

# machine to web

M2M  
IoT  
Smart  
Factory

Turning an idea into a  
market-ready product



**Microtronics**

We live M2M

## Management Services

System Integration  
Application Management  
Data Analysis  
Responsibility of System Security  
Responsibility of System Availability

## Engineering

Visualisation Mobile Operation (APPs)  
Visualisation, Dashboard  
Management of Access Rights  
Application Programming

## Portal Hosting

Portal Administration Security, Update  
Role-based Billing Portal  
IoT Data Storage / Connection Profile  
Portal Hosting

## Portal Features

External Data Exchange REST, MQTT, XML, SMS, e-mail  
Role-based Portal  
Portal PLC, Visualisation, Datalogger, Alarms, Reports  
Gateway Upload OTA: Application, Settings, Alarms  
Gateway Management OTA: Connection, State

## SIM Card

Role-based SIM Management Portal  
Role-based SIM Billing Portal  
SIM Chip & OTA SIM Card Activation  
Selection of best network available in every country  
International GSM Connectivity (Roaming)  
GSM Mobile Service Provider Contract

## Device

Custom Designs IP67, PCB, EX Housing  
Low Power Requirements, Optimised for Battery Operation  
Optimised for Low Data Volume Transfer  
Interface, Datalogger, Control, Integration  
Functions for Data Preprocessing / PLC  
GSM Modem Technology, Certificates  
Wireless Sensor Network, Bluetooth, etc.  
I/O, Sensor & Fieldbus Interfaces

## Machine

Equipment, Products  
Sensor, Sensor Networks  
Machines, Controls, Systems

**IoT Suite**  
  
**for stable,  
efficient and  
safe industrialisation  
with expert and  
partner network**

# Business Model

## Software



IoT Cloud SaaS



myDatenet PaaS



On Premise Abo

## Service



Workshop > Consulting



Professional Service >  
Support



Services > Managed Service

## Hardware



RE > Libraries > RTOS



Modules > Shields >  
Devices

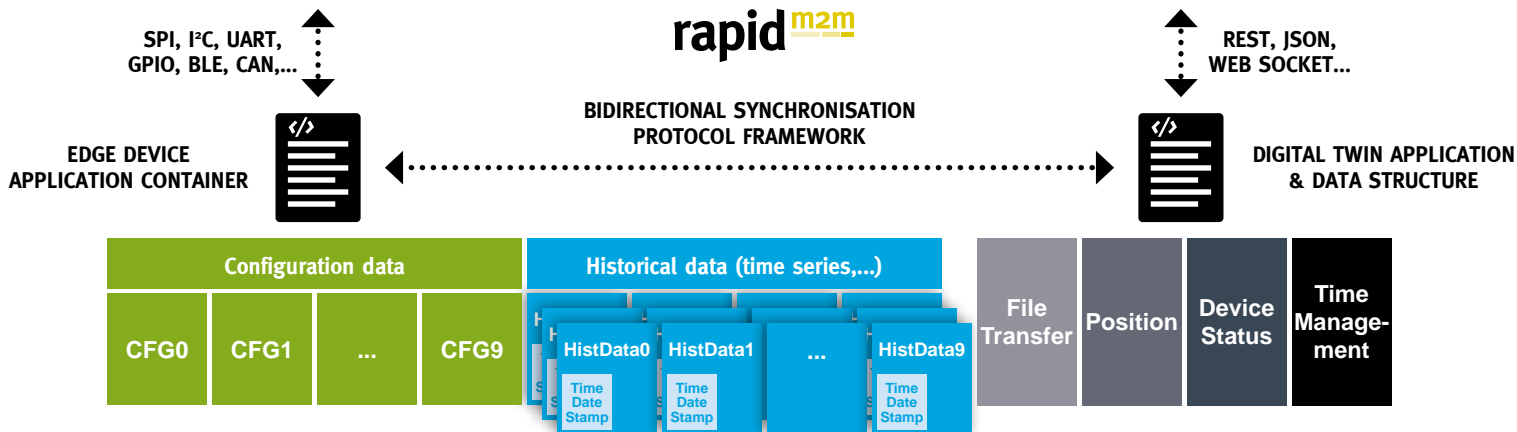
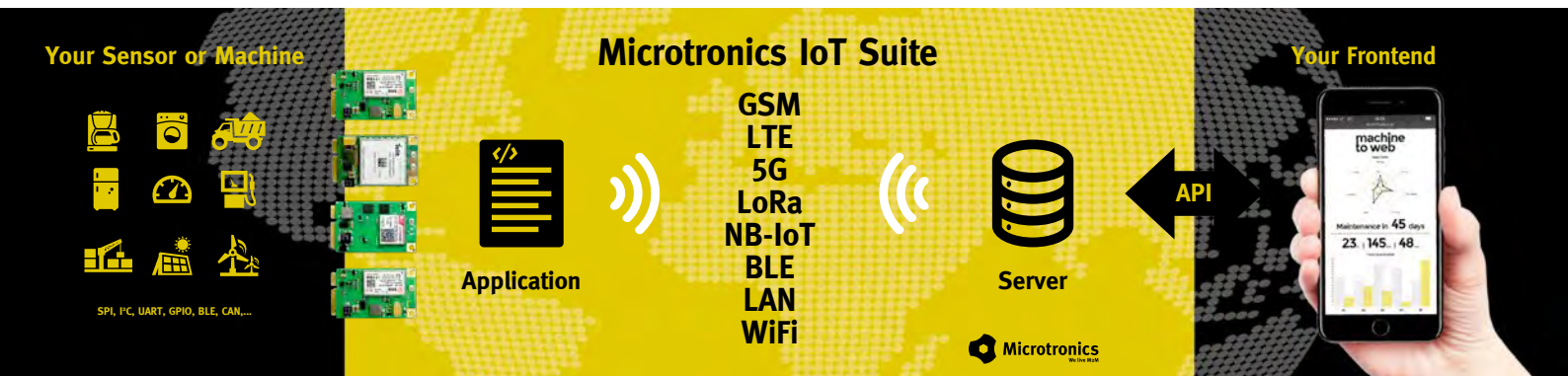


