Welcome to the World of Standards

WIRELESS EQUIPMENT FOR ADVANCED MANUFACTURING: HOW ETSI CAN HELP

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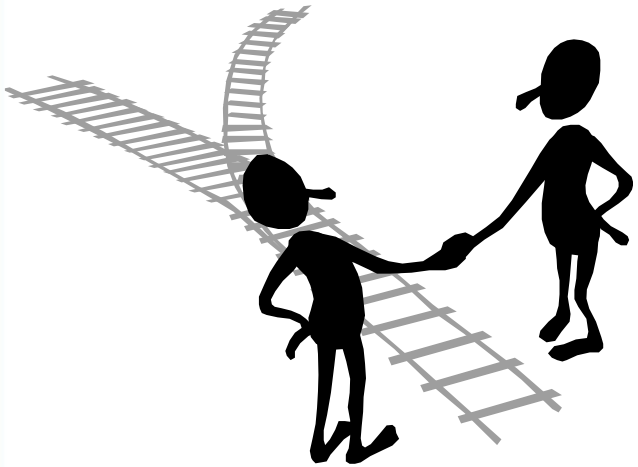
ETSI's "one table"

ETSI is a recognised European Standards Organisation

Association of industry players and government bodies…

…manufacturers, network operators, service providers, ministries, regulators, users, industry associations, universities, research bodies…

