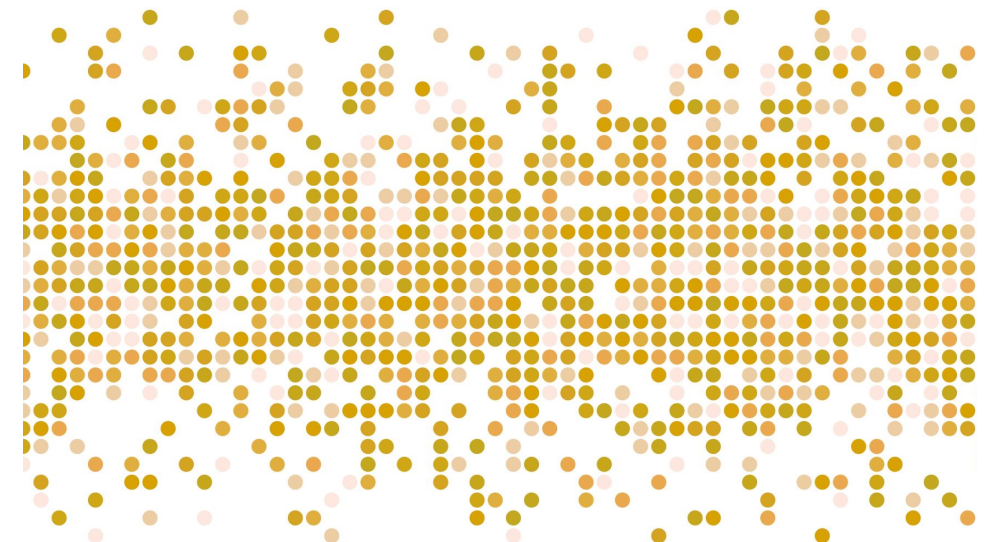


*Achieving New Possibilities*

# Industrial IOT Platform

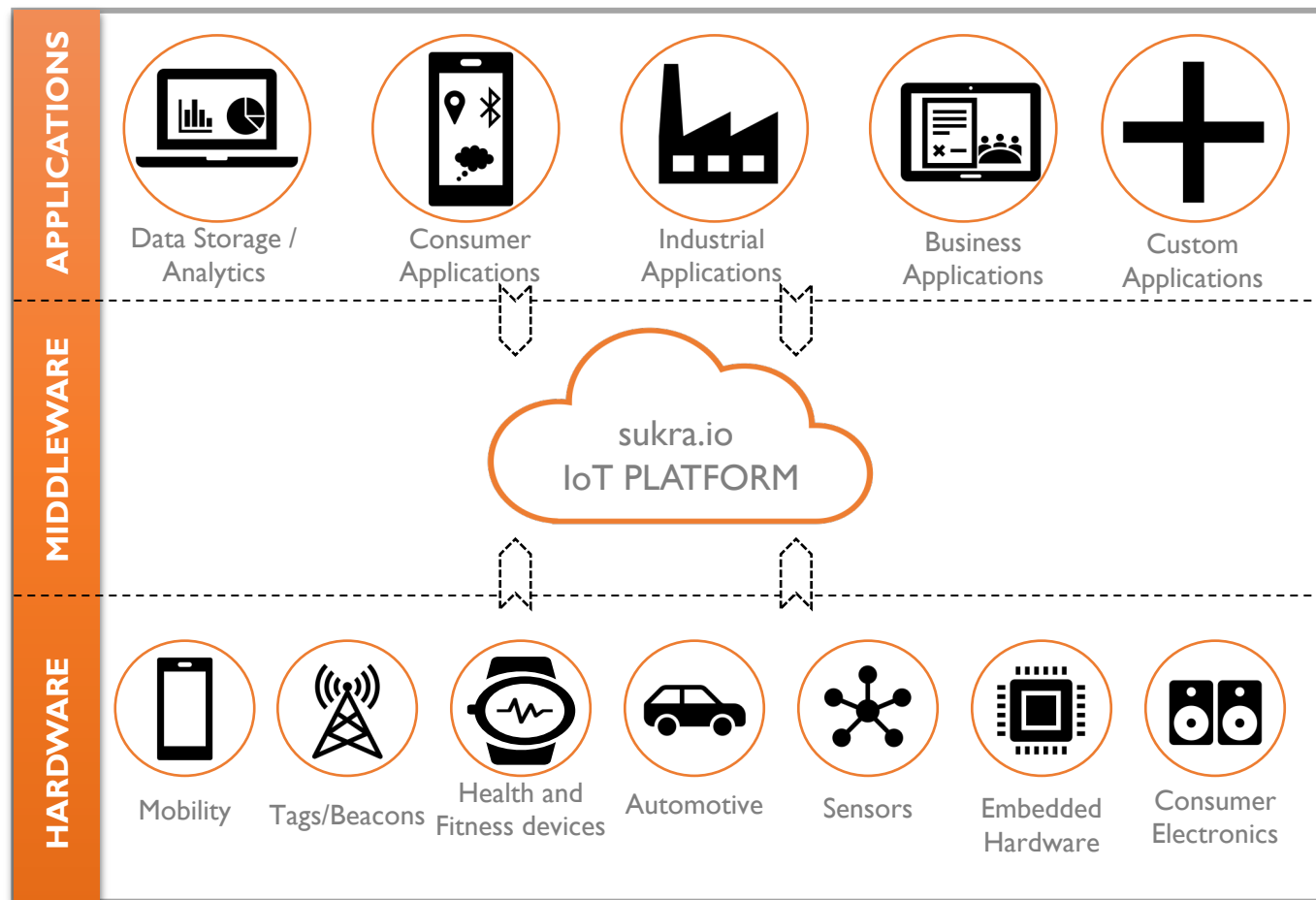


# SUKRA



# Next-gen sukra.io platform opens incredible new horizons for any business IoT initiatives

sukra.io is an enterprise-grade IoT platform built on a modern cloud-native architecture and a fully customizable feature set. Based on flexible microservices, sukra.io easily adapts to almost any need and application. It scales from a tiny start-up to a massive corporation and supports advanced deployment models for multicloud IoT solutions.