X-Device > 3rd Party Devices

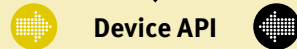
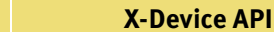
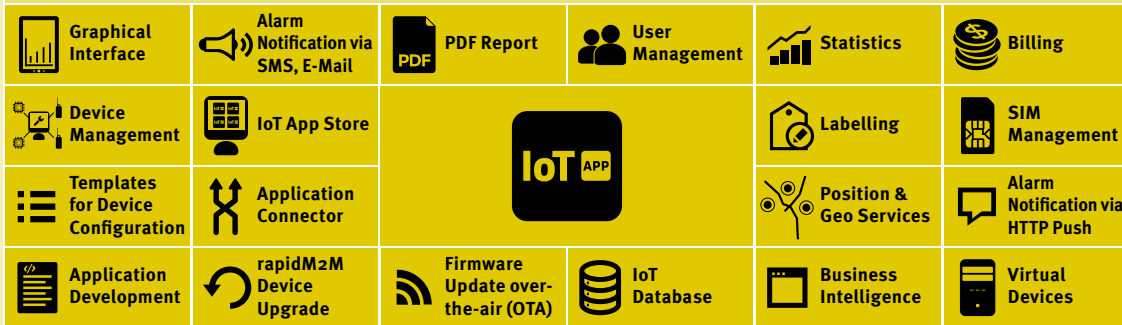
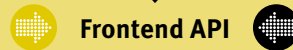
Connect your hardware to the Internet within 3 weeks.



# Principle of Operation



# IoT Platform



PoC Shields  
Toolset Software  
Webhelp  
Sample Webservice  
Streaming Interface  
Sample Applications

**Developer Tools**

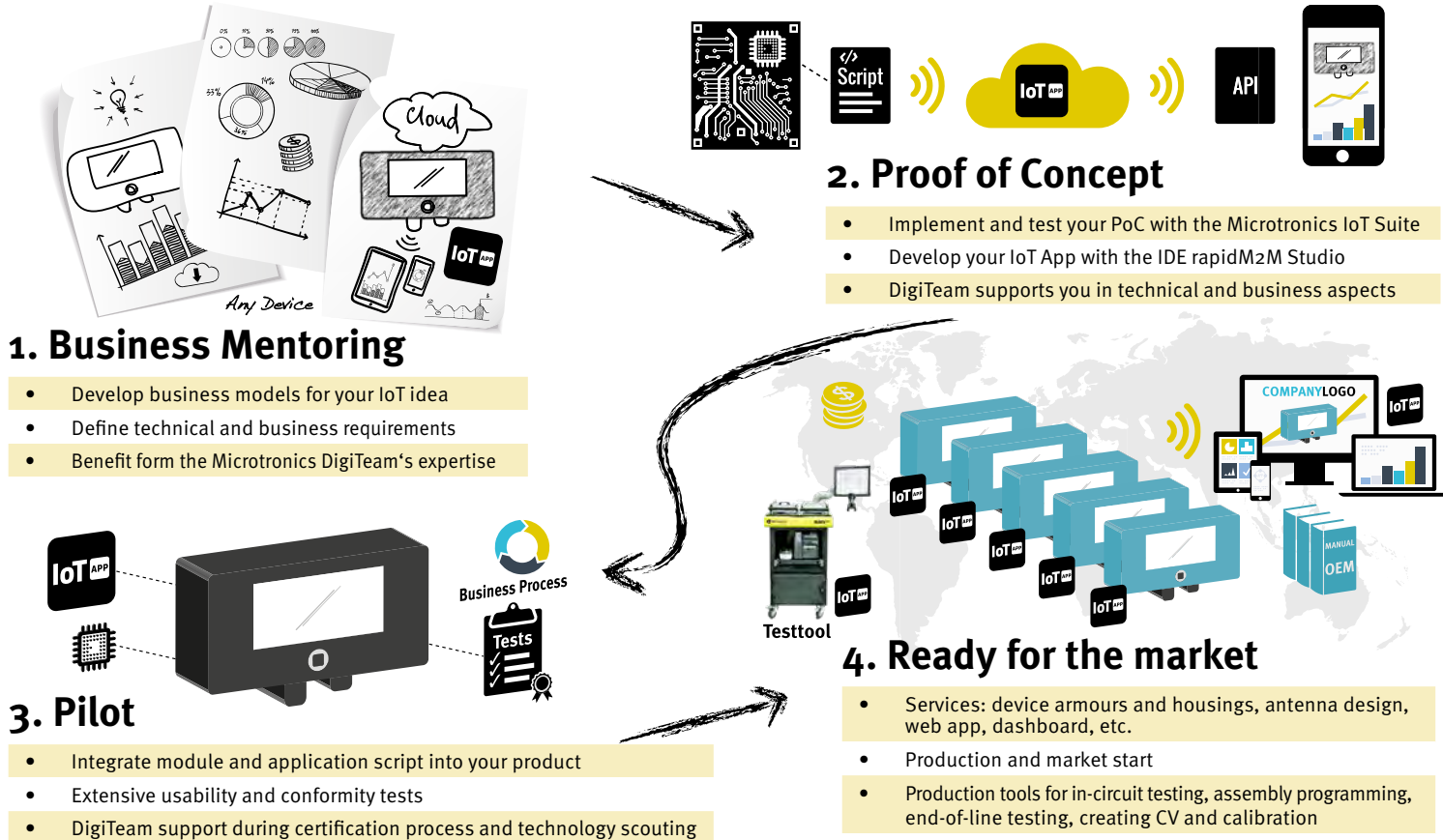
Custom Applications  
Cloud Account  
Prepaid  
rapidM2M Module  
Simulation Board