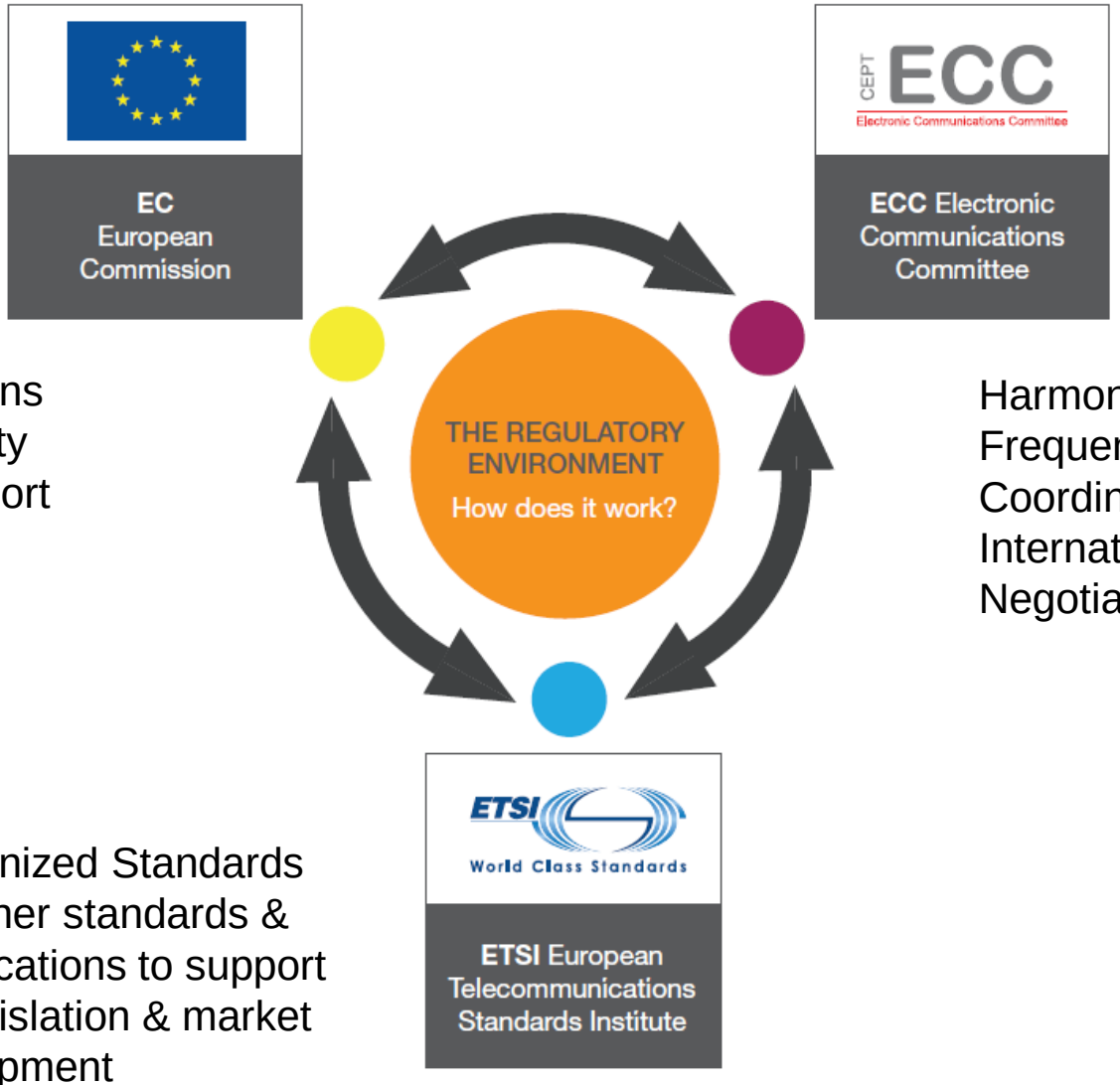


… with direct participation…

… members from all round the world

ETSI standards applied globally

ETSI – Part of the European Regulatory System



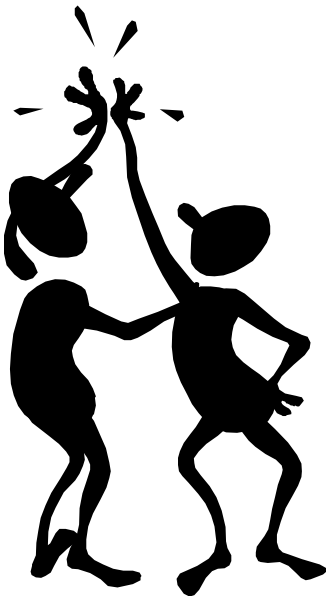
Policy positions
Legal certainty
Political support

Harmonizing National
Frequency Allocations
Coordinating
International
Negotiations

Harmonized Standards
and other standards &
specifications to support
EU legislation & market
development

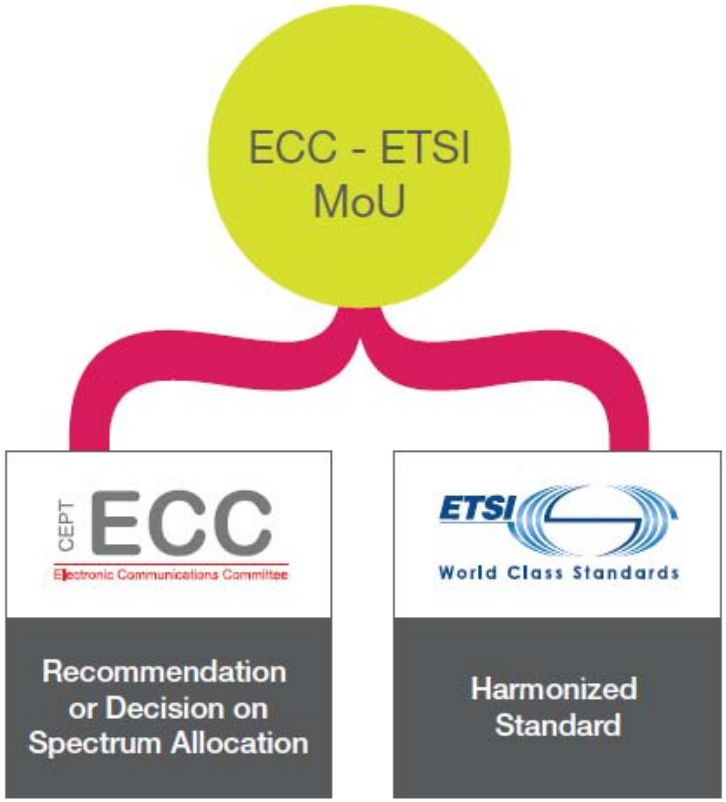
CENELEC-ETSI Work repartition & Co-operation agreements

- **Safety Standards are developed by CENELEC (LVD & RED art 3.1 (a))**
  - ETSI contributes via TC Safety
- **EMC (EMCD & RED art 3.1(b)):**
  - EMC for telecommunications network equipment and radio equipment other than broadcast receivers: ETSI
  - EMC Standards for broadcast receivers: CENELEC
  - Generic EMC standards and other EMC product standards: CENELEC
- **Radio spectrum standards are developed by ETSI (RED art 3.2 & art 3.3)**
- **Well-defined co-operation modes where needed**



What about Radio Spectrum?

- ETSI does <u>not</u> harmonise use of Radio Spectrum
- ETSI does <u>not</u> allocate Radio Spectrum
- ETSI co-ordinates with European Radio Regulators in CEPT to develop and align National frequency regulations



CEPT/ECC-ETSI Memorandum of Understanding

- In parallel to the development of Harmonised Standards, ETSI develops “System Reference Documents” to accompany requests for aligned radio frequencies in CEPT countries
- CEPT/ECC studies compatibility (with participation by ETSI members) and develops conditions for spectrum sharing
- Results of sharing studies form the basis of CEPT/ECC output and ETSI Harmonised Standards

CEPT spectrum-sharing study

ETSI System Reference Doc

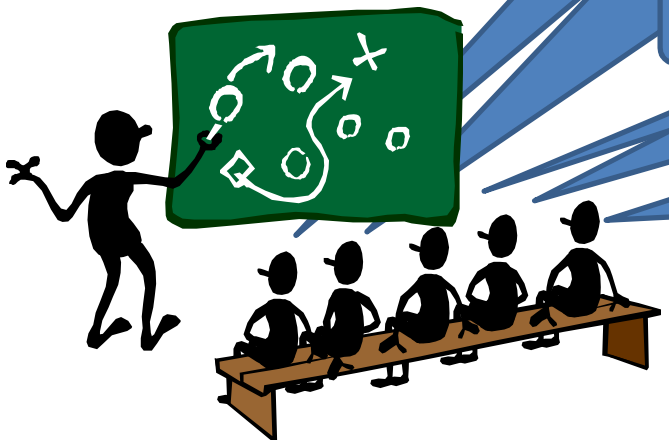
What are the proposed transmissions?

