

Smart Connected Worker



Harness the power of our IoT expertise to make your work place more efficient, transparent, safe and productive with customized connected worker solution to gain real-time insights into worker location and safety.

- Know About Us
- Our Expertise
- Key Challenges
- Our Solution Offering
- End-to-End System Architecture
- Individual Block Details



Building a complete IoT solution can be a challenging task, as it requires technical expertise, a lot of time, resources and capital. On the other side, a ready-made IoT platform simplifies the development and deployment of IoT applications, as it connects devices and sensors easily, delivering more values in terms of cost and time optimization.

We are leading custom IoT solution provider in APAC [Asia-Pacific] region. Our full-fledged hIoTTron cloud Platform as a Service (PaaS) enables us to provide cost-effective solutions to our customers in shortest period of time with 100% satisfaction because this is what that matter to us.

Our highly passionate in-house development team works on all major vertical of IoT technology. We are expert in such as custom PCB design/hardware development, embedded software development, device- cloud/network integration, communication/web protocols & IT experts, front- end/mobile app or Web-App development & big-data analytics.

With design thinking approach we provide uniquely designed custom solution that improve processes, differentiate products and services.

We are global in nature since our inception in 2013, we have served our customers in 8 different IoT business verticals and delivered almost 9700 connected devices and we feel proud in stating that 84% devices are live on our hIoTTron IoT platform in 26 various cities across 4 countries.

What differentiate us from others



Faster time to market

Our easy-to-use hIoTTron cloud platform helps you to build solution easily and quickly as it involves neither manual coding from the scratch nor connecting disparate frameworks and technologies.



Design thinking approach

We listen to our customer, understand their pain point and actual requirements. We follow all 5 steps like , empathy, define, ideate, prototype and test before delivering the right solution.



One Stop Solution

We cater multiple IoT capabilities right from easy configuration and cross-device communication to real-time device monitoring and multi-layer security.



- ❖ **Connectivity:** Wi-Fi, Zig-Bee (Star/Mesh), Z-wave, Sub-1, Bluetooth, BLE4.0, LoRa, IR, NFC, RFID etc.
- ❖ **Semiconductor:** Freescale, Marvell, Atmel, TI, Microchip & Many more.
- ❖ **Communication Channel:** Wi-Fi, Ethernet, GSM/GPRS, GNSS, LTE.
- ❖ **Cloud Platforms:** AWS, IBM Blue-mix Watson, xively, Thing-Worx, hIoTTron & Private.
- ❖ **Communication & Queuing Protocols:** MQTT, REST, Web-sockets, COAP, XMPP, AMQP.
- ❖ **Databases:** Cassandra, MongoDB, Raven DB, MySQL, Oracle, MS-SQL.
- ❖ **Mobile:** Android, iOS, Windows.
- ❖ **Standards:** OPENIoT, HomeKit, Thread, Nest, Alljoyn, Brillo & Weave.



Workforce is being most valuable assets for any industry and Industrial workers are at increased risk for accidents, exposure to environmental hazards, security threats, and health emergencies.



To Track workforce



To Ensuring worker safety



To improving data accuracy



Unexpected accidents in the field



To improve worker performance



To enhance employee experience



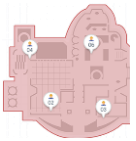
To reduce the risk of errors



To create visibility in the process work status



The Connected Worker solution leverages mobile, sensor, asset tracking and analytics to more effectively execute the work activities of an industrial or worker. Monitoring real-time insight will help to reduce non-productive work, create a safe work environment and improve efficiencies—ultimately saving money.



Virtual Fencing

With help of RFID tags we can track workers' location and get real-time triggers if a worker crosses the restricted area or any his work location. Customizable as per rules and conditional requirement. We can assign dedicated work area and create rules for set of employees. We can get alert and for the same.



Examine environment factors

With the help of environmental sensors such as gas leak detectors, air pollution, smoke etc. supervisor as well as anyone having hierarchical access to system can monitor the noise level, presence of radiation, toxic gas level, and the temperature of a specific location and also receive alerts if the level of any of these entities crosses its threshold limit with our environmental sensors.



Compliance Friendly

Collects and stores data at your local center as well as on centralized system for compliance checks in order to prevent hazardous conditions. The data collected can prove to be handy during audits.



Prescriptive Analytics

We can analyze multiple things from the data gathered by multiple sensors which is installed at work location. We can monitor environmental conditions, pattern of employee allocation to specific task or work location. Also with help of virtual fencing we can analyze employees having tendencies to enter the restricted areas.



Improved Worker Safety

With the help of environmental sensors managers can generate and analyze reports of the current work environment. They can also get alerts in case of critical environment conditions. As workforce is the biggest asset of any industrial work.



Workforce Planning and Optimization

With the help of data generated from sensors we can analyze the patterns of employee attendance and link it to HR system that will allow us to improve workforce wellness and to keep track of workforce productivity.

end-to-end System Architecture

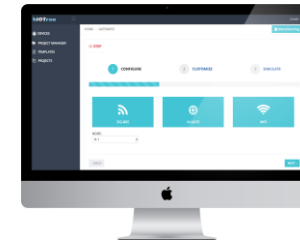
LC – Location, Locations will have sensors like environmental etc. will communicate (Wired) to Hi-Nodes of that location.

W – Worker having RFID tag, will communicate to Hi-Nodes.

Blue Lines – RFIDs communication with Hi-Nodes → Green Lines – Hi-Nodes communication with Hi Gate.