Customer Support  
Consulting  
System Integration  
Production Preparation  
& Testing

**Professional Services**

Proof of Concept  
Development Support  
Module Integration  
Hardware Development  
OEM Service

# From the idea to the market-ready product



# Proof of Concept Coffee Machine



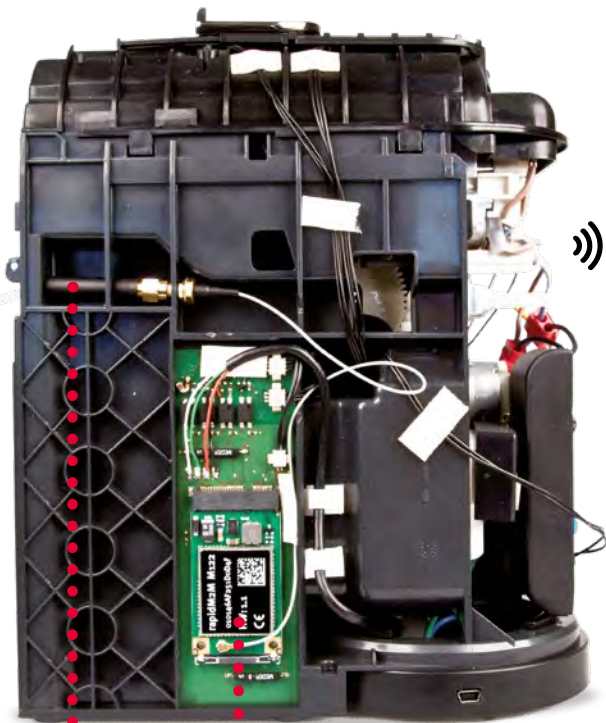
Ready in  
**3**  
Weeks

Data Exchange via Mobile



**Frontend**

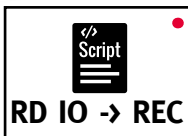
Dashboard, Enterprise System,  
Smartphone App, Web Service