Other users?

What are the receiver characteristics?

Can they co-exist?

Is this the best use of spectrum?

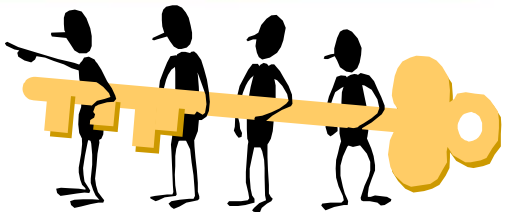


Sharing conditions

CEPT Frequency Decision

ETSI Harmonized Standard

Harmonised Standards for efficient and effective use of radio spectrum



- **European Standards (EN)**
  - 70 % (approx.) prepared in ETSI TC ERM
  - 4 ETSI members can propose a work item
  - Approved by consensus in a Technical Committee of members for Public Approval process.
- **Produced under a mandate from the European Commission**
  - And adopted by Member States
- **Implement essential requirements**
- **Adopted by National Standards Organisations**
  - EN Approval Procedure (ENAP): Public Enquiry & Vote
- **(200+) cited in the Official Journal of the European Union**
- **Member states required to presume conformity**

Some examples of Wireless Standards used for Advanced Manufacturing…

- **Generic short-range device standards:**
  - EN 300 330: Short-Range Radio equipment operating below 25 MHz (and inductive systems below 30 MHz)
  - EN 300 220: Short-Range Radio equipment operating between 25 MHz & 1000 MHz
  - EN 300 440: Short-Range Radio equipment operating between 1 GHz & 40 GHz
  - EN 305 550: Short-Range Radio equipment operating between 40 GHz & 246 GHz
- **Developed within ETSI TC ERM Task Group 28 (TG28)**

Some specific wireless standards of interest for advanced manufacturing…

2,4 GHz

- Industrial, Scientific & Medical band, allocated world wide: conditions of use vary from region to region
- In Europe, may use
  - 10 mW (EN 300 440) or
  - 100 mW (EN 300 328) **on condition that** a Medium Access Control (MAC) protocol is used providing equal access & graceful degradation to all users in case of congestion (TCAM Decision, 2008)
- ETSI Technical Committee ERM (TG11) develops the MAC protocol of Harmonized Standard EN 300 328
- As this is a shared band, all users are involved on an equal basis in the definition of the MAC protocol
  - e.g. Wi-Fi, Bluetooth, Zigbee, RFID, Telemetry, Telecommand, Alarms, Video links, Audio links, Radiodetermination, Industrial automation, Model Control, Smart metering / Smart Grid/ Wireless sensors, Medical applications and Wireless HD Audio applications

Some specific wireless standards of interest for advanced manufacturing…

- **5,8 GHz**
  - ERM TG41 (Wireless Industrial Applications)
  - Set up to develop harmonized standard(s) for wireless industrial applications (WIA) in the frequency range 5725 MHz to 5875 MHz
  - ETSI TR 102 889-2 (2011-08): System Reference Document
    - CEPT-Rec 70-03 allows 25 mW operation in this band for non-specific SRD
  - Harmonized Standard ETSI EN 303 258 under preparation

Opportunities for Advanced Manufacturing in ETSI

- Opportunity to contribute to Technical Committees to initiate work items and set the technical requirements for market access (ETSI Harmonized Standards under Radio Equipment Directive)
- Opportunity to contribute to requests for new spectrum (ETSI System Reference Documents) and take part in CEPT spectrum studies (representing an ETSI member in CEPT/ECC)
- Possibility to contribute to ETSI input to CEPT Decision making process
- Opportunity to contribute to ETSI work in partnership with the European Commission (TCAM, RSCOM, RSPG)
- Visibility of developing regulatory policy (ETSI RADIO_BRIEFING list)
- http://www.etsi.org/membership


Can ETSI do more to support Advanced Manufacturing?

ETSI Secretariat

- Harmonized standards need to be fit for purpose to provide presumption of conformity with these Directives, and be compatible with CEPT & Commission spectrum harmonisation measures
- ETSI Secretariat monitors developments in spectrum policy and regulatory issues, provides support and guidance to Technical Bodies and advice to authorities on developments in ETSI
- ETSI Secretariat co-ordinates with the Commission for timely and accurate listing of Harmonised Standards in the OJEU
- RADIO_BRIEFING list for briefing before Member States' meetings