020-08-14	DC08	ACTUAL	9999
 	shift 1	2020-08-15	DC08	ACTUAL	9999
 	shift 2	2020-08-15	DC08	ACTUAL	9999
 	shift 1	2020-08-16	DC08	ACTUAL	9999

5 rows |< < 1-5 of 72 > >|

# Role Based User Management

### Configure Registers

Drag headers here to group by

Actions	Organization Name	Machine Name	Plc Device	Register Name	Register Start Location	Register End Location
 	vinovate	DC08	PLC1	MACHINE NUMBER	0	0
 	vinovate	DC08	PLC1	DATE	0	0
 	vinovate	DC08	PLC1	TIME	0	0
 	vinovate	DC08	PLC1	ACTUAL	0	0
 	vinovate	DC08	PLC1	STATUS	0	0

5 rows | 1-5 of 264

# Extended Solution

- ▶ Solution can be customised for following requirements as well
  - ▶ Utility Monitoring
  - ▶ Shop Floor Dashboard
  - ▶ Critical Process Parameter Monitoring
  - ▶ Machine Health Monitoring for OEM's
  - ▶ Integration with Building Management solution
  - ▶ Online Reporting and Alerts (SMS/Email)

# About Softgear Systems

- ▶ More than 10 Yrs of Industry Experience
- ▶ Integrated Solution Provider for Shopfloor Automation (Siemens and Mitsubishi)
- ▶ Expert on Die-casting Machines
- ▶ Specialist in Machine Reconditioning
- ▶ Customer Reference
  - ▶ SIGMA
  - ▶ Endurance
  - ▶ Whirlpool
  - ▶ Honda
  - ▶ Minda Industries
  - ▶ Foundation Brake

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