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TECHNOLOGIES

## CBRS By the Numbers

*Pierre-Jean Muller*

# CBRS By the Numbers

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**Reference FAD (Full Activity Dump) Date:** 15 October 2024.

- The data does not yet reflect the impact of *CBRS 2.0*, which may take until next year to manifest significantly.
- The data available for analysis is restricted to those exchanged between SASs, as outlined in the Wireless Innovation Forum's SAS-to-SAS protocol specification.

*CBRS 2.0* refers to the upgraded framework for the Citizens Broadband Radio Service (CBRS) that enhances spectrum sharing in the 3.5 GHz band.

## CBRS Registration Data included in the FAD

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- System-wide unique CBSD ID
- CBSD category (A/B)
- FCC ID
- Air interface
- Grouping parameters (can be more than one group)
- Antenna azimuth
- Antenna beamwidth
- Antenna gain
- Antenna downtilt
- Latitude, longitude
- Height (AGL/AMSL)
- Indoor (True/False)
- Measurement capability

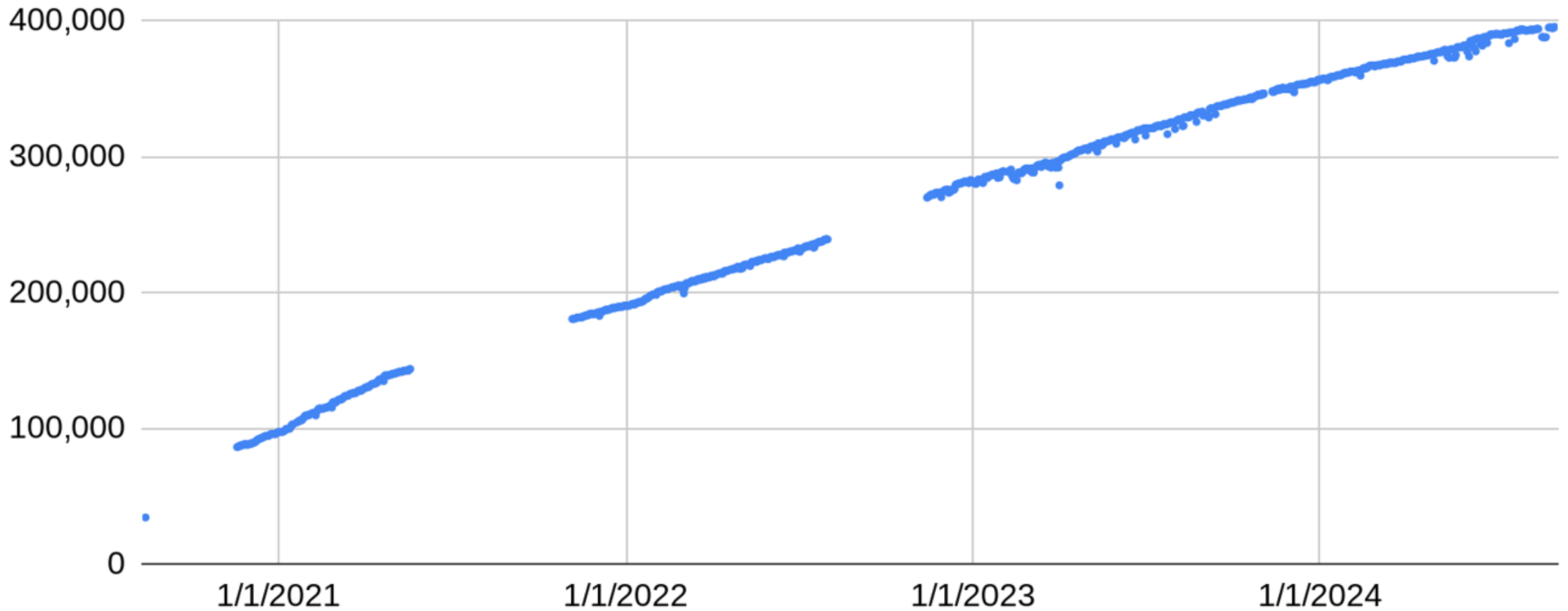
## Grant data included in the FAD

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- System-wide unique grant ID
- Channel type (GAA/PAL)
- Requested operation parameters
  - Max EIRP (dBm/MHz)
  - Frequency range
- Granted operation parameters
  - Max EIRP (dBm/MHz)
  - Frequency range
- Grant expiration datetime
- Grant terminated (True/False)