Antenna

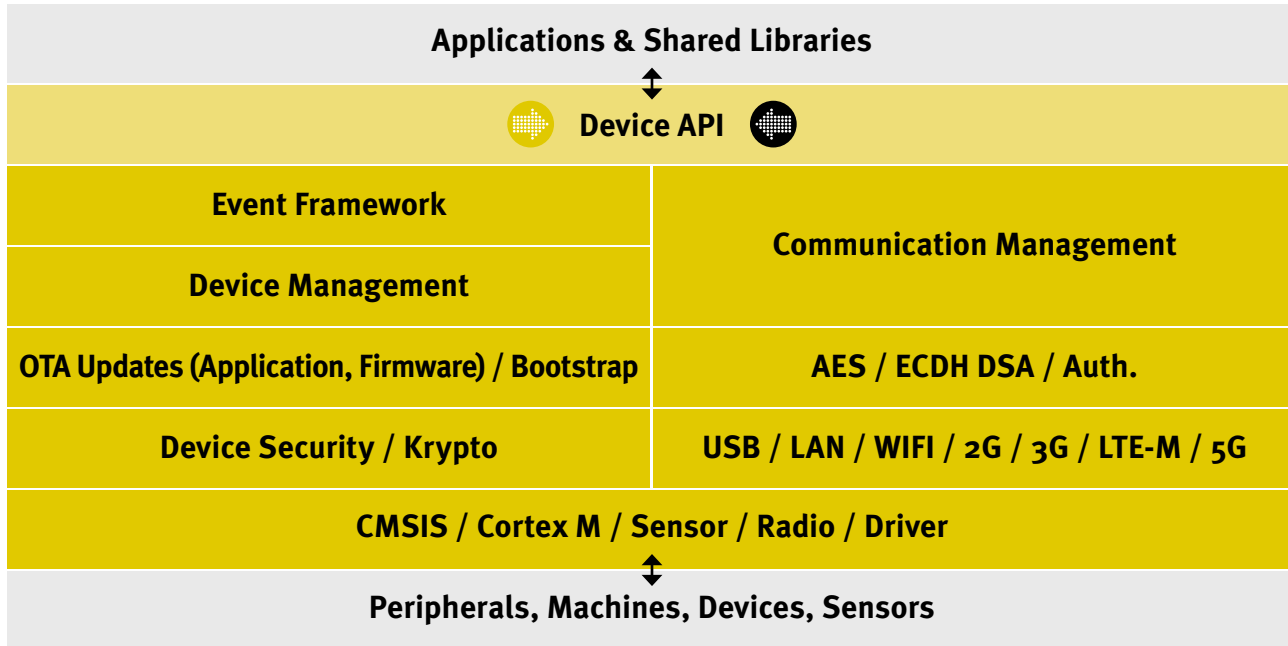
Modul rapidM2M

Signal Flow: \* = [ IO -> RD IO -> REC -> API ] = \*



**rapid** **m2m**

# rapidM2M Device API



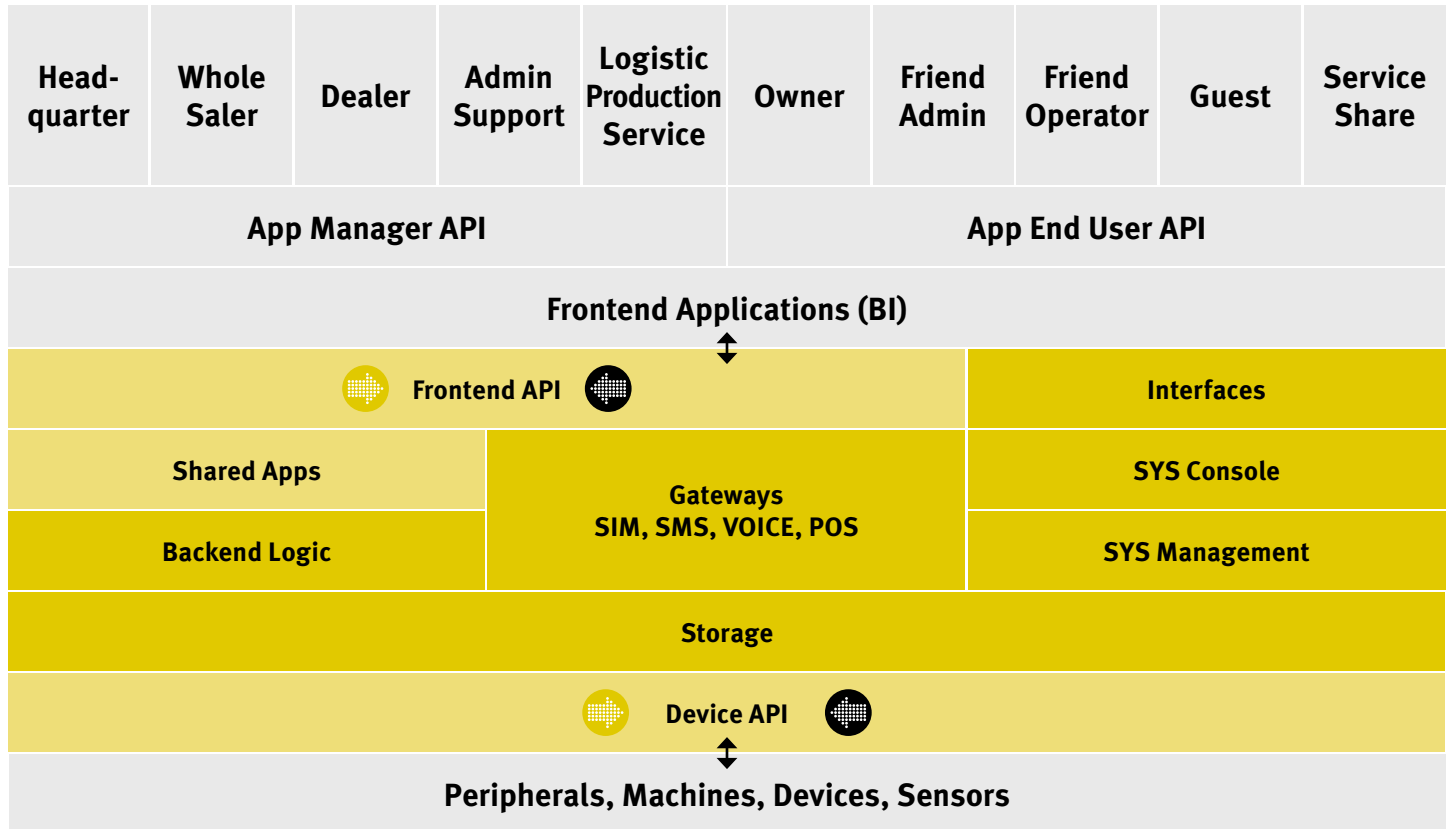
 Lifecycle Managed

 Lifecycle Managed Customisable

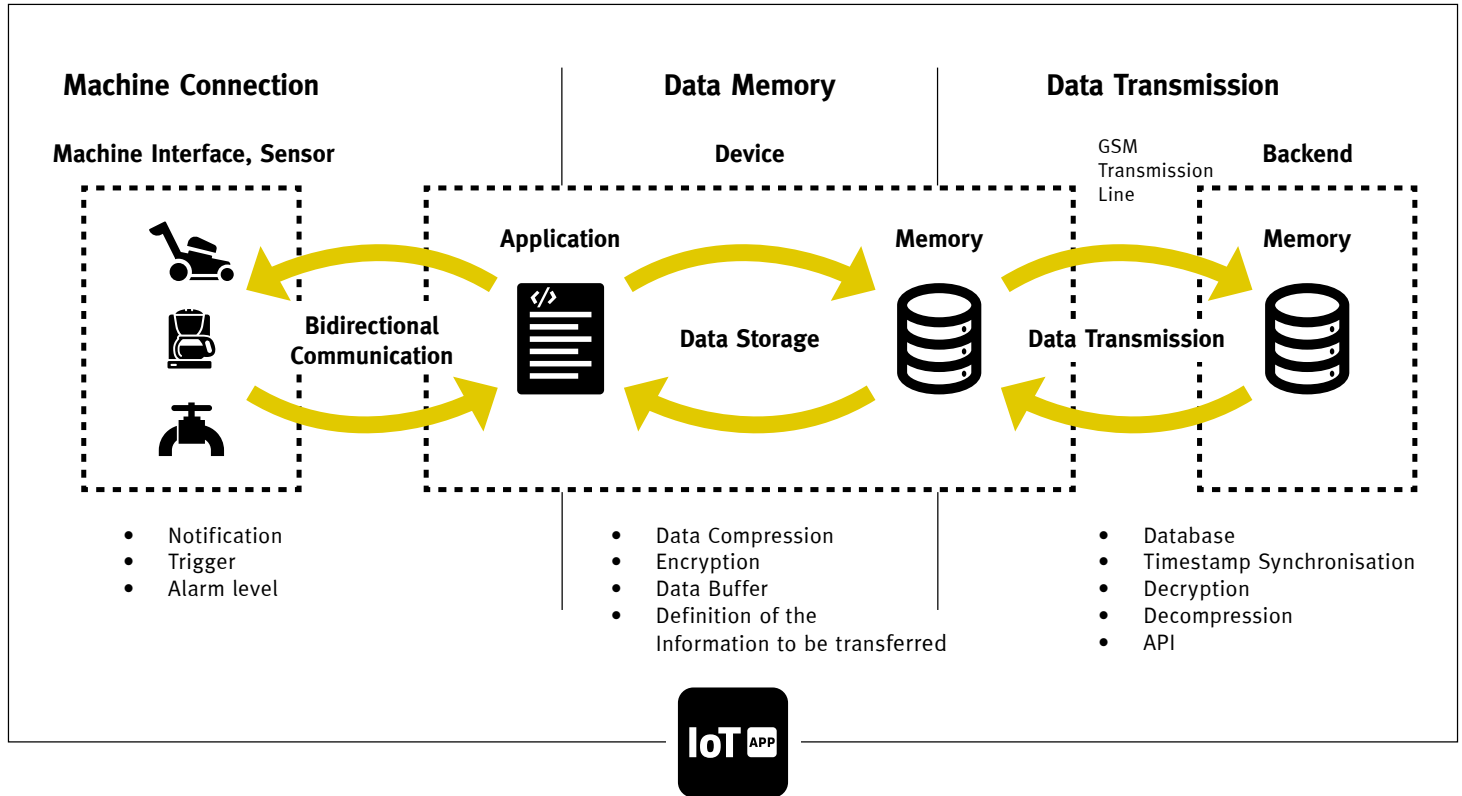
 Customer Specific



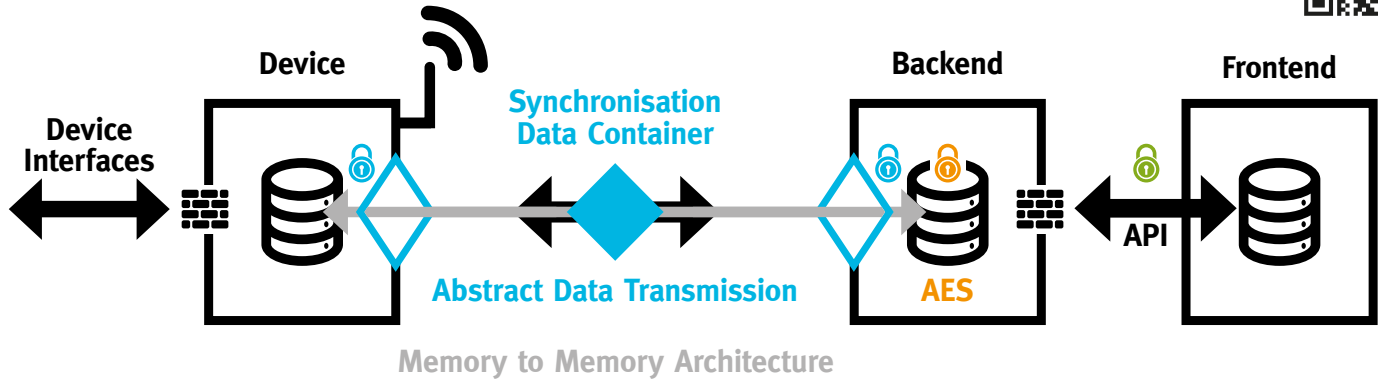
# Custom Application Integration



# Data Processing



# Security by Design



Ongoing Enhancements

Periodic Audits

ISO/IEC 27001 (2020)

Signed Firmware with PKI

Blockchain Applications

Certified Customer Enhancements



**AES with ECDH**

Server Authentication

Device Authentication (ECDH DSA)

Hardware Authentication **Kryptochip**



Strict Isolation

**RBAC** Access-Control

Database Encryption









**RBAC** Access-Control

TLS Encryption

# Microtronics IoT Suite



 <b>Development Environment</b>	 <b>Testtool, Production</b>	 <b>Websocket, REST API</b>	 <b>300 Projects 80 Countries</b>
 <b>Development Tools</b>	 <b>Security- &amp; Device Management</b>	 <b>Connectivity Management</b>	 <b>Partner Portal</b>

