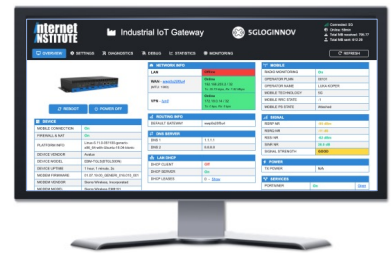# rMON

5G IoT SYSTEM

5G   **INDUSTRIAL IoT**   **CRITICAL INFRASTRUCTURES**   **INDUSTRY 4.0**

AT A GLANCE

- Automate Industrial IoT systems
- Customisable sensor setups
- Ruggedized design for industrial and outdoor environment
- Modular IoT gateway capabilities (3G, 4G, 5G, Ethernet)
- Flexible data collection support (My/MS SQL and time series DB)
- High-availability based on distributed measurement output streaming
- Centralised cloud-based management with GIS support
- OTA (Over-the-Air) control of IoT gateways and sensor deployments
- Real-time analytics & KPI visualisations with system notifications and alerting
- AI/ML capabilities for automated anomaly & outliers detection

USE CASES

- Environmental sensing
- Remote object and persons detection
- Video surveillance of critical infrastructures
- Real-time monitoring of infrastructure assets

SYSTEM COMPONENTS

- rMON Manager – Centralized cloud-based device management
- rMON Collector – Multiple sensor measurements' collectors deployed on premises or in the cloud
- rMON IoT Gateway – Autonomous and distributed Industrial IoT Gateways with sensor agents
- rMON Reporter – Cloud based Real-time monitoring dashboard

DEVICES

- Mobile M2M: iBASE*, BeagleBone**
- Fixed M2M: iBASE*

ENVIRONMENT

- Industrial –40ºC to +60ºC *
- Outdoor IP67+ **

MANAGEMENT

- All devices managed through cloud-based management (rMON Manager)
- Multiple user profiles available
- GIS based gateway status monitoring

MEASUREMENT AND KPI

- Multiple KPI collectors (rMON Collector) on premises or in the cloud
- Multiple enterprise and data streaming DB outputs: My/MS-SQL, influxDB, Elastic, Kafka, Prometheus

ANALYTICS

- Real-time analytics and KPI visualisations
- Flexible cloud-based analytics options
- Alerting and notifications
- Anomaly & outliers detection and predictions

PROTOCOLS

- TCP/IP (IPv4 and IPv6)
- HTTP/HTTPS
- Serial data RS-232

MEASUREMENT DATA ENRICHMENT

- External GIS and context data enrichment

OVER-THE-AIR (OTA) UPDATES

- "Live" system upgrades
- Autonomous IoT gateway operation with zero data loss

LOCATION SERVICES

- External industrial GNSS USB module

TECHNOLOGIES

- Mobile: GPRS, EDGE, WCDMA, HSPA+, LTE, LTE-A, LTE-A Pro, 5G NSA and SA (Cat3 to Cat21)
- Fixed: FE and GE

SUPPORTED BANDS

- 5G NSA/SA: n1, n2, n3, n5, n7, n8, n12, n20, n25, n28, n38, n40, n41, n48, n66, n71, n77, n78, n79
- LTE/4G: B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B18, B19, B20, B21, B25, B26, B28, B29, B30, B32, B34, B38, B39, B40, B41, B42, B43, B46, B48, B66, B71

SENSORS

- Ultrasonic sensors water/liquid
- Industrial cameras
- Temperature

PLUG AND MEASURE

- Easy to deploy with zero touch provisioning