# Historical CBSD Counts - We've passed 400,000 CBSDs!

CBSDs with At Least One Active Grant



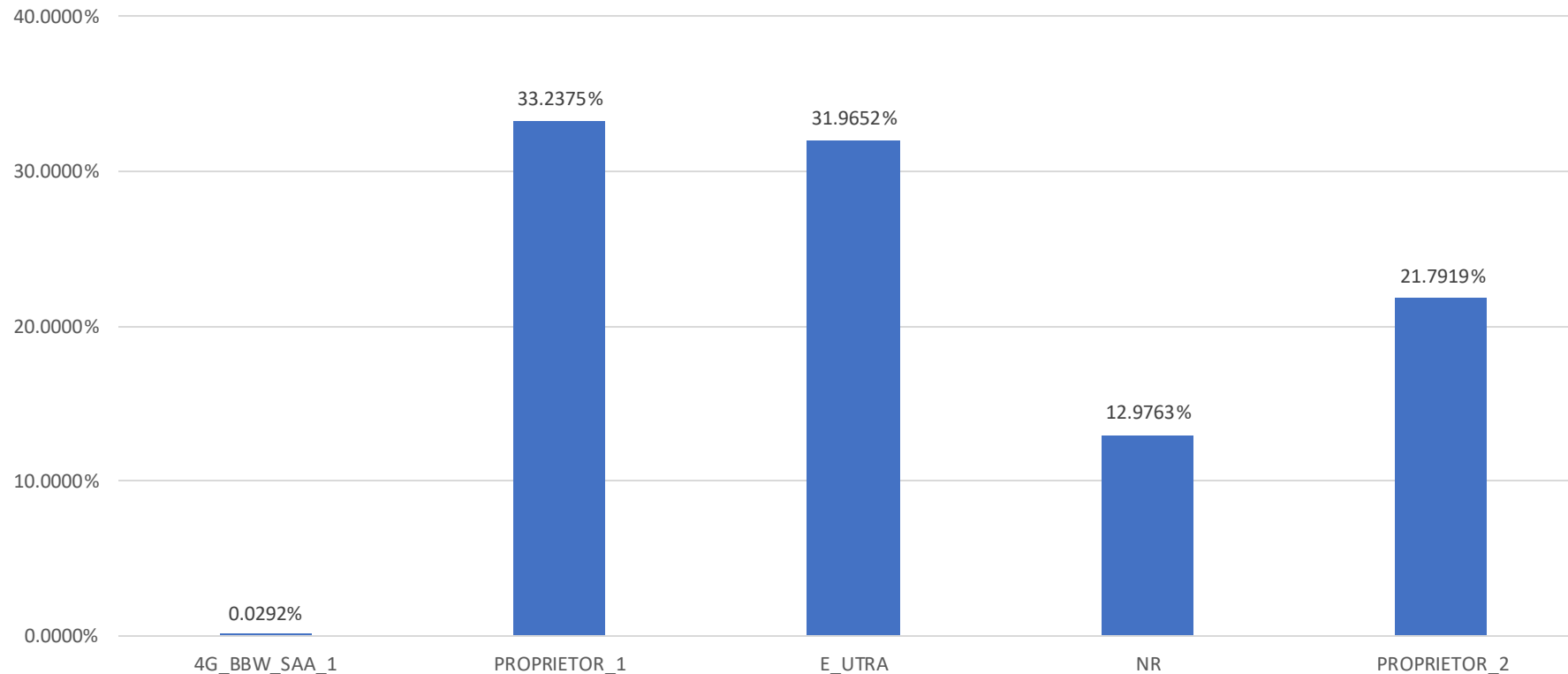
# CBSD Models and Air Interface - ecosystem