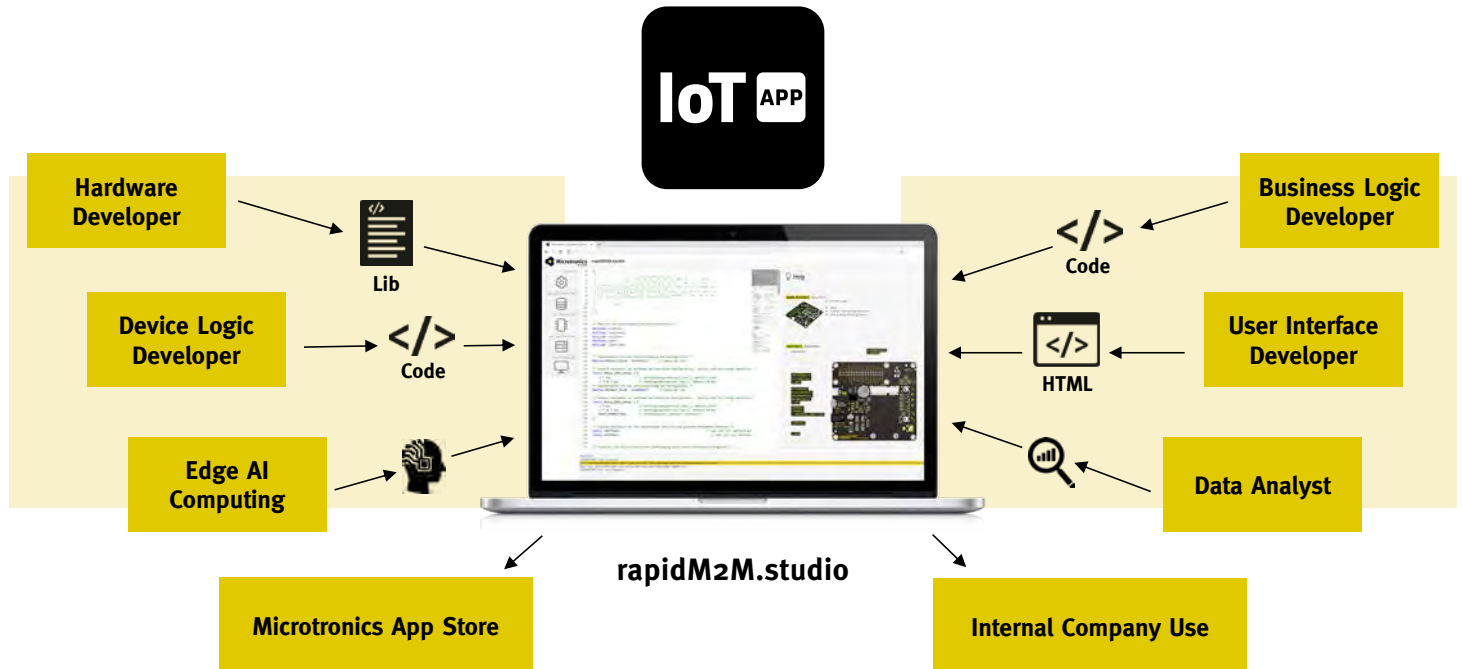


## What is an IoT App



# Shared Development with rapidM2M Studio

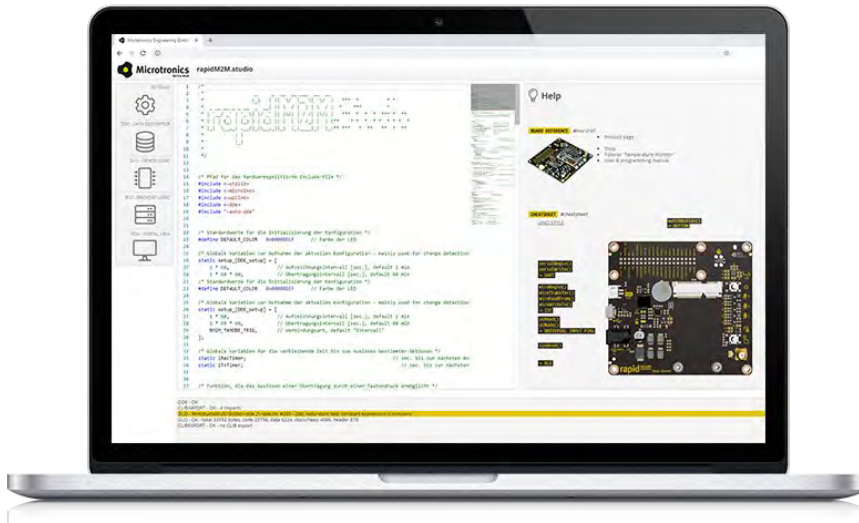
IoT projects involve several specialists and external partners.  
With the rapidM2M Studio they have a common denominator.



# Comprehensive Development Environment

## rapidM2M Studio

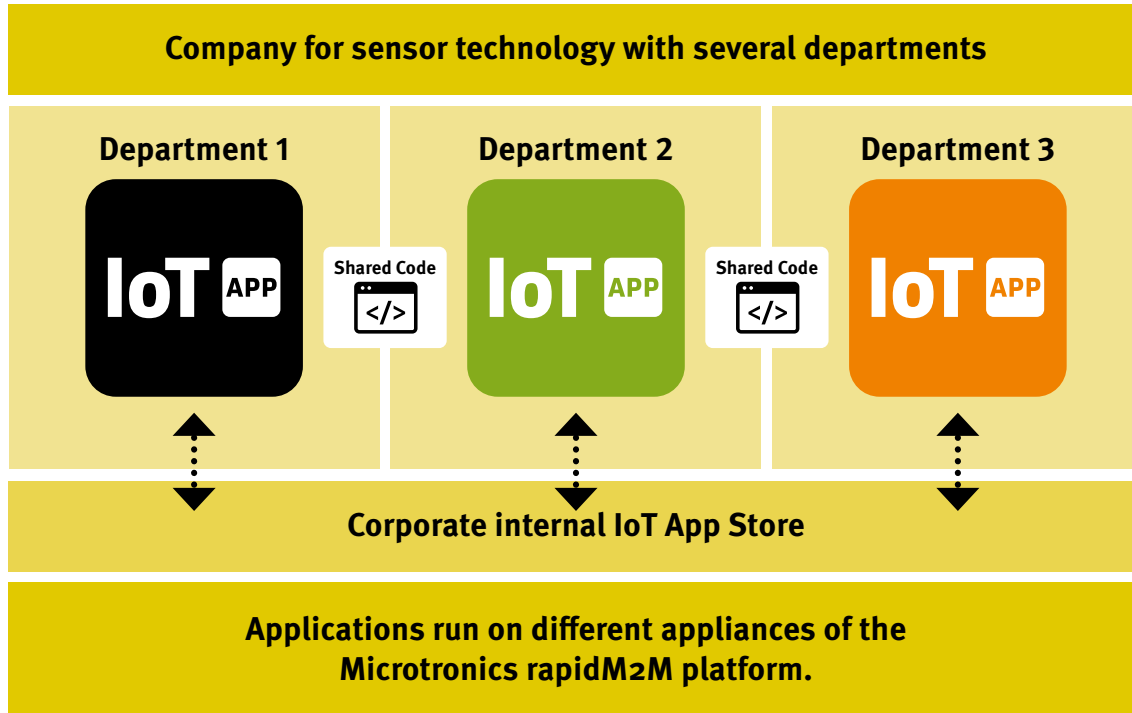
The cloud-based IDE rapidM2M Studio supports beginners as well as experts during the development from script to API. rapidM2M Studio is included in the free Partner Program, join now!



