Bundesnetzagentur

Views of German Administration

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CEPT Workshop on Machine-To-Machine Communications
Mainz, 22.03.2016

What is M2M communication?

Machine to machine refers to direct communication between devices using any communications channel, including wired and wireless. (Wikipedia)

→ Let´s focus on the wireless side

What is M2M communication?

Spectrum management perspective

Mobile/Land mobile

- Mobile/Fixed Communications Networks (MFCN)
- Public Access Mobile Radio (PAMR)
- Private/Professional Mobile Radio (PMR)

Short Range Devices (SRDs)

- Non-specific Short Range Devices
- Radio Frequency Identification (RFID)
- Radio Local Area Network (RLANs)
- …

What is M2M communication?

User perspective

Industrial applications

- "Internet of Things"
- Automation
- …

Consumer related

- "Smart home"
- …

Additional requirements?

User perspective

Industrial applications

- Requiered level of protection
- Latency
- …

Consumer related

- "Plug & play"
- …

What are the spectrum requirements?

Harmonised bands

What does harmonisation mean?

Harmonisation in CEPT vs. **National flexibility**

- Not binding
- Common technical level
- Good starting point for harmonisation on ITU level

How to respond to spectrum requirements?

Consult the existing regulation:

- National **frequency table / plan**
  http://www.cept.org/eco/eco-tools-and-services/efis-eco-frequency-information-system/national-frequency-tables
- EFIS http://www.efis.dk

Solveable within an existing **general authorisation**?

- WLAN: 2400,0-2483,5, 5150-5350, 5470-5725 MHz
- Multiple Gigabit WAS/RLAN Systems (MGWS): 57-66 GHz
- RFID: 865– 868 MHz, 2446- 2454 MHz
- SRD: several bands
- …

http://www.bundesnetzagentur.de/cln_1422/DE/Sachgebiete/Telekommunikation/Unternehmen_Institutionen/Frequenzen/Allgemeinzuteilungen/allgemeinzuteilungen-node.html

If not:

An **individual authorisation** is required

How to respond to spectrum requirements?

*if not limited to the German market

What can be done from the applicants side?

- **Consider whether wireless is the best option**
  - No frequency is free from interference !

- **Aim for efficient use of spectrum**
  - Bundle interests amongst similar use cases and user groups
  - Choose future-proove technologies

- **Be Flexible!**
  Other frequency options = Eased harmonisation / access

Conclusions

- **Harmonised bands** / Harmonisation decisions
  - Mobile / Land mobile bands
  - SRD bands

- **General authorisations** (where possible)
  - Fast availability, but non-protection basis
  - Differentiation needs time!

- **Individual authorisations**
  - Only when required

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