

# Cabling & Installations in the NGN @ HOME

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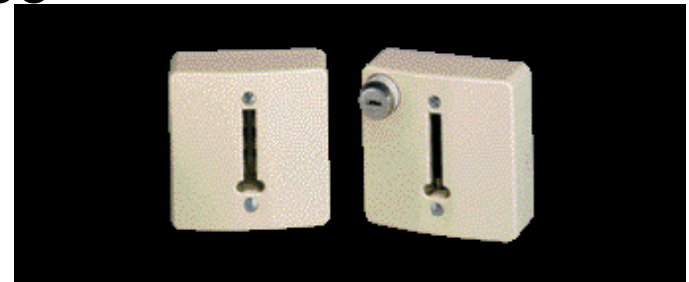
**France Telecom Network Standardisation MAnager**

**Chairman CENELEC / TC 215 & ETSI / AT-I**



# Yesterday

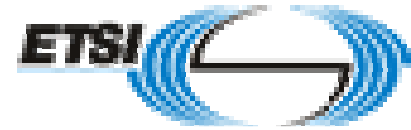
- **Cabling & Installations in the home?**
  - Existing installations limit bandwidth
  - Component characteristics were “poor”:
    - Cables were in the past for telephone
    - Sockets were insufficient and each socket assigned to a single network and service
  - Broadcast and Telecom were different from each other and from audio and video
  - Everyone could buy (bad) wires and connectors



# Today & Tomorrow

- **Installations need to push limits higher**
  - Today services launch depend on Installations
  - Cables need at least to support 100 MHz
  - Sockets need to be many more ('no' extension) and programmable (flexible assignment)
  - **Triple Play and home applications** have to share a common physical support depending on user



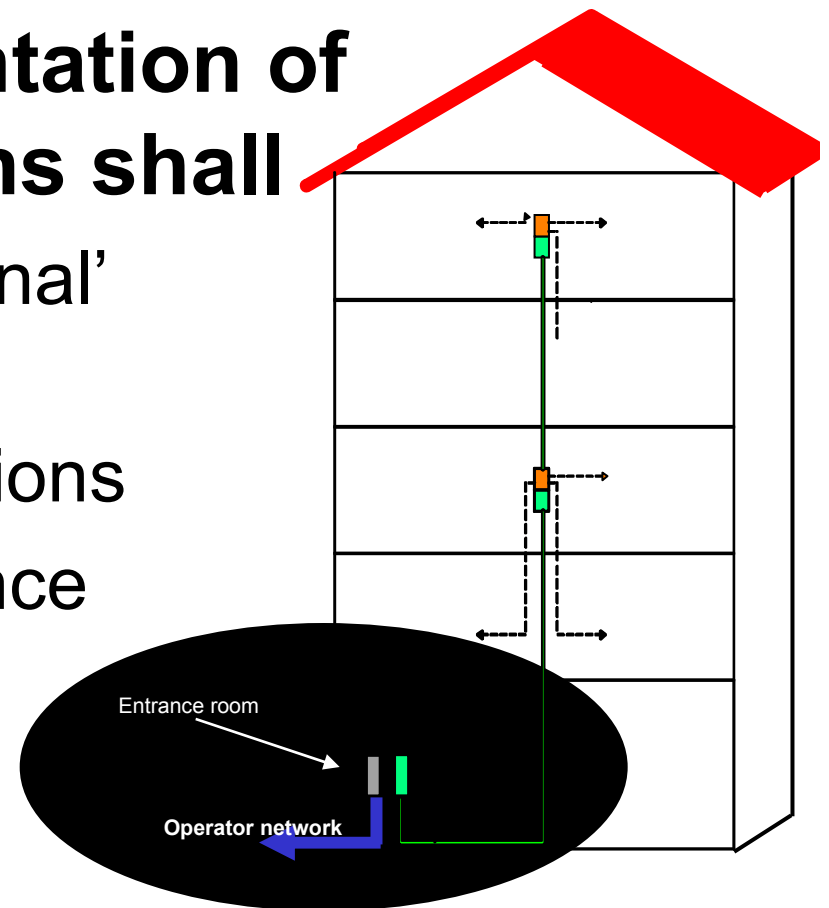


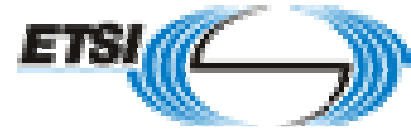
# Three markets

- **New buildings need new standards**
- **Building renovation need new standards**
- **Do-it-yourself market need solutions**