## The most flexible IoT platform for any business

- ✓ Built on a modern cloud-native architecture and flexible microservices,
- ✓ Fully customizable feature set.
- ✓ Highly Scalable and adaptable to various Business application
- ✓ Supports advanced deployment models for multi-cloud IoT solutions.
- ✓ Set up data processing and analytics pipelines
- ✓ *Enterprise-grade security* in and out of IoT device ecosystem.
- ✓ Orchestrate *On-Prem* , *Single* and *multi-cloud* IoT deployments
- ✓ Standard ways to manage and retrieve observations and metadata from heterogeneous sensor systems.

## Industries Supported



## Advantages





# SUKRA

# How our Industrial Internet of Things makes a difference

With its modular, highly customizable architecture and latest technology stack, sukra.io gets you out of typical vendor constraints and fully adapts to your vision of IoT and your business case. This is the ultimate IoT enablement experience that any business can finally relate to.

## Advantages

- Modern Micro Service Architecture (Clear separate of concerns between components)
- Scalable, Elastic and Self-healing
- Services to scale up and scale down using container and orchestrations
- Security and Compliance - TLS/DTLS for device communication, VPN for infrastructure security, OAuth/OpenID for identity

## Benefits

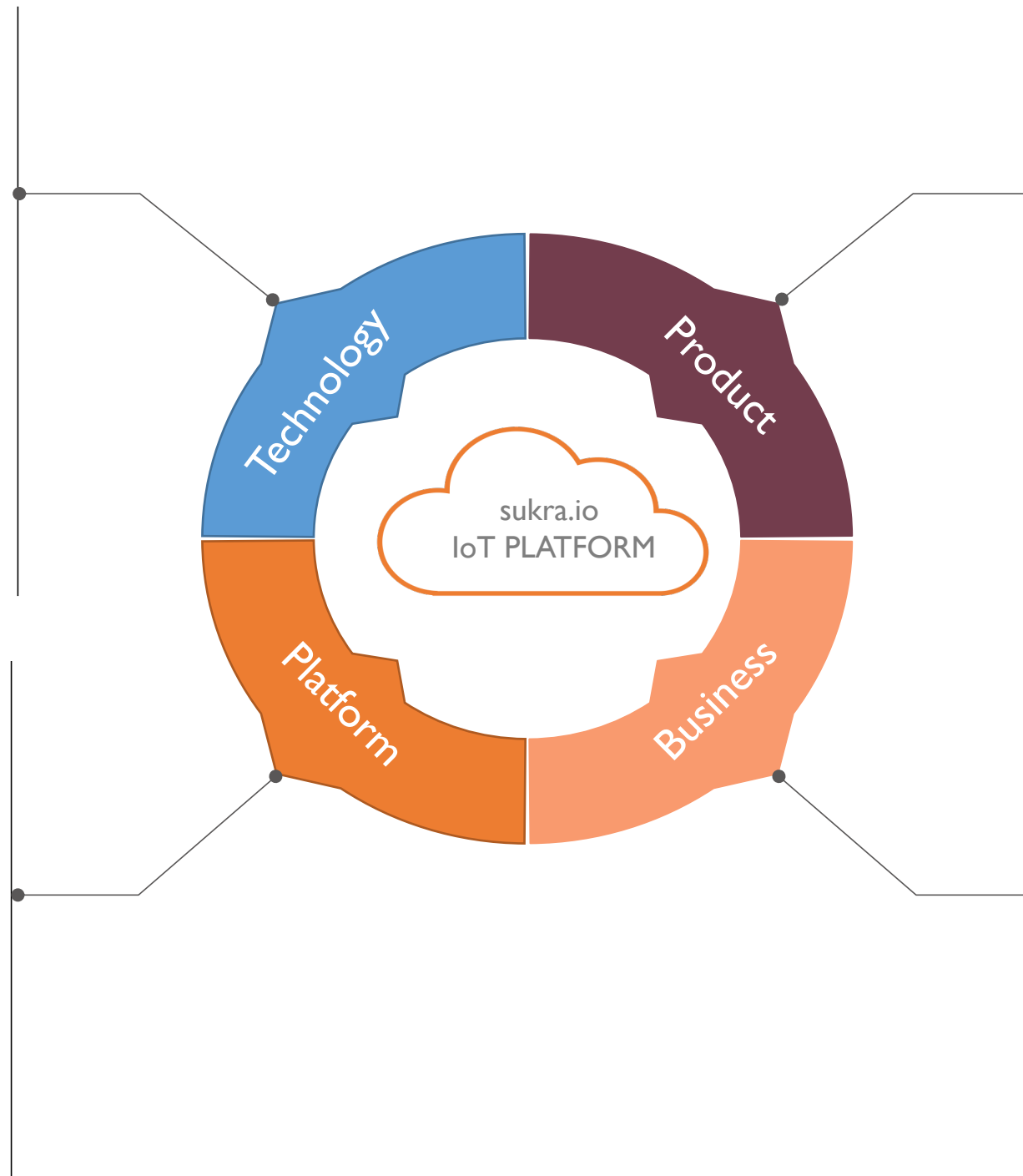
- Time to market
- Product Life cycle management
- Agile development process
- Easily customizable to any industry / business use case
- Less learning curve and developer friendly
- Continues platform upgrades
- Easy external system integrations

## Capabilities

- Modular and Customizable
- Simple and Fast Development
- Hardware Agnostic
- Open Protocols and Messaging standards
- Cloud Agnostic
- API first approach
- Application versioning
- End to End DevOps, Production support