Number of different CBSD models in use (ie, different FCC ID): **154**

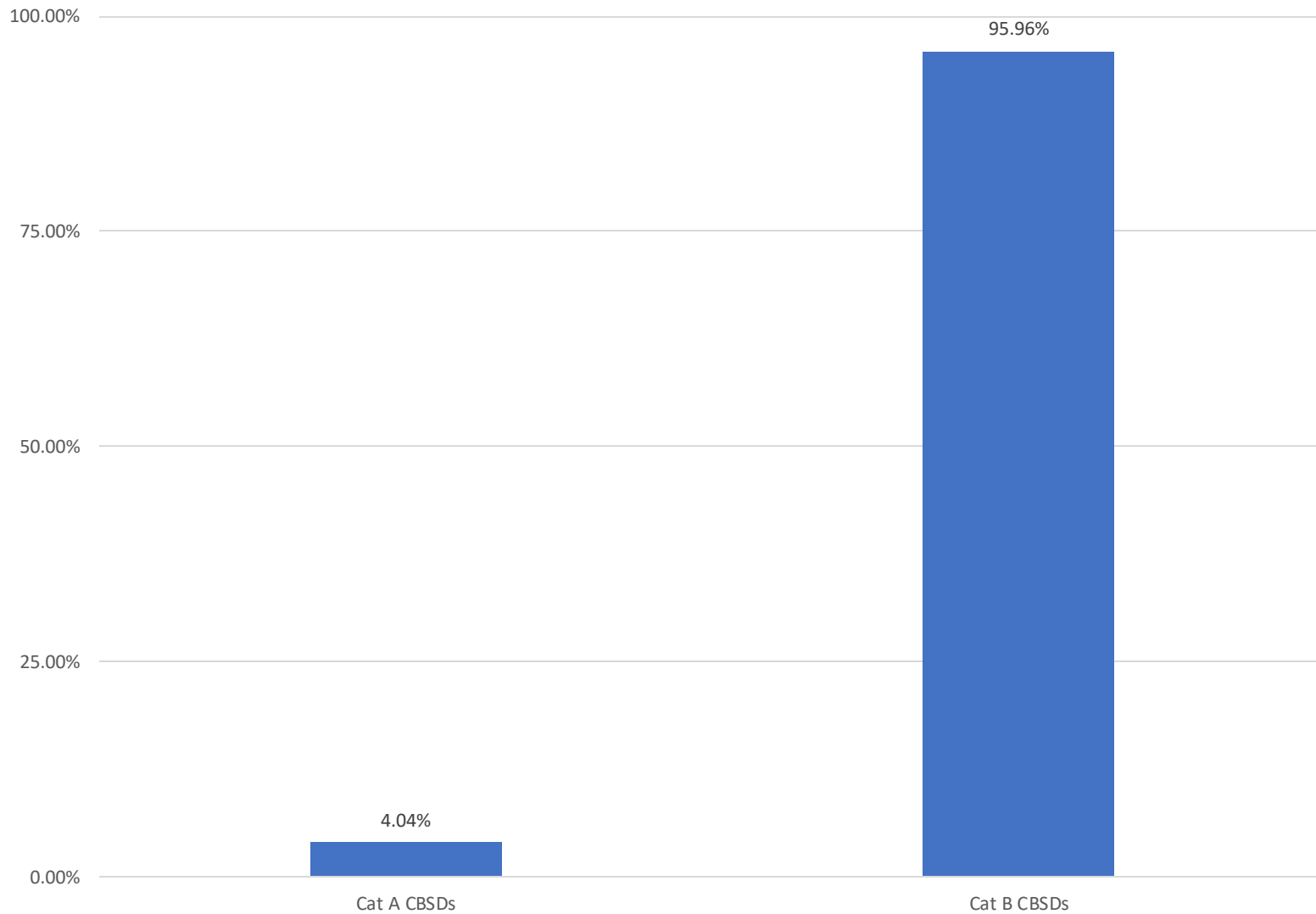
## Air Interfaces:

- Defined\* CBRS air interfaces: **9**
- In-use air interfaces: **5**
- **Largest share** of in-use air interfaces: **3GPP (E\_UTRA + NR)**

