Position Statement: ERICSSON US-EU Workshop

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Terminal Platform aspects

- We make platforms for others to build terminals on
- From classical embedded systems to near desktop functionality
  - Voice/video calls, streaming media, gaming, PDA functionality
  - Many different types of timing constraints
- Highly complex systems
  - Protocol stacks, codec:s, gui toolkits, multimedia
- Highly configurable
  - Assemble functionality to fit the need of individual customers
- Scalability is a key factor!

Proper Resource Management Needed
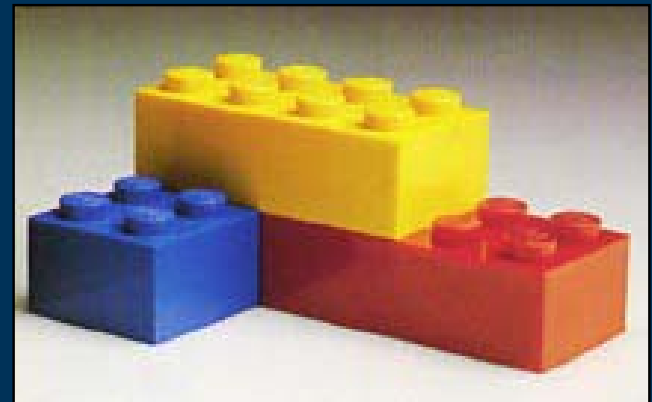
- **Problem:**

   Systems become fragile due to
   global sharing of resources
   - Adding or removing a component may cause timing problems
   - No global resource management (power, CPU, memory)
- **Wanted:**
   - Resource aware components
   - Predictable compositional behavior
   - Support for hierarchical designs
   - Explicit resource handling
   - Power aware scheduling

The Terminal is not a termination point anymore: a new world of Networked Devices opens up

- A network by itself
- Wireless external interfaces
  - handsfree, gamepad, sensors, etc
- Middleware for cooperating objects
- QoS management
  - Bandwidth, etc
- Real-time protocols
  - Guarantees
- Modeling, simulation and performance estimation

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Communication Systems aspects: Networked Embedded Devices make the base of m2m communication

- **develop light-weight, optimised networking technologies to embrace resource-scarce devices into the global networks**

- **study our next generation customer base**
  - characterise m2m traffic, stimulate services using global communication
  - adapt our systems to accommodate them
  - understand scenarios, develop business cases

- **advance design methodology**
  - formal method to link service/application domain to system realization, mapping services on network platform
  - early evaluation of usability, helps to improve not only TTM, but TTC (Time-To-Customer)

- **Identify/define m2m traffic enabling products**

- **many of the communication system nodes/components are built up by embedded systems, networked/clustered in different ways (like base-stations for instance)**

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