# Three markets

- **In all cases implementation of standardised solutions shall**
  - Provide easy ‘professional’ solutions
  - Limit user impairing actions
  - Be supported by guidance to users covering from the installations to service aspects



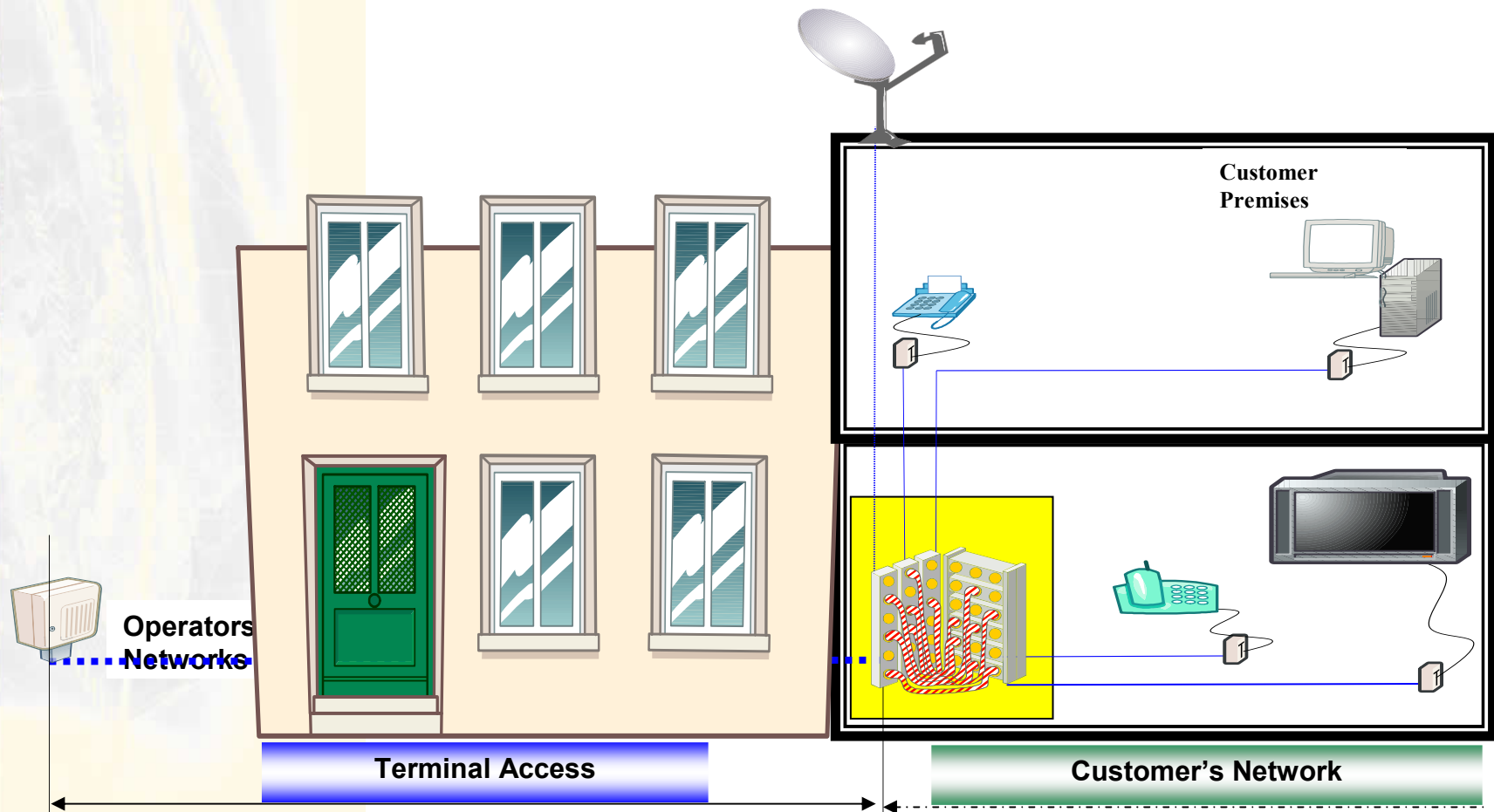


# Three markets

- Typical residential applications provide by standardised solutions

Application	Copp. Sol. 1	Copp. Sol. 2	Copp. Sol. 3	Optic. Sol. 4
Telephone (analogue)	● ● ●	● ● ●	● ● ●	⊘
Digital telephone (ISDN) & Internet	● ● ●	● ● ●	● ● ●	IP
Broadband Internet	● ● ●	● ● ●	● ● ●	● ● ●
Local residential network up to 100 Mbit/s	● ●	● ● ●	● ● ●	● ● ●
Digital television & audio programs via telecom line	●	● ●	● ● ●	● ● ●
Local residential network up to Gigabit/s	⊘	● ●	● ● ●	● ● ●
Analogue & digital terrestrial television (VHF/UHF)	⊘	●	● ● ●	● ● ●

