M2M
From Development Kit to Smart Services

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What we do
Embedded Computers & Switches

Services
Support, Consulting, Custom Design, Integration, RMA, Supply Chain, Revision Control, Life Time Management

Systems
Application Enablers OS, BSP, Drivers, Firmware, BIOS, System Management

Software

Boards

3rd party Silicon

Processors

Ethernet Switches
Kontron Support of Intel Intelligent Systems Framework (ISF)

» Kontron is a leading supporter of Intel’s Intelligent Systems Framework Initiative
  – Announced September 11th at Intel Developers Forum
  – Framework that defines a Set of Interoperable Platform Solutions Designed to Enables connectivity, manageability and security from end-point devices through gateways to cloud and client technologies in a consistent and scalable manner
  – Will reduce development time for HW and SW integration along with total cost of ownership for intelligent connected systems deployments
  – Encourages ecosystems partners across ODM. OEM (both SW & HW), integrators and consulting & engineering firms to collaborate with and support the framework in order to accelerate growth of the IoT/M2M market

» Kontron has introduced several products supporting this framework:
Kontron Advantages with Intel Intelligent Systems Framework

Kontron’s products provide 4 key aspects of ISF:

» **Scalable Performance – Meeting Application Needs**
  – Using energy-efficient performance processors ranging from the *low-power Intel® Atom™ processor* to the *high-performance Intel® Xeon® processor family*

» **Security – Keeping Data Safe**
  – Solutions will ensure intelligent systems, applications, and data are protected, including support for tools from *McAfee®*

» **Manageability – Device > Cloud > Server > User**
  – Broad spectrum of hardware- and software-based manageability solutions providing reliable, highly available, and easily upgradeable solutions to maximize ROI with lower TCO

» **Connectivity – Acquiring and Transferring Meaningful Information**
  – Multiple connectivity options using Wireless (WWAN, WLAN, WPAN) and Wired (LAN) solutions across a wide range of products
Reasons for the „M2M Hype“

» Remote control, Remote Management, Telemetry known for many years
  – Reduces maintenance cost, lowers MTTR

» Ubiquity of cellular networks = no cabling
  – Ease of retrofit
  – Reduced installation cost

» Increased Cellular Data Rates affordable
  – Enables comprehensive real time information transmission

» Integration into company processes and value creation
  – Sell service rather than product – “Pay as you Use”

» Mobile Network Operators need to find new area for growth
  – Smart Phone Wars have been fought – „All Flat“ Tariffs (Voice, Internet SMS)
  – Need Return of Invest for UMTS, LTE networks deployment
  – „Internet of Things“ will consume a multiple of SIM cards vs. Smart Phones
  – Promote M2M aggressively

» Higher Grade of Automation
  – Generic approach vs. purpose built
M2M Development Kits
Connected, Managed, Secure

» Based on the Intel® Atom™ processor architecture
  - Designed with a modular approach which enables a simple and cost efficient tailoring to specific application needs

» Feature rich development kits and application specific deployment units
  - Wireless Connectivity
    - GSM / UMTS / LTE (Option)
    - WLAN 802.11
    - ZigBee 802.15.4, Bluetooth

» Ecosystem partnerships with global market leaders
  - Cloud enabled secure communication with existing Carriers / Cloud providers
Kontron M2M Development Platform
Gateway for Sensors to the Cloud

- Machines Sensors
- WLAN 802.11
- WPAN
- HDMI Audio USB
- GbE
- GSM UMTS LTE*

* LTE and Bluetooth support in planning
Kontron M2M Development Kit
Designed for OEM Customization

» Additional expansion capability through optional Expansion Board
  – Larger Expansion Boards *may* incorporate AV Board functionality
M2M Software
Multiple Stacks on Multiple Devices

Data Center + Hosting

Customer Portal - WebServer
Cloud Services
Real Time Data Mining

Wired or Wireless Internet “Cloud”

Managed Connectivity
Global Roaming      Data tariffs

Wireless / IP Communication Middleware
Local App (data aggregation / preprocessing)
Linux OS, Java VM, Drivers, OSGi
GSM, 3G/4G, CDMA, ZigBee, Bluetooth, WLAN…
HW Platform, Processor

Security

Apps

Upgrade Mgr

The pulse of innovation
Partner Ecosystem
Collaboration leads to faster results
Example for MNO services
Vodafone

- Subscription Management
- Non Geographic SIM – homed after deployment
- SIM Card (socket) or SIM chip (soldered)
- Central Control Platform for SIM card provisioning – Self service
M2M Application Example
Home Health Infrastructure

Deployment / Installation
M2M Application Example
Building Automation – Mix of Standards

Internet Portals

- Tyco Power Meter
- Tyco Power Meter
- JCI Thermostat
- JCI Thermostat
- JCI Thermostat
- RS-485 Dongle
- JCI NAE
- GbE Switch
- Z-Wave Dongle
- Router & Z-Wave Control Point
- WiFi AP1
- WiFi AP2
- BacNET
- LAN
- WWAN
- WiFi

Devices:
- Internet Portals
- Z-Wave Light Switch
- Z-Wave Light Switch
- Z-Wave Door Lock
- IP Cameras
- IP Cameras

Protocols:
- RS-485
- USB 2.0
- Gb Ethernet
- Z-Wave
- WWAN
- WiFi
M2M Application Example

Vending Machines

» Ensure efficient & timely Service
  – Bring the right products for refill
  – Go there when necessary

» Collect revenue information
  – Which locations work well
  – At which times
  – Which product sells when

» Control Money flow
  – How much was sold
  – Does all the money arrive at the bank?
  – Enable Mobile Payment

» Embedded Control Consolidation
  – Integrate Communication Gateway and control unit
  – M2M units for retrofit of installed base
M2M Application Example
Elevator

» Ensure efficient & timely Service
  – Bring the right spare parts for repair
  – Remote “Fine Tuning”
    of control parameters
  – Go on-site when necessary
  – Database with safety revision intervals

» Embedded Control Consolidation
  – M2M units for retrofit of installed base
  – Integrate Communication Gateway
    and elevator control unit
  – Integrate User Alarm Button
    and Interkom to Call Center
Not enough performance? Wrong form factor? Kontron can help!

KiSS

Concept Box

MPC

KOPS

... and many more...
How To Purchase an M2M Development Kit

LEARN MORE AT kontron.com/M2M »
A Swiss Army Knife solution that can be used to

GENERATE
AGGREGATE
and
TRANSMIT

machine to machine data to the cloud
Thank you for your attention

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“M2M from Development Platforms to Smart Services

Embedded Computing specialist Kontron entered the M2M market in 2011 with a modular M2M Development Platform featuring Intel Atom processor and various wireless communications interfaces. Intelligent M2M Gateways collect data from wireless sensors, preprocess it locally and thus turn it into actionable real time information for smart services. Today, Kontron is working with a network of partners to design tailored solutions for OEM customers in the vertical markets Healthcare, Industrial Automation, Energy and Transportation. This session will talk about real life experiences and the many aspects of these solutions from hardware, protocols, security, connectivity and version management to Web portals and smartphone Apps.”