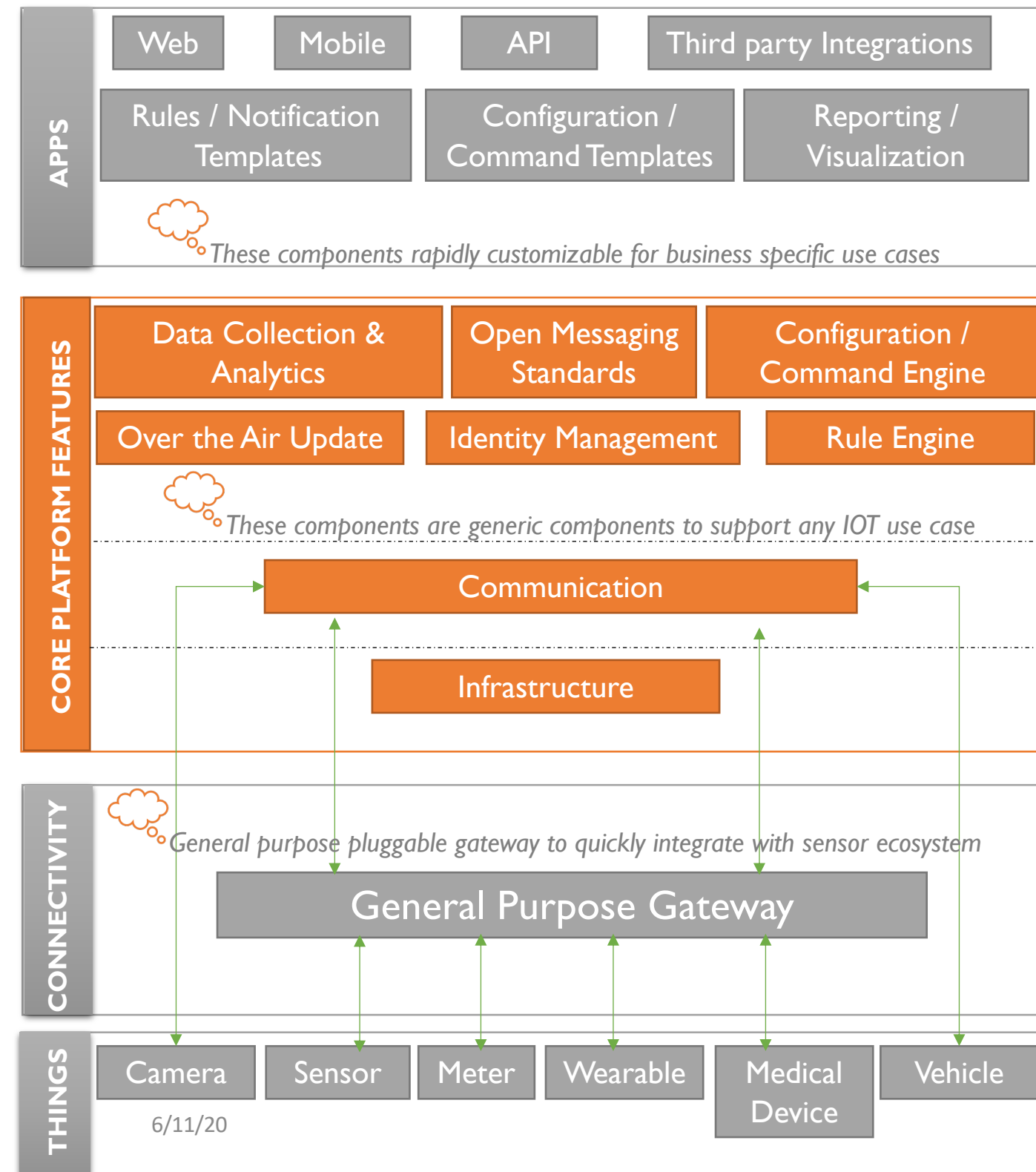
## Outcomes

- Cost efficient and easy subscription models
- Low TCO to maintain devices and cloud (Total Cost to Ownership)
- No cloud Vendor locking
- SAAS/PAAS monetization capabilities
- White labelling – easily branded for resellers / partners



# Technical Advantages and Architecture

Customizable microservice architecture and open protocols, enables enterprise-grade scalability and security, and places a strong emphasis for any IOT use case customization, type of deployment, and third-party integrations.



## Key Platform Components – *Generic for any IOT use case, no changes required*

**CONNECTIVITY**

- Standard open protocols MQTT, COAP, WSS etc
- Encrypted channels to secure data
- Connect directly or via gateway
- Flexibility to extend communication channels

**DEVICE / IDENTITY MANAGEMENT**

- Manage devices and their credentials
- Company user management
- Arrange devices into groups, sites and company level
- Build custom device life cycle handlers

**DATA COLLECTION / MESSAGING STANDARDS**

- Collecting data at large scale with reliability
- Data processing pipe line configuration
- Structured and Un Structured data processing
- Network/Battery optimization

**DATA PROCESSING / ANALYTICS**

- All modern SQL/NOSQL data stores supported
- Transform schema less data into time series
- Custom automation rules based on events
- Business specific algorithms for data analytics

**OVER THE AIR UPDATES**

- Update devices with new features
- Current devices software tracking
- Software compatibility management
- Rollback upgrades

**CONFIGURATION / COMMAND ENGINE**

- Configuration and Commands schema based on device family
- Execute remotely
- On demand request status and configuration from device
- Synchronous and asynchronous communication
- Schedule based execution