# Basic solution development



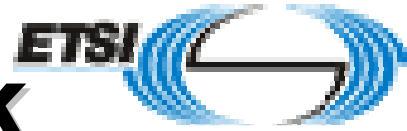


# Basic solution development

- **1st step: Decision**
  - **Optical** for very high long term requests  
or
  - **Balanced twisted copper pair**
- **2nd step: Planning**
  - Which service to be carried to which room
  - Where to install the home gateway devices
  - How to implement customer network

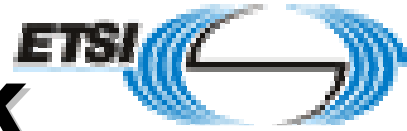


# Customer network implementation

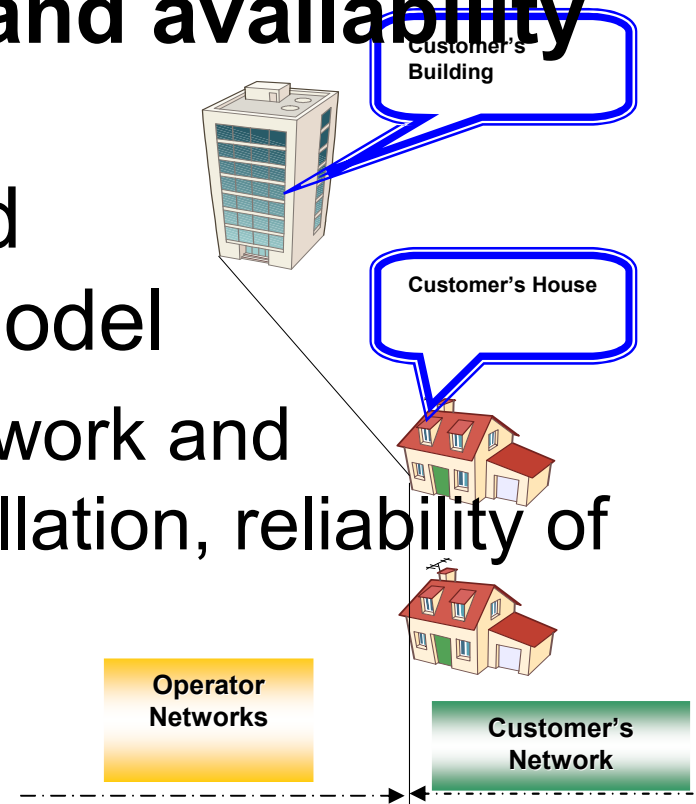


- **Communication networks development**
  - **Communication networks development** should improve **quality and safety of supported services**, consequently some important hardware related aspects should be taken into account
- **Focus on user's needs**
  - User is requesting highly available (24 hours/7 days) services of high/very high data rates (10 to 100 Mbit/s) delivering real-time multimedia data streams
  - Proportion of broadband traffic required by the individual user (subscriber) is growing very quickly

# Customer network implementation



- Aspects of “quality of service” that are related to performance and availability of the physical network infrastructure not covered by the ISO/OSI 7 layer model
  - e.g. the passive cable network and associated quality of installation, reliability of operation etc.



# Customer network implementation

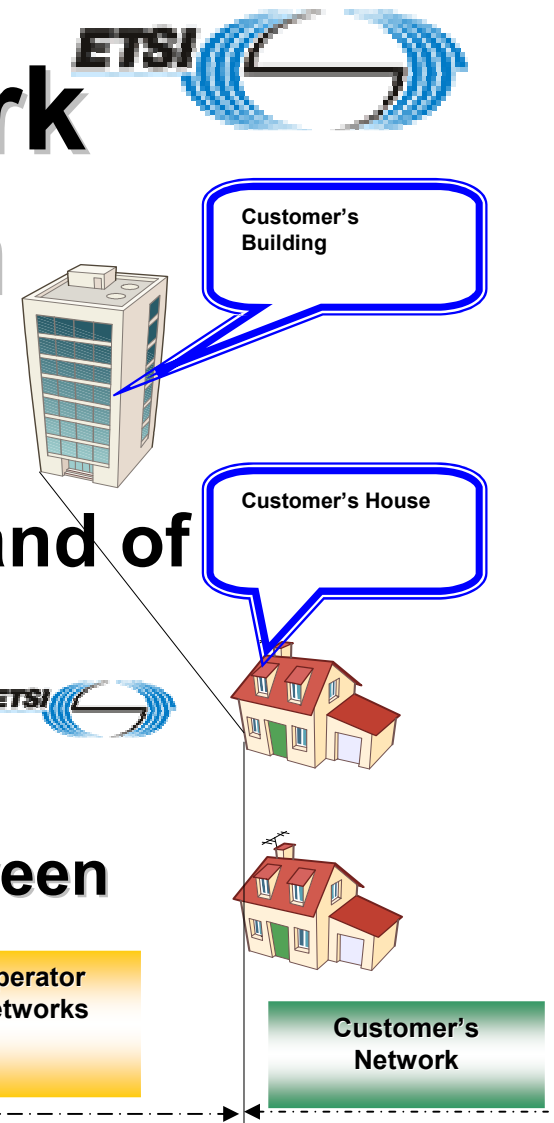
- Installations & Cabling of Residential solutions

