



IoT Applications

- Smart energy
- Smart manufacturing
- Smart cities
- Smart logistics
- Smart environment
- Energy optimization
- Energy trading
- OEE & TEEP monitoring
- Digital twin
- Condition based maintenance
- Performance based services
- Predictive maintenance
- Preventive maintenance
- Digital services
- SCM optimization
- Leakage detection
- Flood monitoring & control
- Smart buildings
- Employee safety
- Security monitoring
- and many more

IoT-TICKET IoT Office Suite (Application Building Studio)

IoT Applications

IoT-TICKET IoT Office Suite

IoT-TICKET Enterprise Manager

IoT-TICKET Connectivity

Sensors & Actuators

IoT-TICKET Reports

Report design

- Web browser based
- Report viewer
- Data Tag Browser
- Report editor
- Mobile report viewer
- Drag & Drop Data Tagging
- Dynamic page content
- Component templates
- Property editor
- Real-time preview
- Multiple pages
- WYSIWIG editing
- Cover pages
- Headers & footers
- Layers
- Watermark support
- Page numbering
- Keyboard shortcuts
- Appendix pages
- Element guides & snapping options
- Report Templates
- Dynamic text variables
- Conditional formatting
- Report Versioning
- Report parameters
- Zoom level
- Drag & drop report building
- Report data export & import
- Inbuilt context sensitive help
- A4 and Letter Page sizes
- Snap to grid
- Data-flow logic editor

Report creation

- Manual
- Interval based
- Automatic delivery by mail
- Rule based
- Scheduled
- PDF reports

Logic engine

- IoT-TICKET data-flow logic editor
- Big-data enabled
- Analytics enabled

Visualization widgets

- Angular gauges
- Linear gauges
- Table
- Checkbox
- Charts
- Data table
- External content
- Map
- Parameter browser
- Image
- Status indicator
- Label
- Sankey diagram
- Progress indicator
- State indicator
- Timeline
- 3D objects
- Drawing tools line circle square
- Analytic views
- FFT

Runs on

- Microsoft Azure
- amazon web services
- IBM Bluemix
- Google Cloud Platform
- ANYCLOUD
- On premise

Linear scalability

Deploy anywhere

Enabling

- Augmented reality
- Virtual reality
- Mixed reality

IoT-TICKET IoT Office Suite

IoT-TICKET Dashboards

IoT-TICKET Core

- Web browser based
- Drag & drop UI & UX building
- Enterprise browser
- Alarms & Events
- Templates & Versioning
- Smart Button enabled tray
- Permission based
- Inbuilt context sensitive help
- Quick access favorites
- Asset information
- Rapid prototyping and deployment
- Smart data aggregation
- Full screen
- Zoom in & out
- Big Data enabled
- Analytics enabled

User interface design and layout elements

Visualization widgets

- Angular & Linear Gauges
- Charts
- Table
- Camera
- Map
- Data table
- External content
- Map
- Parameter Tree & Browser
- Image
- Status indicator
- Label
- Sankey diagram
- Progress indicator
- State indicator
- Timeline
- 3D objects
- Drawing tools line circle square
- Analytic views
- FFT
- Polar Chart

Interaction widgets

- Dialog
- Button
- Accordion view
- Checkbox
- Tab view
- Toggle button
- Textbox & Textarea
- Scrollable Container
- Input label
- Timerange
- Combobox
- Slider
- Data tag selector

Apps & Hardware store

- Free data acquisition Apps
- Commercial data acquisition Apps
- Mobile Apps IoTTracker
- IoT-TICKET enabled hardware
- Tutorials
- Developer tools

Mobile App Designer

- Design & Deploy Mobile Apps
- WYSIWYG editor
- Preview layout on ~250 devices
- Landscape & portrait mode
- Property editor
- Dashboards for mobile use

Data-flow logic editor

General

- Web browser based
- Drag & Drop Logic editor
- Data connections
- Interaction design
- Import & Export
- Inbuilt context sensitive help
- Properties
- Search filters
- Layout guides
- Zooming
- Keyboard shortcuts

Run modes

- Client mode
- Cloud mode
- Smart mode (mixed)

Data blocks

- Smart data tags
- Constants
- REST data
- Simulate
- Virtual data tags
- Combine
- Template data tags