## Customizable Components *Customizable development for specific business use case*

**VISUALIZATION (Web, Mobile, API)**

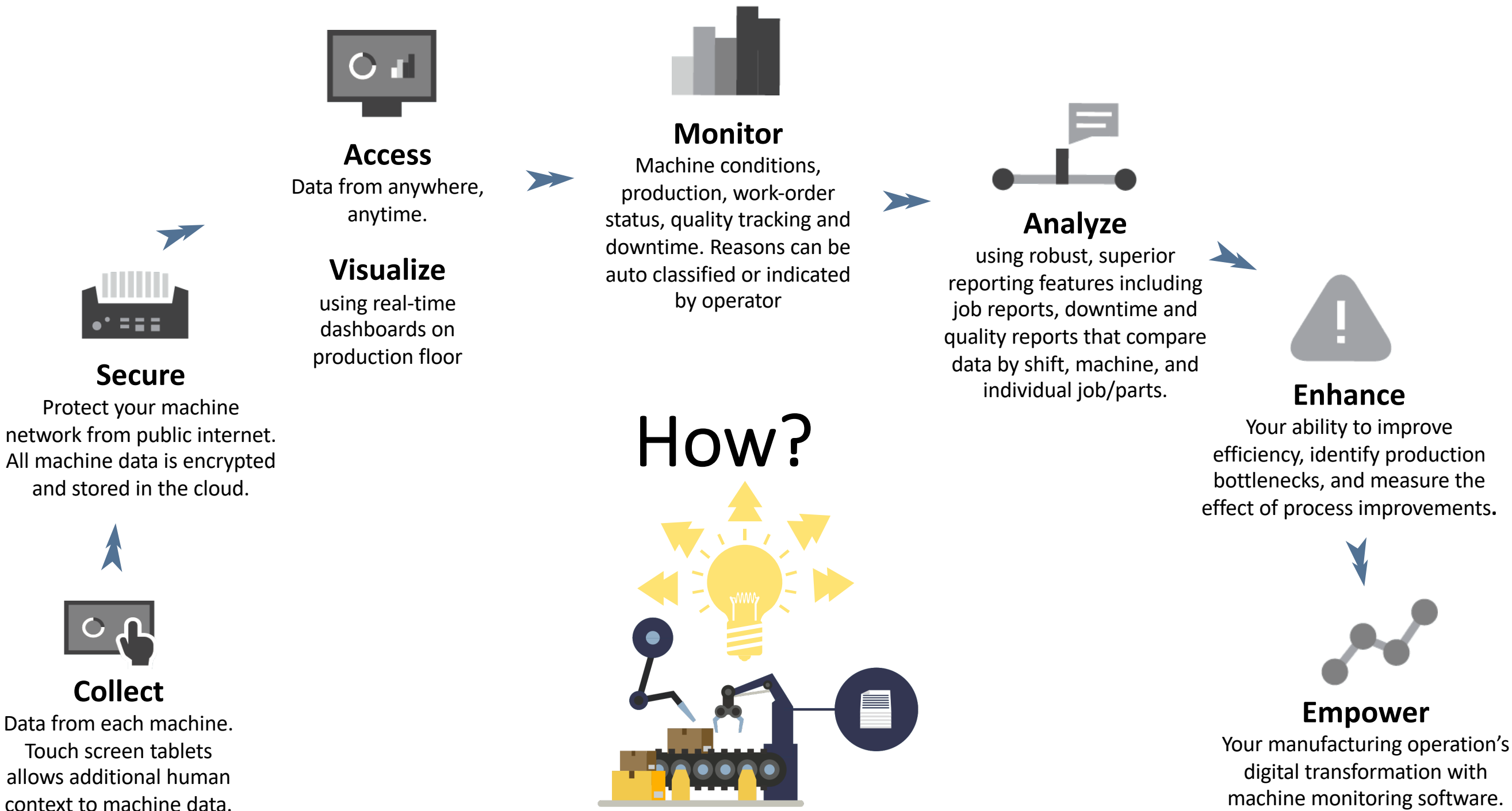
- Visualize data out of box
- Interactive user interfaces rapid development frameworks for web and mobile (Push notifications)
- Dashboards and Widgets
- Integrating with third party visualization tools and applications

**TEMPLATES (Configurations, Commands, Rules)**

- Device behavior parameters management using Templates
- Deliver configuration / commands to devices via data push or pull using templates
- Device and Business specific rule and notification templates
- Enqueue updates for offline devices

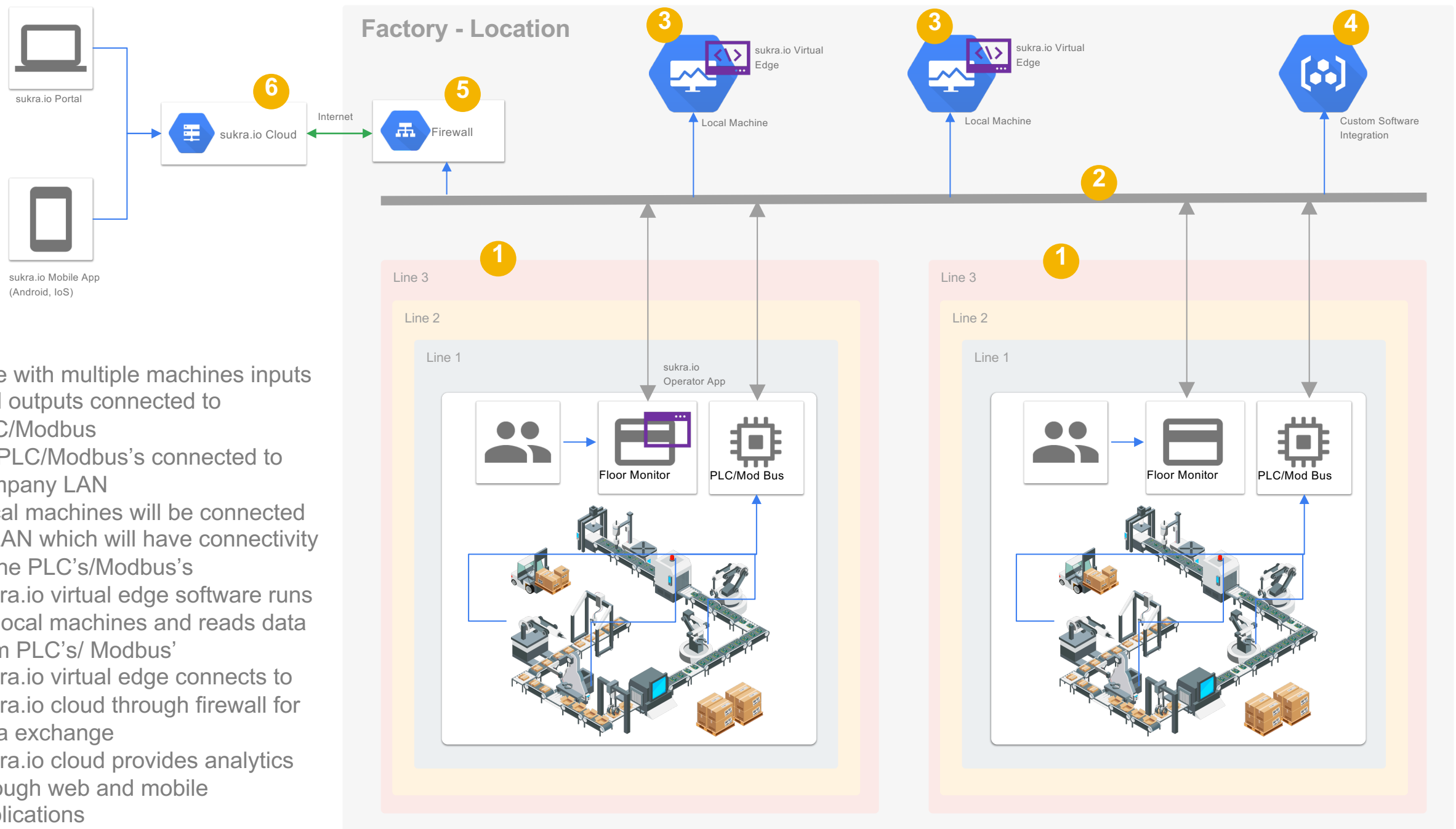
# How is this done?

