SMART FEEDBACK

Insights-as-a-Service

SaaS Platform for Real Time Management and Data Analytics
Of Streaming or Discrete Data From IOT or Digital Applications

gaia™

Gaia: Digitalizing and Optimizing Operations for Smart Sites

SmartFeedback™

Monitor

Assets

People

Process

Experience

Supply Chain

Provide

Insights as a Service

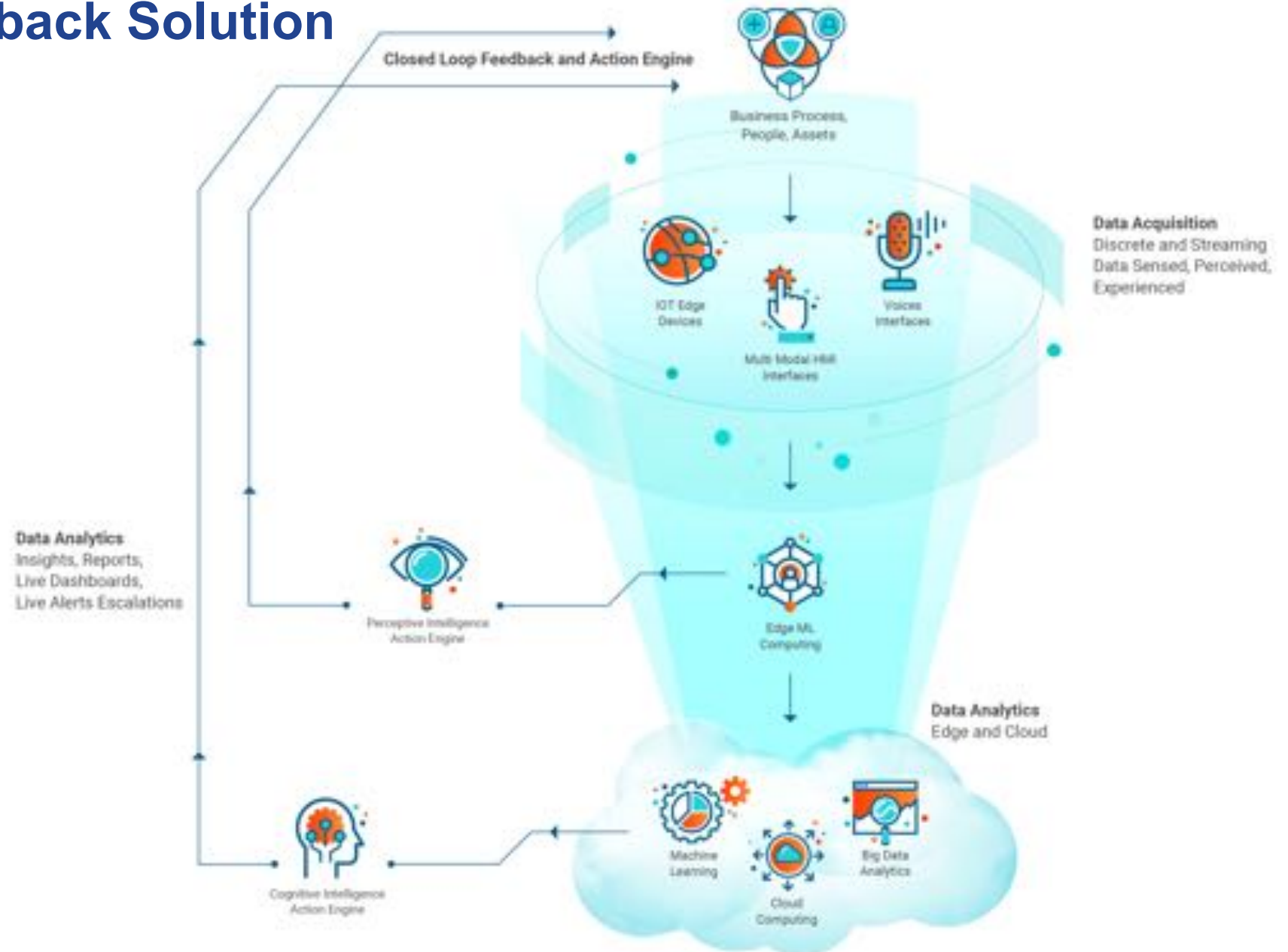Closed Loop Feedback

Action Response Engine

Digital Process Automation
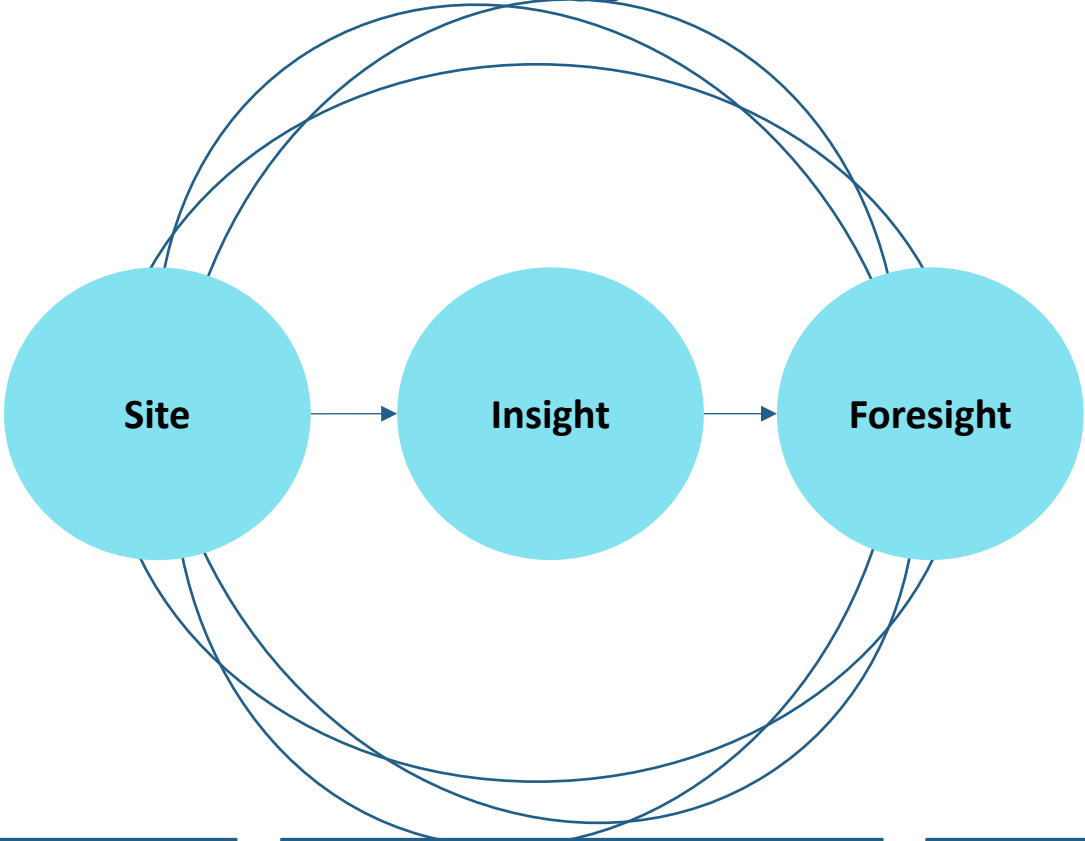
Impact

Business Performance . Operations Efficiency . Revenue

Assurance . Customer Satisfaction . Service Level

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Gaia Smart Feedback Solution

Closed Loop Feedback and Action Engine

Business Process, People, Assets

IOT Edge Devices

Multi Modal HMI Interfaces

Voices Interfaces

Data Acquisition
Discrete and Streaming Data Sensed, Perceived, Experienced

Data Analytics
Insights, Reports, Live Dashboards, Live Alerts Escalations

Perceptive Intelligence Action Engine

Edge ML Computing

Data Analytics
Edge and Cloud

Machine Learning

Big Data Analytics

Cognitive Intelligence Action Engine

Cloud Computing

Gaia Smart Feedback - Technology Overview

```