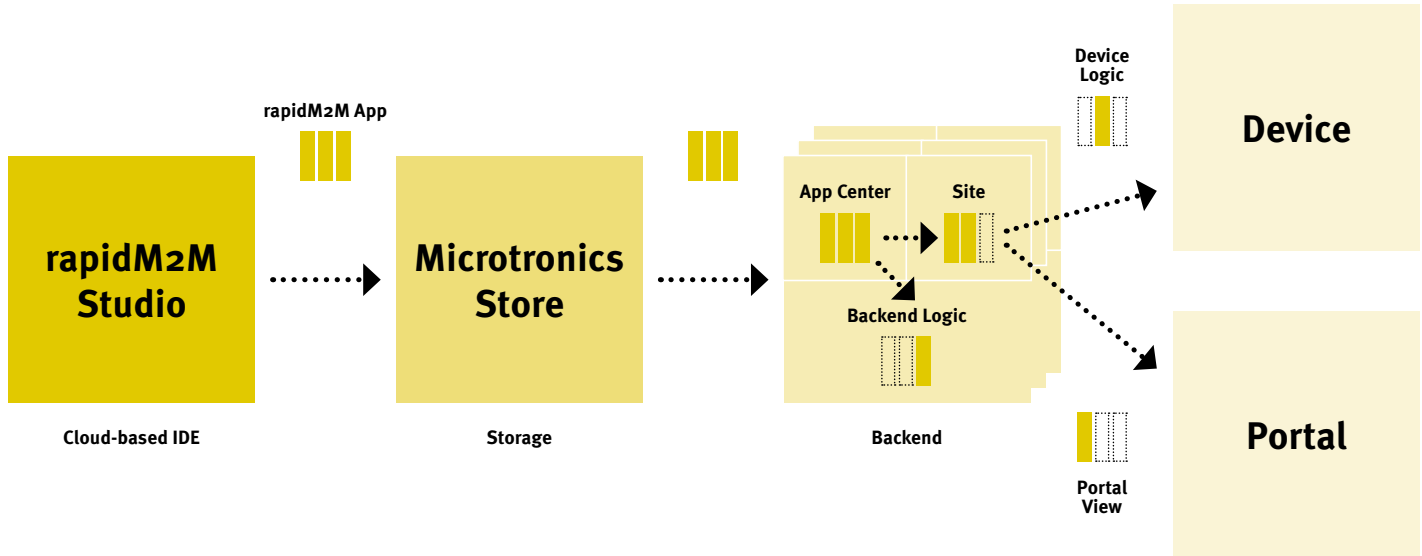
- Single point of service
- Runs via web browser
- Team development
- Documentation and live help
- Live compilation with results
- Test bed for easy application testing
- All files and source in one central project
- Project sharing (view/edit/admin)
- Support for project phases (stage/released)
- Binaries distribution via application store

# rapidM2M as Corporate Platform

Companies or business groups have several departments, sub-companies or competence centres. With the rapidM2M Studio and the App model there is a harmonised platform and nevertheless everyone can run his individual IoT application.



# Distribution & Sharing of a rapidM2M App

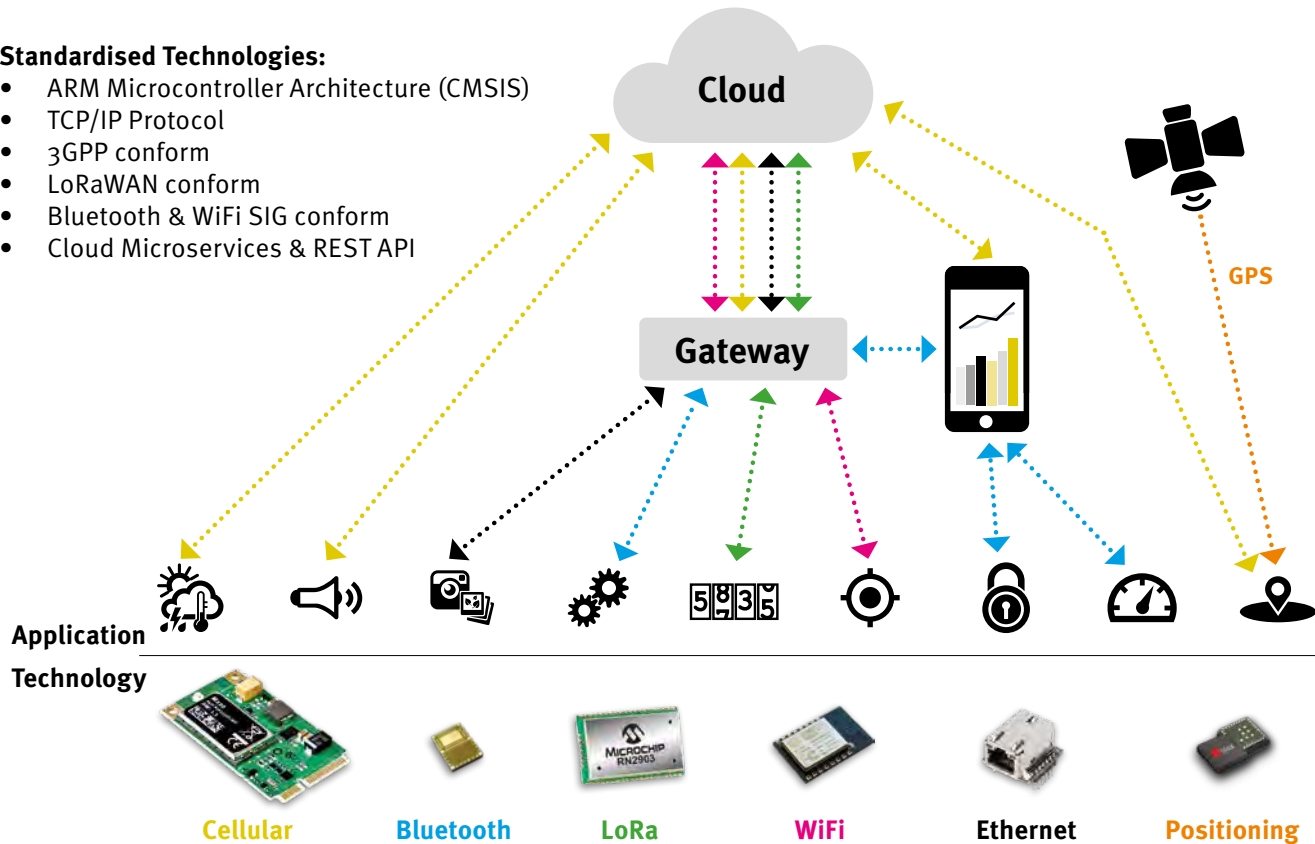




# IoT Connectivity

## Standardised Technologies:

- ARM Microcontroller Architecture (CMSIS)
- TCP/IP Protocol
- 3GPP conform
- LoRaWAN conform
- Bluetooth & WiFi SIG conform
- Cloud Microservices & REST API