Data is captured by sensors and integrated into an IOT edge device before AI and machine learning is applied.



# Solution Overview – Virtual Edge

Our Industrial IoT platform and Industry 4.0 Solutions increase productivity through real-time visibility, deep manufacturing analytics, and predictive notifications. Designed for manufacturers that use CNC machine tools, metal stamping, plastic injection molding, and other discrete equipment.



1. Line with multiple machines inputs and outputs connected to PLC/Modbus
2. All PLC/Modbus's connected to company LAN
3. Local machines will be connected in LAN which will have connectivity to the PLC's/Modbus's
4. sukra.io virtual edge software runs on local machines and reads data from PLC's/ Modbus'
5. sukra.io virtual edge connects to sukra.io cloud through firewall for data exchange
6. sukra.io cloud provides analytics through web and mobile applications

# Line Automation Overview

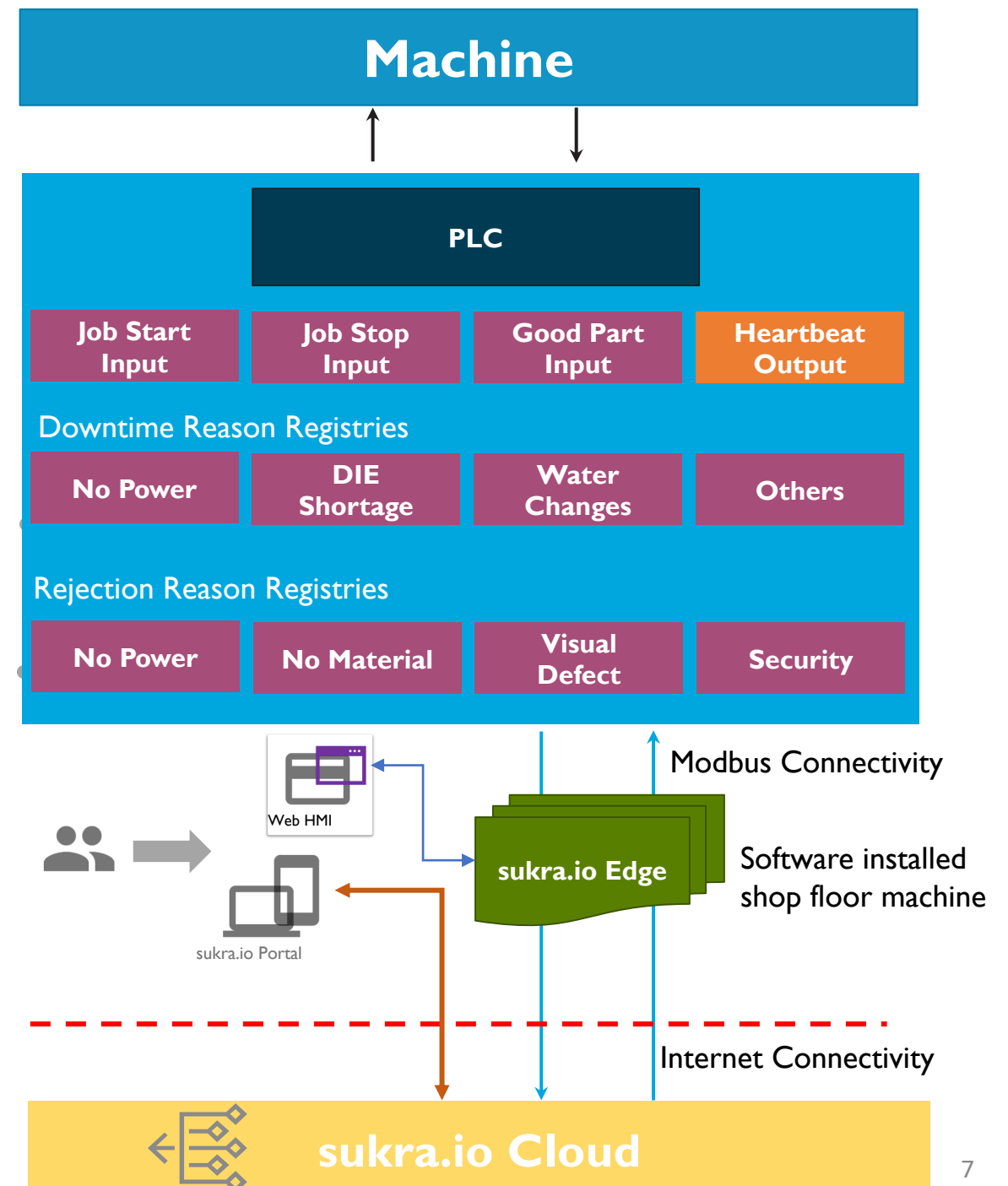
Our Industrial IoT platform and Industry 4.0 Solutions increase productivity through real-time visibility, deep manufacturing analytics, and predictive notifications. Designed for manufacturers that use CNC machine tools, metal stamping, plastic injection molding, and other discrete equipment.

Customer, Should make sure availability of the data in the PLC with the registries mentioned in the diagram. Data can be cumulative for each work order or changing for each part manufacturing.

Customer, should provide local machine in the LAN where PLC's and local machine can connect in same network for running sukra.io Edge software.