Calculation blocks

- Absolute value
- Bit mask
- Bit shift
- Accumulation
- Average
- Count
- Division
- Exponentiation
- Filter
- Logarithm
- Mathematical expressions
- Maximum
- Minimum
- Multiply
- Nth root
- Number sequence
- Round
- Square root
- Substraction
- Sum
- Script (client only)

General blocks

- Analytics
- Report
- Navigate
- Timestamp
- Notification (Alarms & Events)
- Text replace
- OnLoad trigger
- Resource info
- Scheduler
- Synchronization
- Server status
- Map pin
- Time & Timers
- Server status

Logic blocks

- And
- Not
- Bit check
- Or
- If-then-else
- Ordered execution
- Lookup table
- Switch
- Multiplex
- Threshold
- Nand
- Triggered value
- Nor
- Xor

Analytics

Forecast

- Fourier arima
- Linear forecast
- Seasonal arima

Process control

- Emma chart
- Means & ranges
- Regression

Signal processing

- Fourier transform
- Wavelet transform

Distributions

- Cumulative distribution
- Histogram
- Probability density

Algebra

- Exponential
- Logarithm
- Power
- Root

Arithmetic

- Addition
- Division
- Multiplication
- Substraction

Plots

- 2D plot
- 3D plot
- Map
- Timeseries plot

Correlation

- Correlation matrix
- Cross-correlation

Classification

- K nearest neighbors
- Export to dashboards

API

Public APIs

- WRM API
- IoT REST API
- Simulink interface
- Development kits

Partner APIs

- Dashboard REST API
- Storage API
- Analytics API
- Messaging Que
- Event Broker

Data interfaces

- MQTT broker
- OPC-UA client
- OPC-UA server

...and many more...

IoT-TICKET Enterprise Manager

Communication

- MQTT
- 3rd party
- OPC-UA
- Error handling
- WRM Comm
- Logging
- REST (JSON + XML)
- Authentication
- Web services
- LoRa

OPC-UA Connector

- OPC UA endpoint configuration
- OPC-UA Server
- Address space browser
- OPC-UA Client
- Subscription configuration
- Historical data
- Security
- Process values

MQTT Connector

- Publish
- Certificate management
- Subscribe
- Over the air file transfer
- Device configuration
- Device file management
- Process data

General

- Alarms
- Device status
- Online/Offline
- Connection view
- Communication statistics
- Enterprise browser
- Search

IoT-TICKET Domain Model

Data model

- Measurements
- Events
- Statistical data
- Variables
- Quality
- Data aggregation
- Analysis
- Files
- Alarms

User model

- User
- Profile
- System permissions
- Item & resource permission
- Email notifications

Asset model

- Enterprises
- Data tags
- Sites
- Meta data
- Assets
- Devices
- Location
- Hierarchies

Over the air updates

- Remote configuration
- Security (SSL / SSH)
- Online & Offline updates
- Verified deliveries
- Firmware updates
- Routing
- Versioning
- Retries
- Modular provisioning
- Application software
- File transfer
- 3rd party libraries
- Compression
- Kernel modules & Device drivers
- Error detection
- Automatic deployment
- Manual deployment
- Version history
- Version states
- Logs
- Remote rollback
- Deploy custom updates
- Audit trail

Identity and Access Management

- Authentication
- Delegated Administration
- OAuth
- Customer management
- LDAP Active Directory
- Customer hierarchy
- Password management
- User privileges
- Password policy
- Asset visibility
- Users
- Feature level permissions
- Profiles
- Logging

Stream processing cluster

- Yearly statistics
- Quarterly statistics
- Data pre-processing
- Monthly statistics
- Weekly statistics
- Daily statistics
- Hourly statistics
- Minute statistics
- 3rd party microservices
- Average
- Minimum
- Maximum
- Count
- Sum

Flow computing cluster

- Data-flow logic execution
- Loop detection & prevention
- Resource usage per flow
- Flow validation
- UI state per Dashboard
- Flow cycle transactions

Platform infrastructure and operations

General features

- Host health monitoring
- Cluster management
- Component health
- Load balancing
- Centralized configuration
- UI management
- Centralized logging
- Access management
- Deployment tools
- Configuration
- Microservice orchestration
- Themes

Security

- Network security
- Vulnerability scanning
- Encryption
- Security process
- Security audits

Backup and recovery

- Automated backups
- Configurable backups
- Incremental backups
- Disaster recovery
- Business continuity