# Core Values for the Customer



**Broad Range  
of Solutions**



**Complete  
Ecosystem**



**Technical  
Excellence**



**Security  
by Design**



**Easy Access  
& Quick Results**



**High  
Scalability**

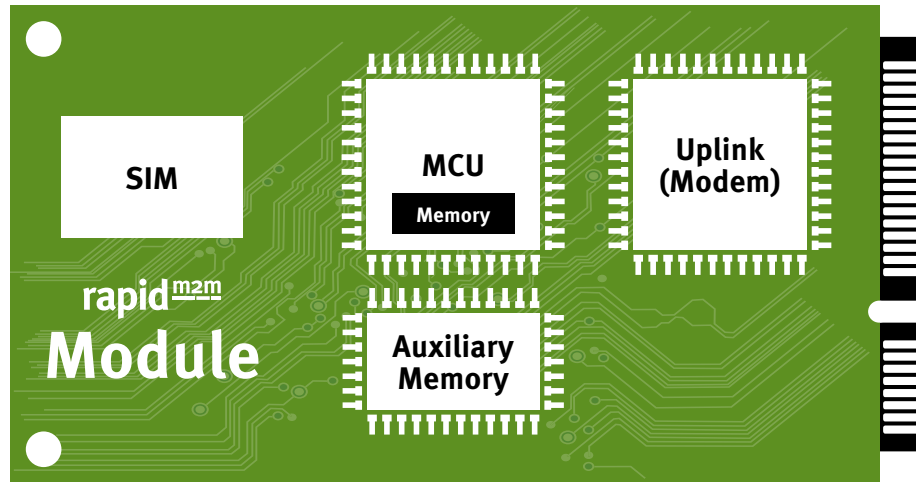


**Integrated  
Device  
Management**











**Long-term  
Support**

# Your Advantages gained through rapidM2M Family Concept











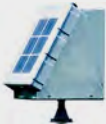




- One form factor available in different uplink technologies
- Long term compatibility of the application
- Abstraction of hardware and software
- Voltage conversion directly on the module
- Up to date without additional development or maintenance costs

# Family Concept Ready to Use Modules

Module		Features	Data Transmission	Interface
	<b>M220</b> Industrial Grade	Ultra Low Power	2G Quad-Band 3G EU/US/Welt 4G LTE Cat M1 NB-IoT WiFi LoRa	2 x UART 1 x SPI 6 x GPIO 1 x I <sup>2</sup> C 2 x Interrupt 1 x WiFi 1 x LoRa
	<b>M230</b> Industrial Grade	High Performance	2G Quad-Band 3G EU/US/Welt LTE Cat M1 NB-IoT WiFi	2 x UART 1 x SPI 6 x GPIO 1 x I <sup>2</sup> C 2 x Interrupt 2 x CAN 1 x LAN 1 x WiFi/BLE 1 x Camera & Display Interface
<div> <div>M22x 2G</div> <div>M22x 3G EU</div> <div>M22x WIFI/3G EU</div> <div>M22x 3G US</div> <div>M22x 3G Welt</div> <div>M22x LoRa/3G EU</div> <div>M22x LTE Cat M1</div> </div>				
      				

# Microtronics Reference Design for a Fast Integration

Applications ready to use	Industrial Device	Module / Dev Kits	Runtime
myDatalogH2S 	BLE Gateway 	rapidM2M 220 	rapidM2M RE 
myDatalogGauge 	myDatalogEASY IoT 	rapidM2M 230 	
4-Channel Data Logger 	rapidM2M C330 	rapidM2M Education 	
wasserstand.info 	EC-CAN-oox 	rapidM2M Base Starter 	



**„The programming of our individually developed rapidM2M hardware could be implemented in the shortest possible time thanks to the extensive API. Now we are able to offer our customers a connection to the IoT.“**

Konrad Puchalski, Hardware & Software Development, NOLTA NOVA GmbH & Co. KG

**„With D-Eye® you monitor your site visually. D-Eye® was especially developed for monitoring overflow. Therefore, if the system recognises an overflow D-Eye® automatically takes a picture.“**

Jan Bidsted, CEO DANOVA ApS



**„Thanks to tailored M2M solutions, we can raise connectivity to a future-proof level - making innovative customer solutions possible in real time.“**

Sebastian Matt, STIHL Tirol GmbH



**„The hardware has to fulfil the rough environmental and working conditions. This, for example, could mean high temperatures, vibrations or formation of dust. By using the CAN Gateway, a reliable data connection is provided.“**

Jürgen Haßler - Technology Manager Komptech GmbH

**„The combination of the know-how of Microtronics and Schildknecht enables our customers to quickly implement a single IoT application and easily scale it in series.“**

Elena Eberhardt, Business Development Manager, Schildknecht AG



**„The advantage for the customer is that he complies with all obligations to produce supporting documents by one keystroke.“**

Dr. Michael-Marcus Tauber, CEO cell GmbH





**Try the development environment for free and build your own IoT application.  
Join the vibrant community >>> [www.rapidm2m.com/join](http://www.rapidm2m.com/join)**