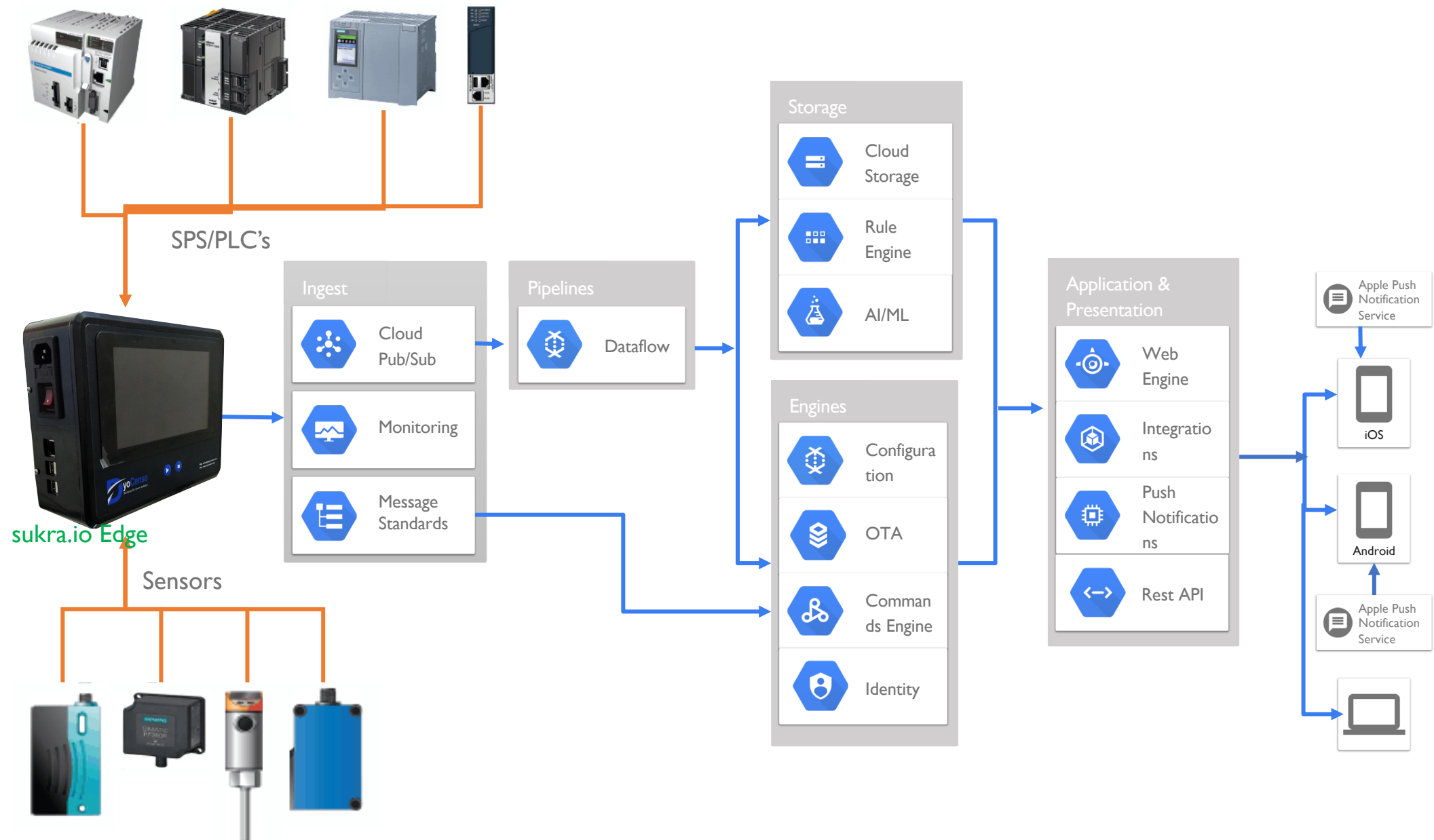
sukra.io, Installs virtual edge software on to the local machine. Virtual Edge software connects to the master PLC and reads the data from master PLC. Also provides web HMI for the operator view.

sukra.io, Provides cloud instance with web portal and mobile applications with different visualizations and reporting features.



# Technical Architecture




Our Industrial IoT platform and Industry 4.0 Solutions increase productivity through real-time visibility, deep manufacturing analytics, and predictive notifications. Designed for manufacturers that use CNC machine tools, metal stamping, plastic injection molding, and other discrete equipment.





# Edge Variants



	Sukra Edge V1	Sukra Edge V2	Sukra Virtual Edge
<b>Image</b>			
<b>Capabilities</b>	<p>Data Storage : Offline and Cloud                      Display : 7" touch enabled                      HMI : Touch enabled operator app                      Communication : WIFI/Ethernet                      Connectivity : IO/PLC/MOD Bus                      Cloud : Web Portal and Mobile App</p>	<p>Data Storage : Offline and Cloud                      Display : HDMI Port to connect with external display                      HMI : Operator app can be accessed from HDMI                      Communication : WIFI/Ethernet/GSM (2G)                      Connectivity : IO/PLC/MOD Bus/RS232/RS488                      Cloud : Web Portal and Mobile App</p>	<p>Hardware Requires : Minimum 4 GB RAM, 50 GB Hard disk, with internet and LAN connectivity                      HMI : Web based app can be browsed on local LAN connectivity                      Communication : Local LAN                      Connectivity : PLC/MOD Bus                      Cloud : Web Portal and Mobile App</p>
<b>Use Cases Supported</b>	OEE – Production Ready Machine Health - Possible to extend	OEE – Production Ready Machine Health - Possible to extend	OEE – Production Ready Machine Health - Possible to extend
<b>Supported Industries</b>	Discrete Manufacturing	Discrete Manufacturing	Discrete Manufacturing