Site  →  Insight  →  Foresight
```

Data Acquisition

- **Collection:** Ingest data from IOT devices or digital channels
- **Attribution:** Multi-parameter data source attribution
- **Fusion:** Add custom secondary data, on custom request

Data Insights

- **Analytics:** Real Time, Time Series, Comparative Analytics
- **Visualization:** GIS, Drill Down, Multi Parameter Charts
- **Action Engine:** Custom Rules Engine, Auto Alerts, Multi Tier

Data Foresight

- **Integration:** API Based, Link to Client ERP or CRM Systems
- **Enhanced Analytics:** custom AI/ML algorithms for prediction
- **Custom Cognitive Automation:** Custom Modules on request

Intelligent Edge - Smart Feedback Hardware Platform Features

**Real Time
Data Acquisition**
Event Based & Streaming Data
Low Power Consumption Options

**Multi Sensor
Device**
Configuration on Air

**Connectivity
Options**
GSM/ BLE/ Wi Fi
Multi Network Capability

**Customizable
Firmware**
Firmware Upgrade on Air
On Device Security

**Backup Local
Storage**
Intelligent Data
Configurable Transmission

**Edge
Analytics**
Edge Machine Learning
Edge Decision Making

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Intelligent Cloud - Smart Feedback Software Platform Features