Block B - Hi-Gate
– Central Gateway with Zig-Bee and Wi-Fi/Cellular (2G,3G or 4G) Communication



Block C - hiOTron's Platform as Service (PaaS) – Rules integrations



Users

Block D - User Dashboard and Mobile Application



We can maintain localized database apart from centralized one which will be periodically in sync with centralized database

Block A-Actual work area having multiple service area with multiple sensors. Environmental sensors or workforce inside will communicate with Hi-Node which will be connected with Hi-Gate.



With reference to image above, you will get step by step details of each and every block from A to D which will be required & used for Connected Worker Solution.

- A. Data Acquisition & RFID unit (Hi-Node)** – Workers detail & environmental data collection such as noise level, presence of radiation, toxic gas level, and the temperature of a specific location, will be done using RFID receiver & industry standard sensors having output in 4-20MA range and sent to the Hi-Gate using Zig-Bee or other low power wireless communication protocol to ensure the longer battery life.
- B. Hi-Gate (An Enterprise IoT Gateway)-** Hi-Gate is fully tested enterprise IoT gateway which doesn't only translates the protocol [RF/non-RF –to–REST/MQTT] but An ARM® Cortex® -M4 Core based TI MOD-CC3200 at its heart, it also provides better computational power to run advance algorithms & communications due to availability of multiple on board Inbound & Outbound Connectivity protocols such as Inbound Connectivity Protocols: Zig-Bee, BLE 4.0, SUB-1* & Outbound Connectivity Protocols: (Wi-Fi) 802.11 B/G/N Radio, GSM/GPRS (2G) [Provision available for 3G & 4G modules].

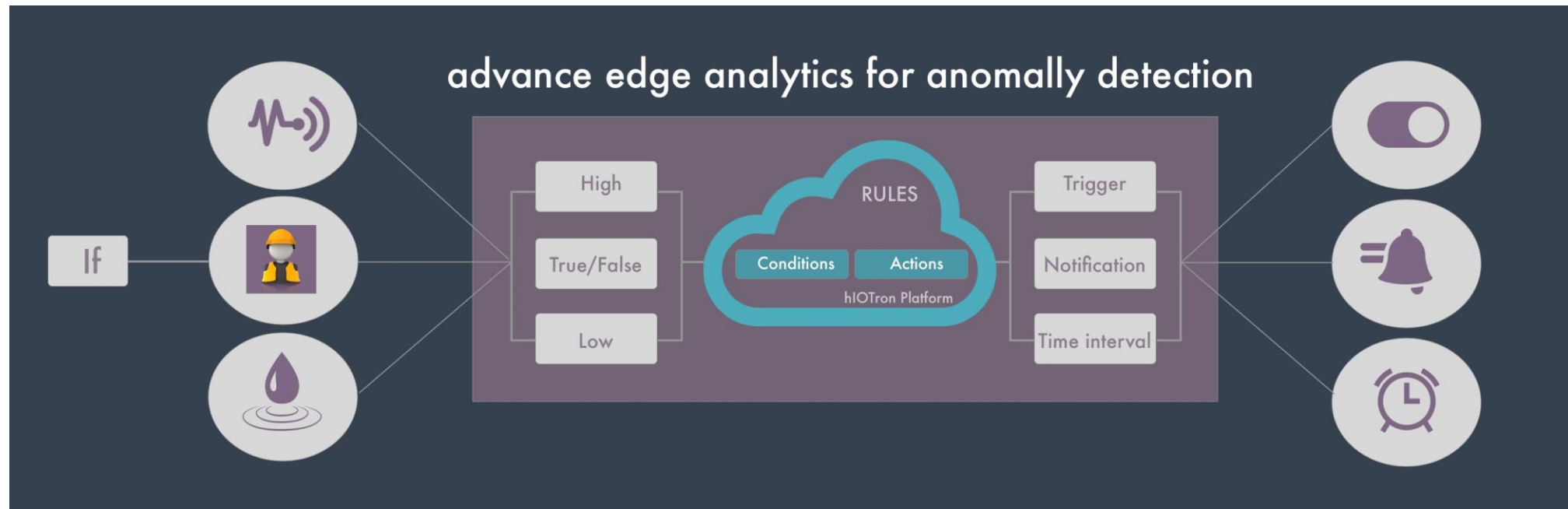
Hi-Gate Key Features

- Easy Configuration through UI-based Platform.
- Support Up-to 25 Hi-Nodes.
- fully encrypted with SSL/TLS based certificates to connect to cloud.
- Supports FOTA (Firmware Over the Air) for emergency update.
- Auto Re-connect for Wi-Fi & Cellular network (Both).
- Best for Any Industry standard sensors (4/20MA) & Actuators.

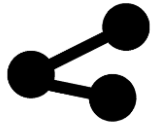


C&D.

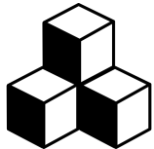
IoT Platform – This is the crux of the entire connected worker solution where actual logics or rules will be given such as if any worker crosses the restricted area or any his work location then supervisor should get alert in the form notifications such email, SMS, push notifications and also alerts for environmental parameters, workers health or man down alerts etc.



Not only this, hiOTron IoT platform also takes care of major enterprise IoT cloud features & requirements for smooth connected worker operation such as



Device Connectivity – It takes care of seam-less connectivity of RFID tags with Hi-Nodes & Hi-Nodes with Hi-Gates.



Device Management – Manage hardware devices securely with authentication & authorization process.



Data Storage – It stores device & user data for predictive models.

Dashboard & Mobile application enablement – Data visualization through dashboard & mobile application.



Data Analytics – Use advance analytical models to visualize sensors data & give worker performance reports in the form of intuitive graphs & charts with advance options for filters.



Click [here](#) to Request for a Demo