# Solutions

Applications and Solutions in Manufacturing



**Machine Health**



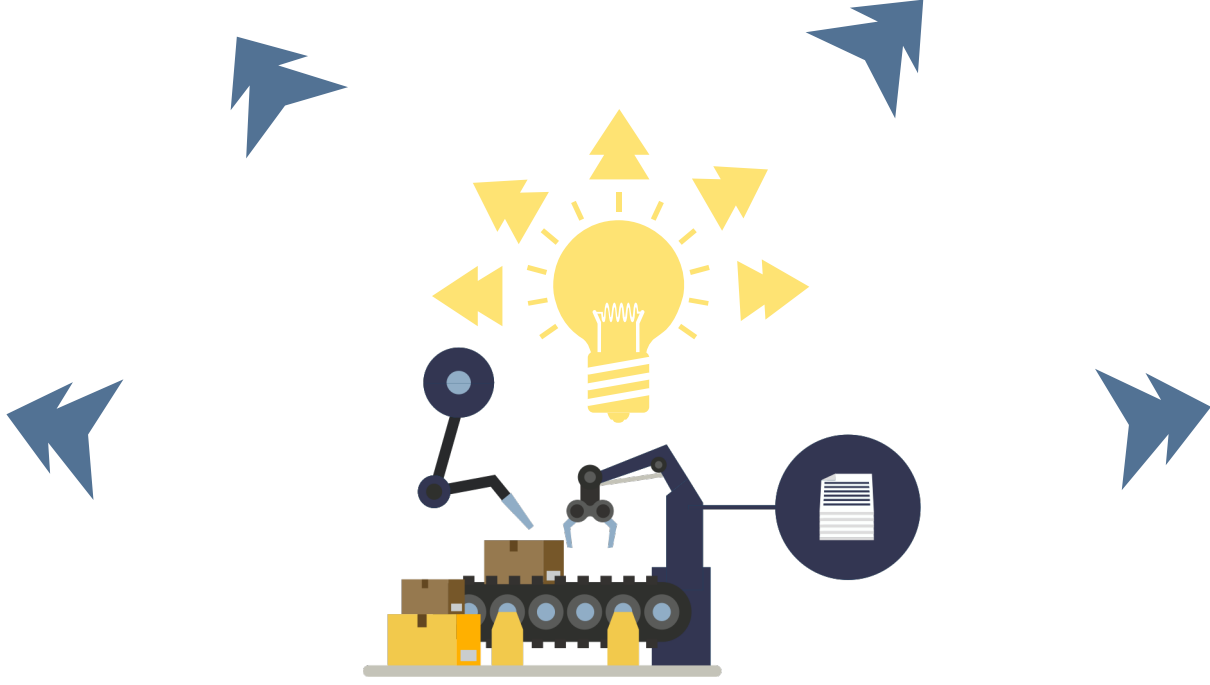
**Machine Monitoring**



**Production Monitoring**



**Asset Tracking**



## sukra.io – Smart Factory Machine Monitoring

sukra.io has simplified IoT for the shop floor. Our fully automated machine monitoring & OEE solution provides visualization of real-time manufacturing production status, instant notifications and historical analytics, enabling the factory workers to make faster, smarter and confident decisions based on real-time data.

### Drive Decisions based on Machine Data



#### Connect

Professionally installed IIoT Connectivity captures data from any modern or legacy machine with the help of edge device/hardware.



#### Analyze

Data analytics algorithms visualize, diagnose, and predict problems in real time based on collected data.



#### Take Action

Real-time visualizations and predictive notifications enable your team to take immediate corrective action.

### ROI

By bridging the communication gap between people, processes and machines, sukra.io is helping our customers make proactive, predictive business decisions that make a big impact **and drive manufacturing efficiency by more than 20% on average.**

### Empower Managers and Process Engineers



Track OEE and manufacturing efficiency



Identify production bottlenecks



Take action with real-time notifications



Measure process improvements



Enhance shop floor communication

### Benefits of our Solution



Improved Machine and Operator Efficiency



Reduced production waste for increased profits



Real-time machine data visibility



Predictive alerts and notifications



Automated data collection and analytics Custom reporting



Improved operator engagement and overall company communication



Provide confidence to the customers with live job tracking



Increased overall equipment efficiency

# sukra.io – Smart Factory Machine Health

sukra.io Machine Health is a predictive analytics application that allows maintenance teams to monitor and manage equipment health in real-time. Improve CNC Machine Tool health with real-time diagnostics, condition monitoring, alerts, and preventative and predictive maintenance.

## Drive Decisions based on Machine Data



### Connect

Professionally installed IIoT Connectivity captures data from any modern or legacy machine with the help of edge device/hardware.



### Prevent

Prevent unplanned down time and increase utilization



### Predict

Detect and diagnose asset performance issue to help prevent unplanned downtime and increase utilization

## ROI

sukra.io Machine Health continuously monitors equipment health in real-time to detect problems before causing downtime with patent-pending AI technology. Notify machine operators to change a tool before it breaks. Notify your maintenance manager when an anomaly is detected that could lead to a breakdown. **This ability can prevent thousands of dollars of equipment replacement costs and days of downtime.**

6/11/20

## Empower Production Managers and Executives



Manage your machine assets and view real-time equipment status and conditions



Diagnose problems with deep alarm analytics and AI-driven predictive notifications



Manage preventative maintenance tasks based on usage or machine conditions



Track utilization of equipment over time to understand current and potential capacity



Predict equipment failures and prescribe solutions to prevent costly downtimes

## Benefits of our Solution



Gain insights into asset and maintenance model through visibility of issues



Improve equipment uptime and service productivity



Understand equipment utilization rates and overall install base health



Capture and scale technical service expertise of workforce

# sukra.io – Welding Machine Monitoring

sukra.io has simplified IoT for the Welding Machines. Our fully automated machine monitoring solution provides visualization of real-time machine status, utilization, energy consumption, instant notifications and historical analytics, enabling the workers to make faster, smarter and confident decisions based on real-time data.

## Drive Decisions based on Machine Data



### Connect

Professionally installed IIoT Connectivity captures data from any modern or legacy machine with the help of edge device/hardware.



### Analyze

Data analytics algorithms will measure machine efficiency, utilization, energy consumption in real time based on collected data.



### Take Action

Real-time visualizations and predictive notifications enable your team to take immediate corrective action.

