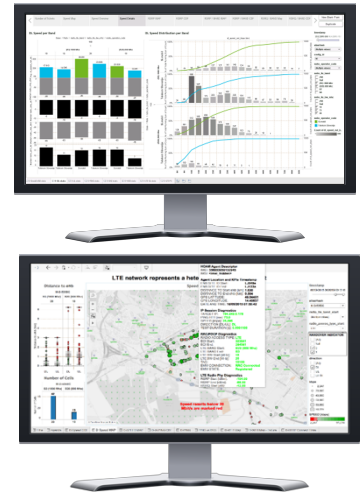# rMON
Remote Environment Monitoring

Automation of remote IoT-based measurements for industrial and outdoor environments

AT A GLANCE

- Automated measurements of distributed IoT-based systems
- Customisable sensor setups
- Ruggedized design for industrial and outdoor environment
- Modular IoT gateway capabilities (WiFi, 2G, 3G, 4G, 5G, NB-IoT, Ethernet)
- Autonomous gateway and system operation with zero data loss
- 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 and KPI visualisations with system notifications and alerting

SYSTEM COMPONENTS

rMON Manage – Centralized cloud-based device management

rMON Collector – Multiple sensor measurements' collectors deployed on premises or in the cloud

rMON IoT Gateway – Autonomous and distributed IoT Gateways with sensor agents

rMON Reporter – Cloud based Real-time monitoring dashboard

USE CASES

- Water level monitoring of natural and artificial water bodies
- Level measurements of liquids
- Remote object and persons detection

rMON
Remote Monitoring

DEVICES
- Mobile M2M: Advantech ARK*, BeagleBone**
- Fixed M2M: Advantech ARK*

ENVIRONMENT
- Industrial – 40º to 85º *
- Outdoor IP67+ **

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

MEASURMENT RESULTS
- 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

MEASUREMENT DATA ENRICHMENT
External GIS and context data enrichment

TECHNOLOGIES
- Mobile: GPRS, EDGE, WCDMA, HSPA+, LTE, LTE-A and LTE-A Pro (Cat3 to Cat12)
- Fixed: FE and GE

OVER-THE-AIR (OTA) UPDATES
- "Live" system upgrades
- Autonomous IoT gateway operation with zero data loss

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

SENSORS
- Ultrasonic sensors water/liquid
- Industrial cameras
- Temperature

POSITIONING
- External industrial GNSS USB module

PLUG AND MEASURE
- Easy to deploy with zero touch provisioning