ETSI/AT-I Committee, armed hand of European Co-ordination Group between **CENELEC** & **ETSI** studies best standardised issues

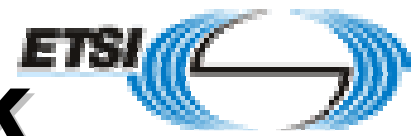
- Series ETSI TR Relationship between installations, cabling and communications systems

- Taken into account

- ITU, ISO/IEC, ETSI & CENELEC documents
- EC Directives as Access Directive 2002/19...

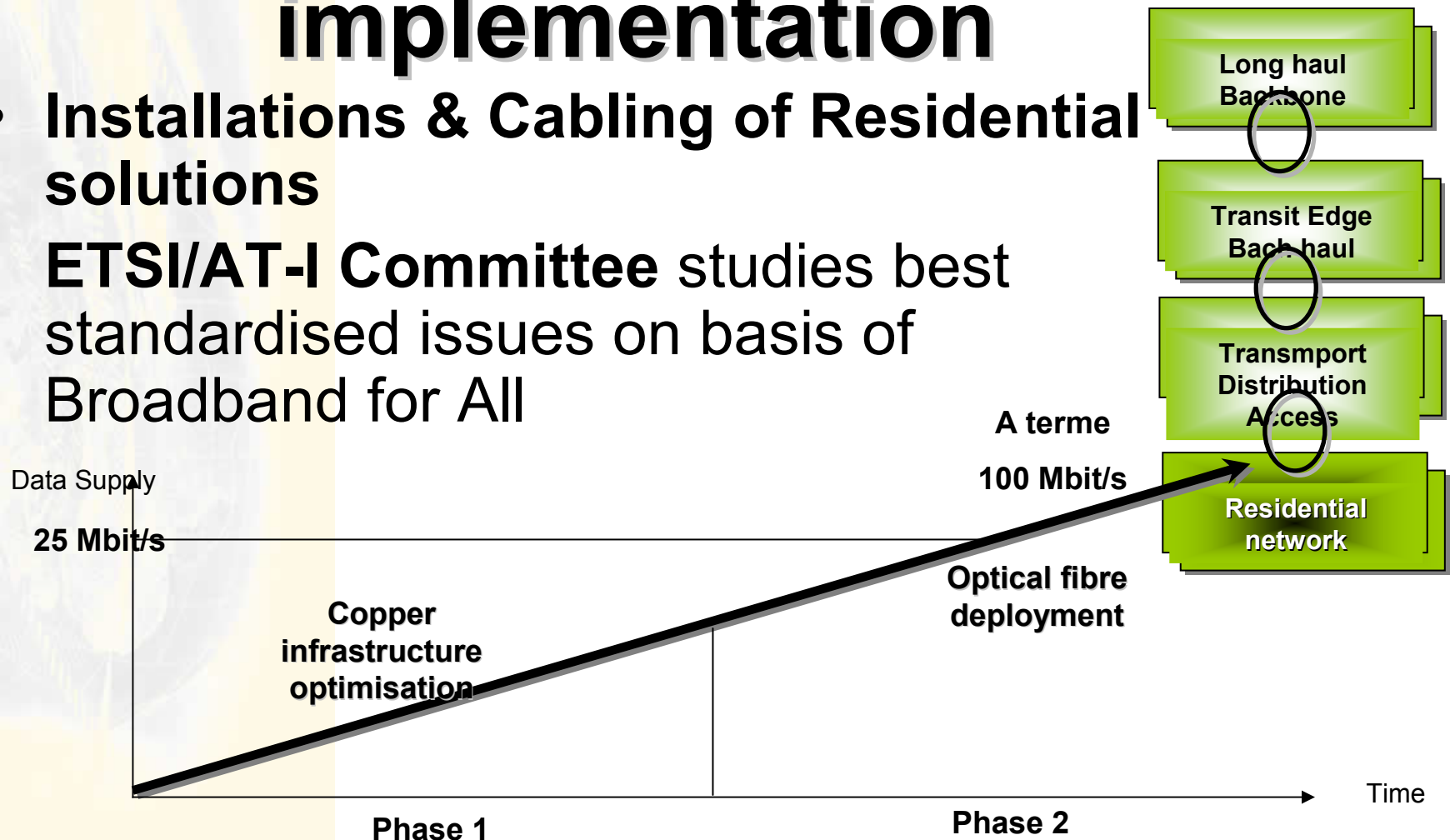


# Customer network implementation



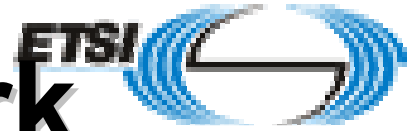
- Installations & Cabling of Residential solutions

ETSI/AT-I Committee studies best standardised issues on basis of Broadband for All



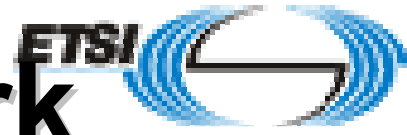
– Residential network supports broadband services

# Customer network implementation



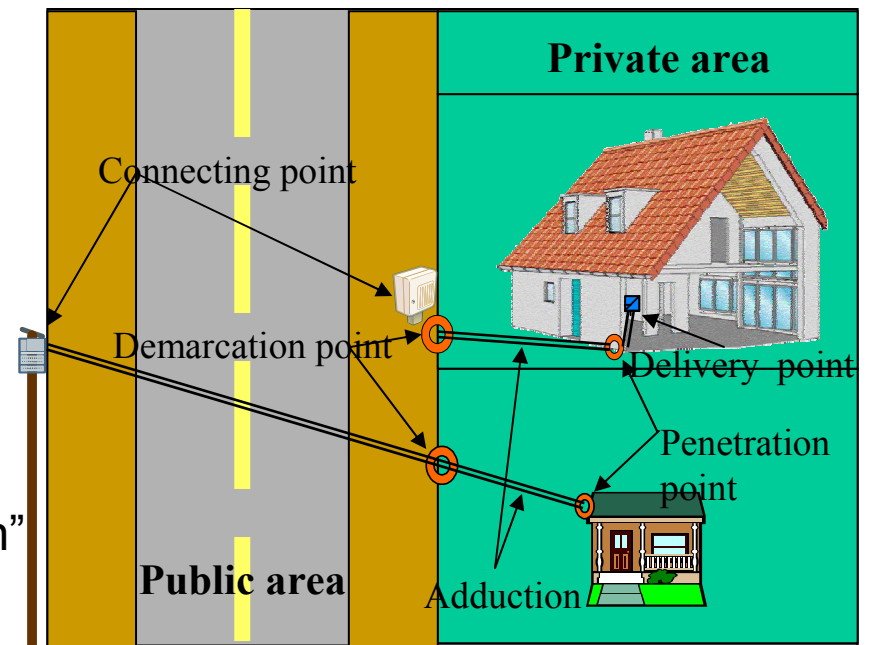
- **Installations & Cabling of Residential solutions  
CLC/TC 215 Committee  
develops Installations & Cabling EN**
  - Topology and minimum (physical) transmission characteristics of such cable networks are specified in the CENELEC standards
    - Series EN 50173 “Information technology – Generic cabling systems”
  - In addition, the proper measurement techniques to be followed to demonstrate compliance of an installation with the transmission specifications of EN 50173 is specified in the CENELEC standard
    - EN 50346 “Information technology - Cabling installation - Testing of installed cabling”

# Customer network implementation



- **Installations & Cabling of Residential solutions**

- Customers networks should be properly implemented
- Installation aspects of cable networks and related infrastructure are specified in CENELEC standards of
  - Series EN 50174 “Information technology - Cabling installation”
  - EN 50310 “Information technology - Application of equipotential bonding and earthing in buildings with information technology equipment”





# Wiring & radio competition?

- **Radio is always easier to install**
- **But typically bandwidth limited... and service safety too...**

## **So trends are to use radio for mobility**

- As an interim solution
- As a HomeNet complement/ supplement, e.g.
  - to synchronise the mobile agenda/phone
  - to synchronise your car-network every evening
  - extend the HomeNet to a unforeseen area