**Device
Management**
Configuration & Rules
Groups Management

**Stream
Analytics**
Real Time Cloud SaaS
Visually Rich Intelligence

**Real Time
Dashboards**
Historical & Comparative
& GIS Reports

**Alerts &
Notifications**
Custom Rules Driven
SMS / Email/ Alarm

**Custom
Relevant KPIs**
Business Visibility
Process Automation Layers

**API
Integrations**
End to End Approach
Multi Tenanted System

Insights as a Service – Data Acquisition from Multiple Sources

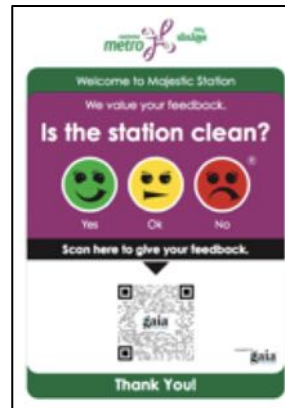**Customer Intelligence . Site Intelligence**

Insight . Notify . Predict

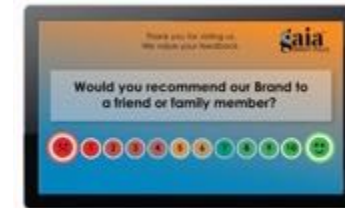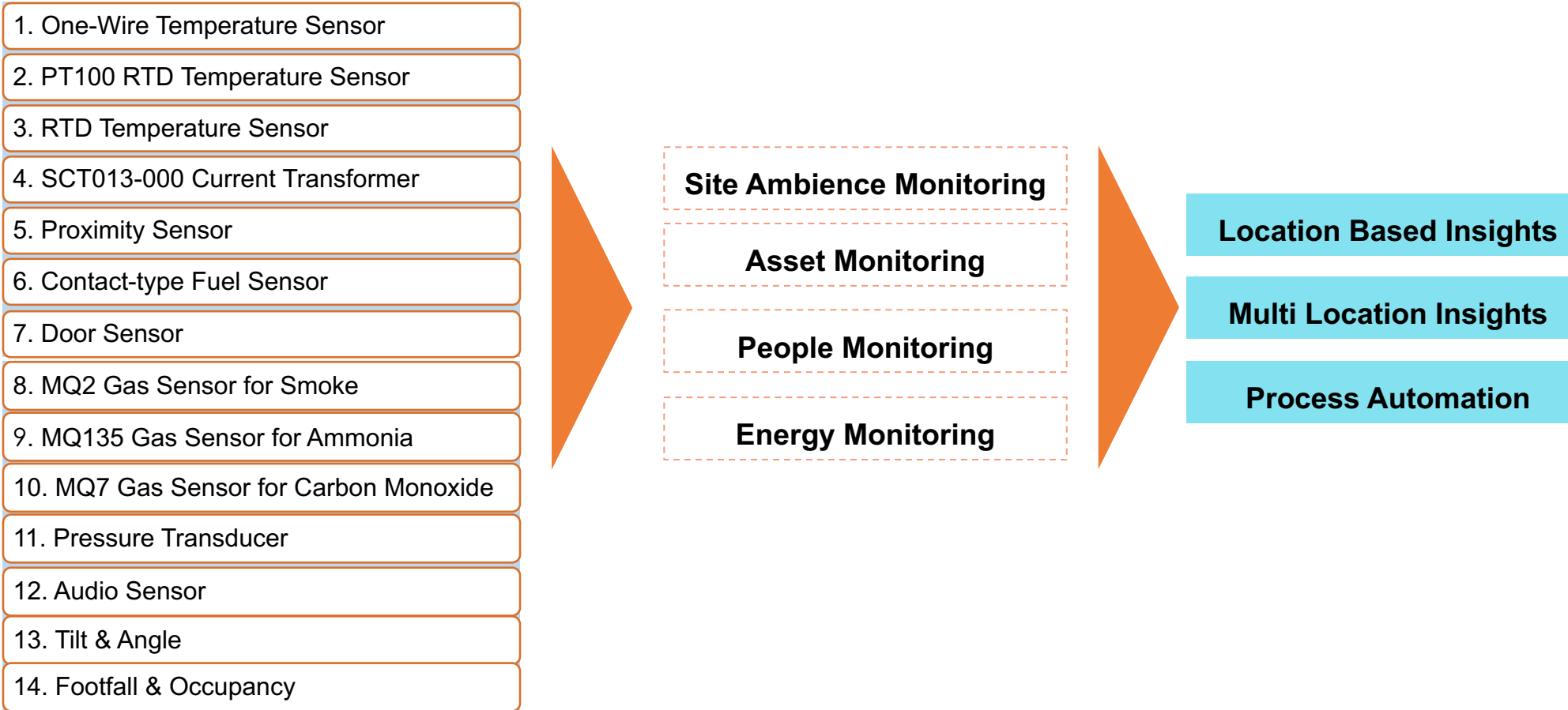| SENSE	CLICK	SCAN	TAP	BEAM	VOICE