## Where can you deploy Welding Machine Monitoring?

- ✓ Automobile Industry
- ✓ Construction Industry
- ✓ Shipbuilding
- ✓ Metal bridgebuilding
- ✓ Manufacturing Industry

## Empower Operators and Supervisors



Track Machine Efficiency, Utilization, Energy Consumption



Identify production bottlenecks



Take action with real-time notifications



Measure Operator and Machine Efficiencies



Enhance communication between operators, supervisors and Service Providers

## Benefits of our Solution



Improved Machine and Operator efficiency



Reduced welding cost for increased profits



Real-time machine data visibility



Real-time alerts and notifications



Automated data collection and analytics Custom reporting



Improved operator engagement and overall company communication



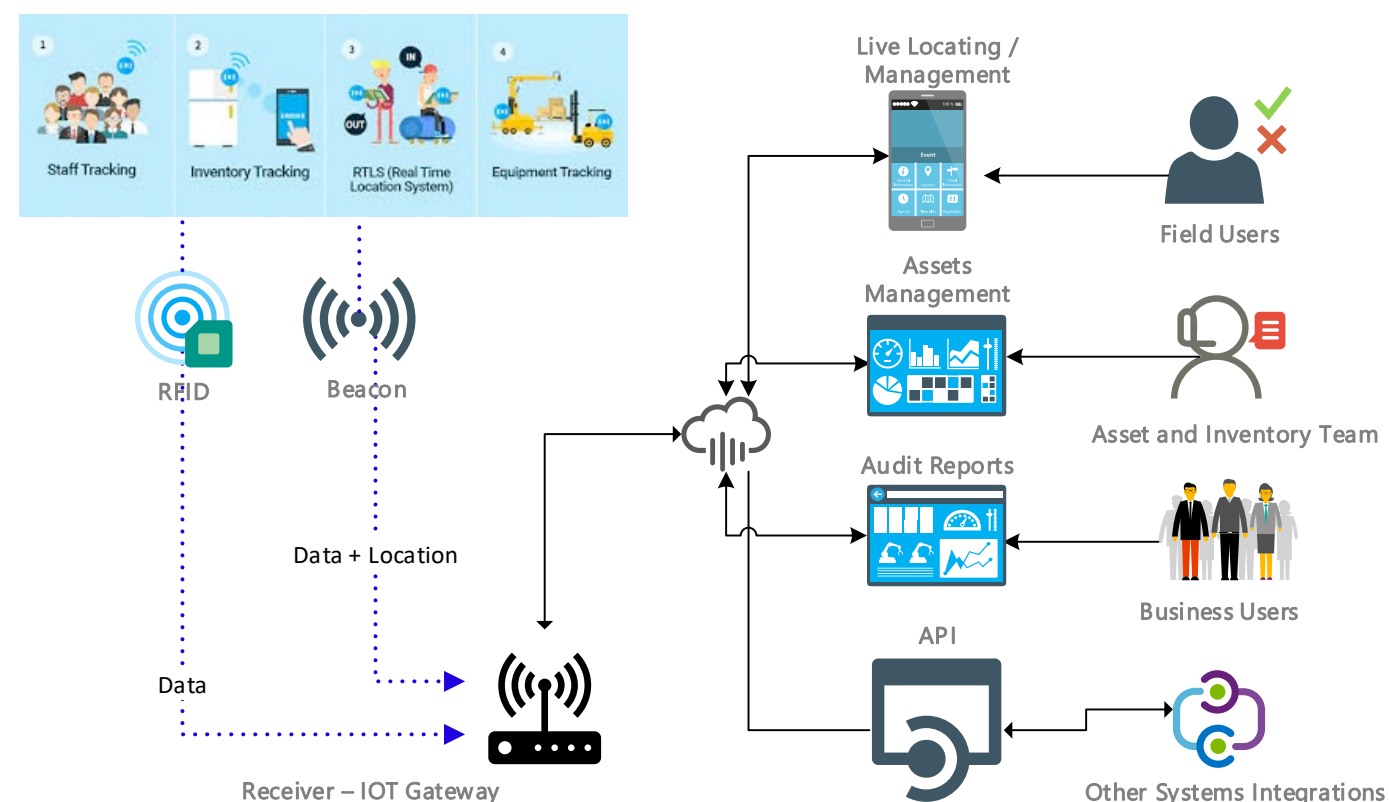
Provide confidence to the customers with live jobs tracking



Increased overall equipment efficiency

New technologies like Asset Management and Tracking Intelligence involve state-of-the-art technologies that aid in smarter decision-making at all business levels while reshaping infrastructure strategies ensuring protection and safety for a variety of company assets with IOT asset tracking system. Asset management solutions from sukra.io will allow you to get real-time visibility of the locations of your mobile and fixed business assets. The instant notifications inform you when assets arrive at delivery destinations, or monitor valuable machinery to ensure your equipment stays on site with real time IOT asset monitoring.

## System Overview



## Features

- ✓ Add/update/delete/import/export assets and mapping them to the tracking device (RFID/Beacons)
- ✓ Customizable fields, categories, tagging assets for easy search
- ✓ Mapping assets to specific zones and tracking events based on the threshold configuration
- ✓ Quick search, live tracking and data aggregations
- ✓ Different level of reports with export functionalities
- ✓ Easy cloud or on-prem deployment
- ✓ Extract real-time information to make smarter business decisions.
- ✓ Replace inventory at the right time to maximize profitability.
- ✓ Locate and identify any lost or stolen items for better theft prevention and recovery.
- ✓ Monitor event alerts and take immediate action to reduce negative impact.
- ✓ Offer new services to customers such as proactively replenishing parts or supplies

## Benefits of our Solution

- ✓ 100% inventory accuracy
- ✓ 30% reduction in loss of valuable and returnable assets
- ✓ 20% saving in labor to increase efficiency
- ✓ Increase in inventory utilization and reduction in misuse
- ✓ Reduction in time locating and stock cycle counts
- ✓ Compliance through automated audits

## Where can you deploy Asset Tracking Solution?

- ✓ Hospital : Key and/or critical assets including machineries, equipments, ambulances, patients, instruments, and more
- ✓ Shipping and Logistics : Shipping, containers, and goods
- ✓ Industrial Automation : Water meters, offshore drills, and oil & gas tanks
- ✓ Industrial Assets : Trailers, generators, construction equipment, cars, fleets of trucks, and service vehicles
- ✓ Consumer Products : In-transit pharmaceuticals and electronics

# Contact us



## India

L-165, Sri Gayatri Complex,  
2nd Floor, 6th Sector, HSR Layout  
Bangalore – 560 102  
+91-90085-01919

Ganeasha Subramanian

+91-83106-25634

[ganeasha@katprotech.com](mailto:ganeasha@katprotech.com)

## United States

150 E Bloomingdale Ave, Ste 188  
Brandon FL 33511

Kothand Rajangam

+1 813 502 3846

[kothand@katprotech.com](mailto:kothand@katprotech.com)