Deployments

- Manual deployments
- Automated deployments
- Device configuration
- Process data
- Device file management
- Certificate management

IoT-TICKET Infrastructure

Scalability

- Analytics cluster
- Cluster Orchestration
- Dashboard cluster
- Flow processing cluster
- Communication cluster
- Reporting cluster
- Big Data cluster
- Stream cluster
- Queueing
- File system cluster (HDFS)
- Capacity planning

Data storage

Big-Data

- Hadoop HDFS
- HBase
- Cassandra
- Data storage abstraction layer

Relational data

- SQL

IoT-TICKET co-creation

- IoT-TICKET Training Center
- Message queue
- Microservice Architecture
- Dashboard UI editor
- IDE support
- Debugging
- Dashboard REST API
- Data-flow logic editor
- Scripting
- SDK
- Configuration server
- Report editor
- API
- Developer samples
- Auto test environment
- Terminal unit software
- Developer documentation
- Apps
- Auto build environment
- White Label possibility
- Cluster management
- Auto deployment environment
- Centralized logging
- Artificial Intelligence
- Version control
- Federations
- Change management
- Object recognition

OPC UA

- OPC UA
- OPC UA Client
- OPC UA Server
- OPC Gateway
- REST API
- 3rd Party
- LoRa, Wiegand, et al
- DEVELOPER LIBRARIES
- C# C/C++ QT
- Codeysys Java
- Python Simulink

IoT-TICKET Enterprise Manager

WRM247+ Terminal Unit App

General functions

- Alarms
- Web UI Config
- Actions
- Gateway services
- Local Scripts
- Webserver
- Triggers
- Multi-platform
- SMS
- Rule module
- State monitoring
- Adaptable Firmware
- Heartbeat
- Real-time Linux
- Asset registration
- Module configuration
- Watchdog
- VPN
- Asset discovery
- Email
- Alarm routing
- Remote tunnel
- Remote access
- SSH
- Remote system commands
- Firewall

Connection

- Wired
- Gateway
- Bluetooth
- Wireless
- Fieldbusses
- 1-wire
- Router
- 3G / 4G
- CAN
- Serial
- IEC 61850
- Analog / digital IO
- 3rd party
- Firewall & Proxy
- Wirepass
- Full Linux network stack
- Protocol conversion
- REST / JSON

Rich data types

- Numeric
- JSON
- String
- Binary
- FFT spectrum
- Images
- Files
- Date / Time
- Streams
- Spatial data
- Boolean
- Custom types

Data collection

- Data tags
- Log on change
- Data normalization
- Sampling rate
- Polling
- Scheduling
- Data scaling
- Data normalization
- Timers
- File watcher
- Send all
- Data concentration
- Data aggregation
- On-demand
- Filters
- Data buffering
- Communication scenarios
- Monitoring Watchdog

Over the air updates

- Remote configuration
- Security (SSL / SSH)
- Firewall
- Online & Offline updates
- Rollback
- Integrity checks
- Firmware updates
- Routing
- Versioning
- Modular provisioning
- File transfer
- Deploy custom updates
- Application software
- 3rd party libraries
- Kernel modules & Device drivers
- Retries
- Verified deliveries
- Compression
- Error detection
- Watchdog

Logging

- Smart logging
- Structured logs
- Configurable
- On demand retrieval
- On demand retrieval
- Various log levels

Device management

- System resources
- Full Linux driver Stack
- Event driven drivers
- Optimized real-time drivers
- Custom drivers
- Per device module loading

IoT-TICKET Connectivity

WRM247+ device with integrated sensors

- GPS
- Acceleration
- Temperature
- IP65

OPC DA App

- OPC DA server auto-discovery
- Address space browser
- Data tag editor
- CSV export / import
- Data tag management
- OPC read
- OPC write
- Path mapping
- Windows service
- Quick config
- Communication & Quota view
- Application log
- IoT-TICKET device sync

OPC UA to DA / OPC DA to UA wrapper

- Conversion
- Address space browsing
- Security
- Legacy system support

Industrial automation systems

- PLCs
- Gateways
- Control systems
- SCADA systems
- Automation systems

Sensors and Actuators

- Temperature
- Humidity
- Air quality
- Flow
- Pressure
- PIR
- Vibration
- Luminosity
- Location
- Current
- Voltage
- RPM
- Distance
- Fill level
- Position
- Misc. sensors
- Misc. actuators