

# Group 4

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Licensing and Regulations for Ground Station Network

# AGENDA

- ▶ Sharing information and discuss about following topics
    - ▶ Use of Amateur bands
    - ▶ Radiocommunication service
    - ▶ Domestic radio regulations
    - ▶ IARU and ITU coordination
    - ▶ Possible frequency bands
  - ▶ Discuss necessary action to keep frequency allocation for SmallSat community
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# Member

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# RADIOCOMMUNICATION SERVICE

- ▶ Space Operation Service (SOS)
  - ▶ Earth exploration-satellite service (EESS)
  - ▶ Meteorological-satellite service
  - ▶ Space research service (SRS)
  - ▶ Amateur-satellite service
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# USE OF AMATEUR BANDS

IARU most strongly recommends that satellite builders asking for coordination make sure that their mission fits the definitions of the amateur services.

**RR 1.56**        *amateur service: A radiocommunication service for the purpose of self-training, intercommunication and technical investigations carried out by amateurs, that is, by duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest.*

**RR 1.57**        *amateur-satellite service: A radiocommunication service using space stations on earth satellites for the same purposes as those of the amateur service.*

# RESEARCH) DOMESTIC REGULATIONS

- ▶ Who is the radio administrator in each country?
  - ▶ Is there any domestic rules for frequency allocations?
  - ▶ Is there any domestic rules for radio licensing?
  - ▶ Information opened?
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# Amateur Frequency in UK

OfCOM

430 – 440 MHz

- FIXED / MOBILE
- Amateur-satellite / Amateur 5.138, 5.282
- Footnote: UK 2.1 UK 1.1.1 UK 1.1.2
- e.g. UK2.1: Responsibility for granting permissions to use frequencies in this Allocation rests with Defence. All frequency permissions are reserved exclusively for Defence use except where assignments for Civil use are agreed with Ofcom.

# Amateur Frequency in Italy

436-438

- Amateur-satellite by **Ministry of Economical Department**
- Radio location by **Ministry of Defence**



# Amateur Frequency in India

Ministry of Communications and Information Technology

Department of Telecommunications

430 - 440

- FIXED / MOBILE except aeronautical mobile S5.276 (Not Specified in ITU)
- SPACE OPERATION ( Earth to space) S5.281
- Amateur S5.282
- Footnote: IND 03, IND 05 IND 29

# Fee structure

- Japan
  - 190,300 JPY ~ 187,441,400 JPY (Satellite)
  - Amateur / Experimental 300 JPY
- Italy
- India
  - 500 rupees
- UK
  - A fee is required
  - Depends on frequency range, power etc

# Who needs to apply for license?

Every radio emitting device will be required a license, at least under Japanese and US legislations. Probably true for most other countries as well.

**If you operate a satellite with an antenna from Third Party GS Provider?** In this case, you'll most likely need a license for your satellite, and the Third Party will apply for the ground station license.

# Issues pertaining to Satellite Frequency

- Due to pressure from other lobbying groups (e.g. NOAA) several restrictions are being imposed on frequencies allocated to SatComm.
  - Restrictions on Transmission power for frequencies such as 401 ~ 403
  - Possibility of such restrictions being imposed on other bands.

# Making Cubesat community's voice heard in ITU

- Need to communicate with ITU the need for frequencies allocated for Satellite Operations to be protected, via each country's radio authority.
- Suggested Action Item:
  - List of Universities and entities who would like to use those frequencies.
  - Demonstrating technical feasibility of sharing narrow frequency among many satellites.
  - Next ITU working Party Meetings (TBD) : Feb ~ March 2018, June ~ July 2018.