



**Riga Technical University**  
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**Section “Telecommunications”**



# Evaluation of 700 MHz band use for Land Mobile Service

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# Outline of the presentation



- Aim and motivation of the research
- Main idea and objectives of the research
- Previous studies
- Present results of the research
- Planned studies
- Conclusions

# Aim and motivation of the research



- Increased demand of consumers on services in the mobile environment with high data rate and technologically developed mobile broadband communication systems (**IMT**) will require more spectrum to be available in the future. The new technologies as well as the existing services require frequencies for their development.
- The 694-790 MHz (**700 MHz**) band was allocated by World Radiocommunication Conference 2012 (WRC-12) in ITU Region 1, which includes also Europe, to the **mobile service** on a co-primary basis with other services to which this band is allocated on a primary basis (broadcasting etc.) and was identified for IMT. The allocation is effective immediately after WRC-15.

# Main idea and objectives of the research

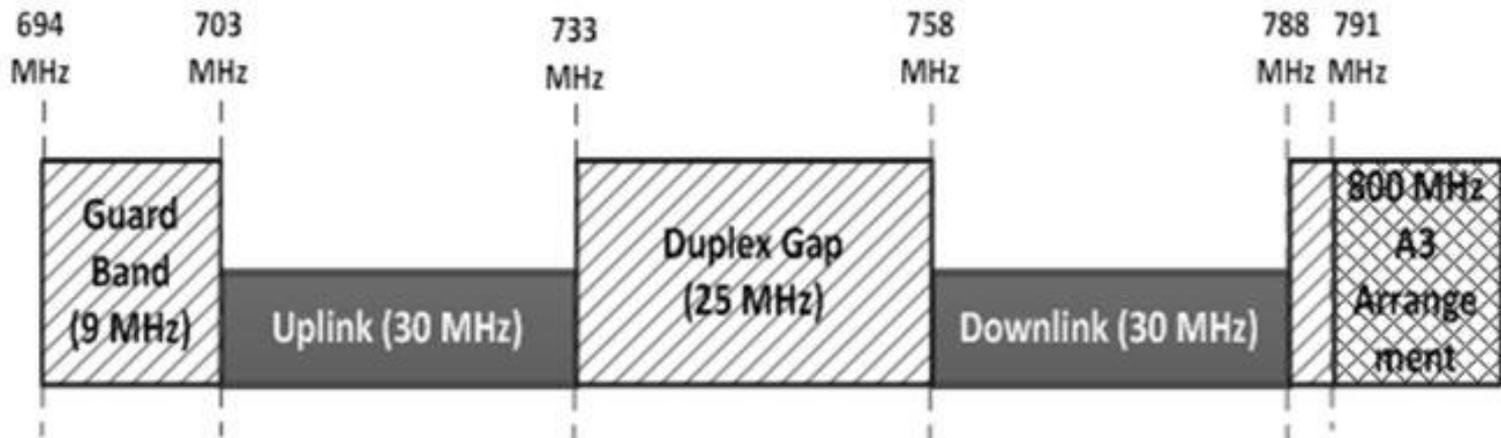


- 700 MHz band can be putted into use for land mobile service only when all necessary electromagnetic compatibility / frequency sharing studies are completed and technical conditions of use of frequencies determined.
- In the framework of the research a particular attention will be paid to the evaluation of perspective use of the 700 MHz band by land mobile service in Latvia.

# Previous studies



- Electromagnetic compatibility and frequency sharing studies were carried out within ITU. Obtained results are general and in some cases diverse.
- Development of technical conditions of use of the 700 MHz band by land mobile service in Europe are performed within CEPT.
- Developed baseline 700 MHz band plan, national options of use of the band should be determined.



# Present results of the research



- Performed work:
  - studied questions related to spectrum management
  - investigated the available and possible future land mobile frequency bands worldwide and in Europe
  - analyzed different possible 700 MHz frequency arrangement options
- Prepared publications:
  - *Spectrum Usage in Mobile Broadband Communication Systems* (2013) – Latvian Journal of Physics and Technical Sciences
  - *Frequency arrangement for the 700 MHz band* (2014) – planned to submit to the Latvian Journal of Physics and Technical Sciences

# Planned studies



- Evaluation of perspective use of the 700 MHz band by land mobile service in Latvia, and impact on available spectrum for TV broadcasting service and PMSE
- Assessment of possible national options for use of 700 MHz band plan
- Perform electromagnetic compatibility and frequency sharing assessment between different services:
  - Mobile (IMT) vs. Broadcasting;
  - Mobile (IMT) vs. Aeronautical Radionavigation Service (ARNS);
  - Mobile (IMT) vs. Mobile
- Examine related frequency cross border coordination issues with neighboring countries

# Conclusions



- Results of the research can be used for assessment and planning of 700 MHz band frequencies use for land mobile service in Latvia.
- Possible reallocation of 700 MHz band to mobile service in Latvia should be carefully investigated taking into account also impact on available spectrum to broadcasting service and PMSE (e.g. radio microphones).
- New opportunities for development and enhancement of mobile broadband services in Latvia.



**Thank you  
for your attention!**

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