Multiple Sensors Integrated

Speak your feedback

Streaming Data

Discrete Event Based Data

Pre-Integrated Sensors for Data Acquisition

1. One-Wire Temperature Sensor
2. PT100 RTD Temperature Sensor
3. RTD Temperature Sensor
4. SCT013-000 Current Transformer
5. Proximity Sensor
6. Contact-type Fuel Sensor
7. Door Sensor
8. MQ2 Gas Sensor for Smoke
9. MQ135 Gas Sensor for Ammonia
10. MQ7 Gas Sensor for Carbon Monoxide
11. Pressure Transducer
12. Audio Sensor
13. Tilt & Angle
14. Footfall & Occupancy

Site Ambience Monitoring

Asset Monitoring

People Monitoring

Energy Monitoring

Location Based Insights

Multi Location Insights

Process Automation

SaaS Platform – Tech Architecture

Input Data Formats:
JSON

Input Data Protocols:
MQTT, HTTP, HTTPS

Gaia & 3rd Party Data Sources

Advanced Data Analytics
- Stream Analytics
- Batch Analytics
- AI/ML
- Cloud Computing

Secure Service Brokers

Data & Meta Data
- Processing
- Storage

Advanced Data Analytics
- Security
- Identity & Access
- Asset Info
- Policies, Metadata

Customizable Business Logic & Rules

Service Orchestration

APIs, Libraries, SDK

Business Portal

Rapid Data Visualization

Custom BI & Reports On Request

3rd Party Systems

IT & Business Systems

Output Data Formats:
Tabular, Analytics

Output Data Downloads:
XLS, PDF

Azure IOT Edge . Azure IOT Central . Azure IOT Solution Accelerators . IOT Hub . Event Hub . Time Series Insights . Cognitive AI/ML Libraries . Blockchain Libraries . Modern Data Warehouse . Big Data Analytics

Gaia Smart Feedback – Software Platform Layers

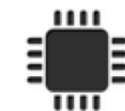| Layer	Description	Type
Data Visualization Layer	GIS visualization and intuitive drill down reports to showcase status, progress, trends, and alerts	Use Case Specific
Action Engine Layer	Rules Engine; Create alerts & escalations, and allow rules-driven communication via SMS & email; rules customizable by client	Common
Data Analytics Layer	Collate, transform, and analyze data to derive real time insights on KPIs, historical patterns	Use Case Specific
Data Management Layer	Manage structured and unstructured data with correct attribution across channels, devices, networks	Common
Data Collection Layer	Collect data from multiple channels. IOT channels (sensors, beacons). Sensors (13 types). Digital channels (digital data).	Use Case Specific
Device Management Layer	Manage multiple devices & sensors to bring data into cloud without loss, latency, lag, or errors	Common
Network Management Layer	Manage multiple gateways to bring data in from multiple locations into single cloud platform; send instructions back	Common
Communication Management Layer	Manage multiple communication modes to bring data into single loud platform (GSM, Wi Fi, LoRa, BLE)	Common

Security & Fraud Analytics

Multi-Layer Software

Modular ICT Architecture

Scalable

Extensible

Robust & tested (in Gen 4)

SaaS Model

Streaming & Time-bound data

Ready for specific use cases:

Feedback, Temp, Power, Water

Software Tools: Java, Spring, Hybernate, Angular JS, Python, Shell Script, C, C++

Building Tools: Eclipse (Mars & Neon), Git Lab for Version Control, JenKins for deployment, Bower, Node IS, Gulp, Maven, IOT Hub, Event Hub

Databases: MySQL, MongoDB, Kafka Apache

Libraries: Panda, Numpy, Scikit Learn, TensorFlow, ARM Cortex M3 & M4 Series & DSP Libraries

Certifications: CE, ISO 9001:2015

Globally Recognized: Accelerator Support & Awards

Microsoft

2018 Cohort of the Global Microsoft Scale Up Program

2018 Microsoft Research Winner for Machine Learning on Edge Devices

LONDON & PARTNERS

IE20

INDIA EMERGING TWENTY

2018 Cohort of the Mayor of London Business Program

ST

First Indian Company in Innovation Lab

ARM

Embedded Partner

QUALCOMM®

Qualcomm Design in India Challenge Grant for Voice IOT on Edge

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Smart Feedback Customer Traction

120 Cities

32 Airports   **200+ Trains**

Retail Stores   **Hospitals**   **Buildings**   **Warehouses**   **Exhibitions**

Thank You

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