ETSİ Technical Committee M2M (Machine to Machine)
The members of ETSİ have recognized that purely “human
centric” market opportunities are becoming increasingly
challenging and we are seeing several new business areas that
can be made by connecting “machines to machines”. This
initiative is growing rapidly within ETSİ, supported by an
increasing number of traditional ICT stakeholders as well as
vertical market representatives. By connecting many (billions),
cheap (some euro cents) sensors to ubiquitous (always on)
networks, the business opportunities are numerous. ETSİ
member companies are seeing the value in making an end to end
M2M standard to ensure global applicability and interoperability.
With the release of the first publicly available set of M2M
standards for a horizontal service capabilities platform, ETSİ will
fill the gap in M2M standards and also enable the next phase of
M2M business development. This market development can only
happen with the deployment of horizontal platforms implement-
ing a set of clearly defined Service Capabilities. These capabilities
can be used by a multitude of M2M applications through the use
of open Application Programming Interfaces (APIs).
This standards based horizontal platform is engineered to support
multiple services whilst remaining network agnostic.

The figure shows a high level ETSİ M2M architecture.
The demos will showcase practically all M2M
architecture components:
> Different types of end devices (M2M standardized and
  proprietary)
> All reference points, i.e. mla, dla and mld
> Gateways (G), including the gateway interworking proxy
  (GIP)
> Applications - device (DA), gateway (GA) and network (NA)
> A number of access technologies such as Zigbee, WiFi,
  GSM, 3GPP (GPRS and UMTS)
> Solutions for handling different tasks, starting with
  collection, management and display of the application
data, but including also tasks like device management
or network subscription management

M2M Interoperability Demonstrations
As Release 1 of ETSİ M2M standards is being finalised
the interoperability of products based on those standards is con-
cidered to be a key element to market success. Working with ETSİ’s
Centre for Testing and Interoperability TC M2M has organised
demonstrations during the workshop that will show state-of-the-
art M2M products as well as the level of adoption of agreed
specifications and standards.
The 5 comprehensive interoperability demos, involving 13 different
companies, cover a wide cross section of the intended M2M appli-
cation domains such as Smart Energy, Environmental Sensing,
mHealth, Intelligent Transport, Ambient Assisted Living, Robotic,
Home Automation, Medical Appliances and Smart Metering.
This event is regarded as the first step in a list of activities that
will help ensure the interoperability of M2M implementa-
tions. ETSİ M2M is already considering further interoperability events
and the development of standardized test specifications.

About ETSİ Plugtests™
As a complement to its core standards-making task, ETSİ
specializes in running interoperability test events for a wide range
of telecommunication, internet, broadcasting and multimedia
converging standards. Plugtests™ events are open to all
companies, organizations, working and study groups implementing
a standard. For information about ETSİ Plugtests™ and upcoming
events, please visit: www.etsi.org/plugtests
SHORT DESCRIPTIONS OF THE INTEROPERABILITY DEMONSTRATIONS

M2M paves the way for Ambient Assisted Living solutions

**Involved Companies:** NEC, Wany Robotics

**Highlights:**
- Ambient Assisted Living use case
- A robot supports elderly persons at home
- end-to-end M2M technology to enable intelligent and situation aware services at home
- Middleware platform, which integrates heterogeneous M2M device types in a home, such as Home Automation, Medical Appliances, Service Robots, Advanced Smart Metering, Entertainment and Safety
- Towards the application layer it provides a technology-agnostic method to access in a unified way the information that those devices provide and the functions they perform
- Features deployed over a Home Service Gateway to both the local services environment as well as to cloud based services.

End-to-End ETSI TC M2M Release 1 Compliant Demo

**Involved Companies:** Radisys, Grid2Home, Intecs, Intel, InterDigital, Sensinode and Telecom Italia

**Highlights:**
- End to End (E2E) ETSI M2M Release 1 compliant demo
- Several types of devices such as constrained devices with M2M Device Applications, fully functional devices with Device Service Capability Layer & Device Applications, gateway with Gateway Service Capability Layer & Gateway Applications, and an M2M server with Network Service Capability Layer & remote Network Applications
- Devices communicating seamlessly via ETSI M2M standardized reference points dia, mid, and mla.
- Access technologies utilized for communication are ZigBee, WiFi, 3GPP/GPRS, and 3GPP/UMTS.
- Applications from domains such as Smart Energy, Environmental Sensing, mHealth, Intelligent Transport and Robotics
- Generic ETSI M2M Application highlighting the standardization framework developed by ETSI TC M2M.

M2M Gateway interacting with ZigBee sensors

**Involved Companies:** Actility

**Highlights:**
- An ETSI M2M Gateway implementing Gateway Communication Selection capability and interacting with ZigBee sensors using an ETSI M2M driver for ZigBee 1.0 implemented as a Device Application
- A Network Application, connected to the Network Service Capability via standardized reference point mla, will interact with the ZigBee network behind the ETSI M2M Gateway, read and set values, and activate logging in containers
- An implementation of the ETSI TC M2M gateway framework, focusing on its purpose, architecture and interfaces
- The gateway connects one or more field bus or automation networks (such as Home Area Networks), and an operator hosted M2M infrastructure
- All types of applications defined by ETSI M2M: Network, gateway and device are supported. Both native M2M and legacy devices (for instance a ZigBee) are supported via interworking profiles
- The interface between a legacy (non ETSI M2M) DA and a GSC performed by a gateway interworking proxy (GIP)

Standardized Embedded mHealth - a prototype for a Continua Health Alliance confromant framework on Java based GSM Modules for M2M communication

**Involved Companies:** CINTERION

**Highlights:**
- Implementation of Continua confromant data transmission of vital parameters (pulse oximetry data) by means of a GSM Module for M2M communication
- A Bluetooth pulse oximeter acts as a sensor that transmits the measured values wirelessly to a Bluetooth Receiver Module
- An embedded GSM Module for M2M communication receives the data from the Bluetooth Receiver Module via a serial interface, transforms it into a "Continua-Format" and then transmits the data via the GSM Network and the Internet to a Continua confromant server. The data are stored there and displayed on a PC or a mobile device.

M2M device service layer bootstrapping, provisioning and management via access subscription profile

**Involved Companies:** Intel, Vodafone Group and Vodafone D2 Test & Innovation Center

**Description:**
The demo shows how M2M service subscriptions on end devices can be managed via the underlying 3GPP subscription profile. It demonstrates a reference implementation of the ETSI M2M Functional Architecture TS 102 690.
The SIMs in the end devices are provisioned with M2M service profiles. These service profiles on the SIMs can be updated at anytime via OTA. OTA updates trigger OMA DM operations to discover service profile updates and initiate a bootstrap or provisioning procedure on the device as needed. Upon an OTA update, M2M service profiles on the SIMs are applied to OMA execute operations so that only devices that are allowed to deliver, for example a video surveillance service (based on the SIM profile), will respond to activate the service. The service will not be activated on devices whose SIM does not have this service profile activated.