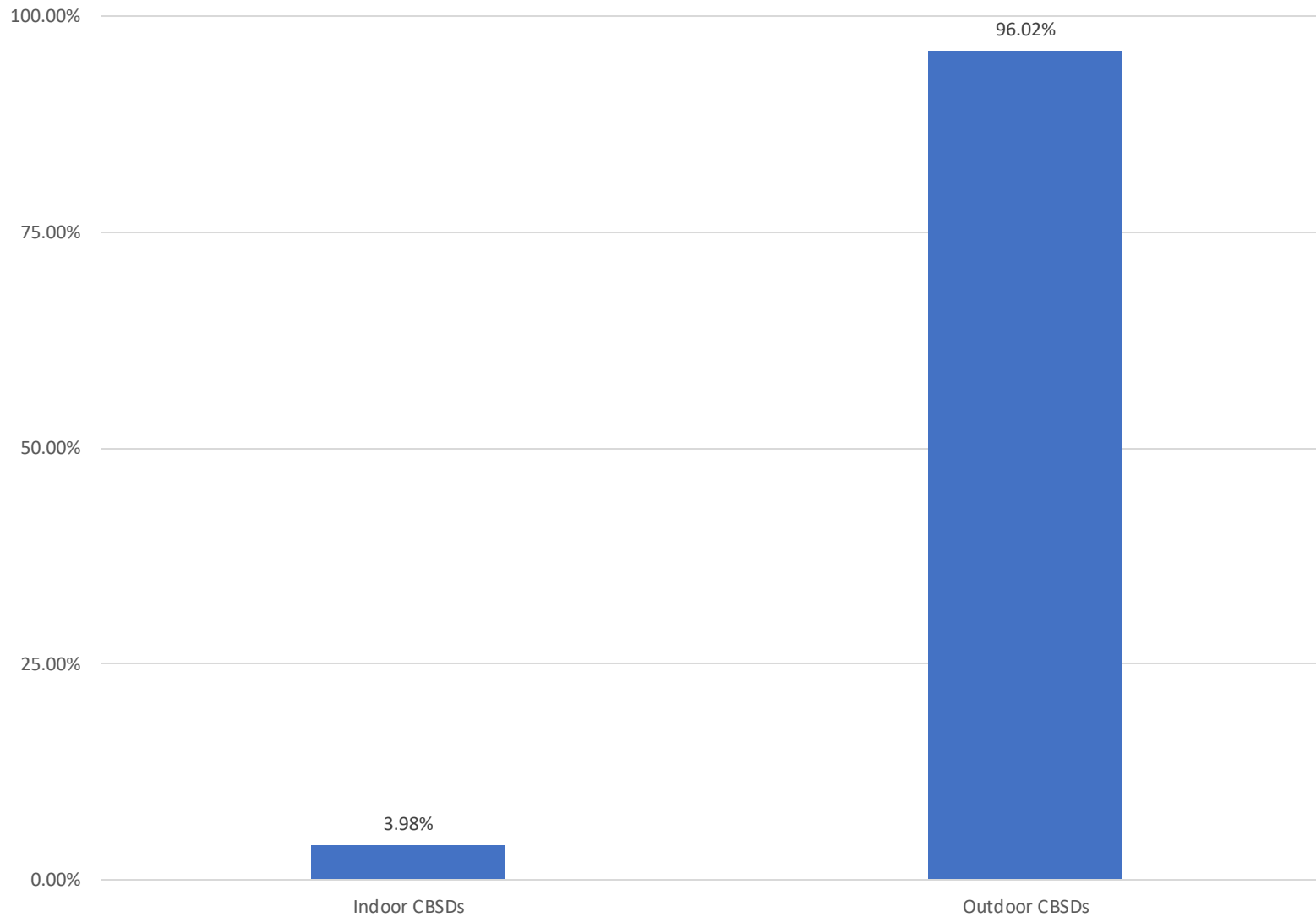
\*Wireless Innovation Forum WINNF-SSC-0002



# CBSDs by Category

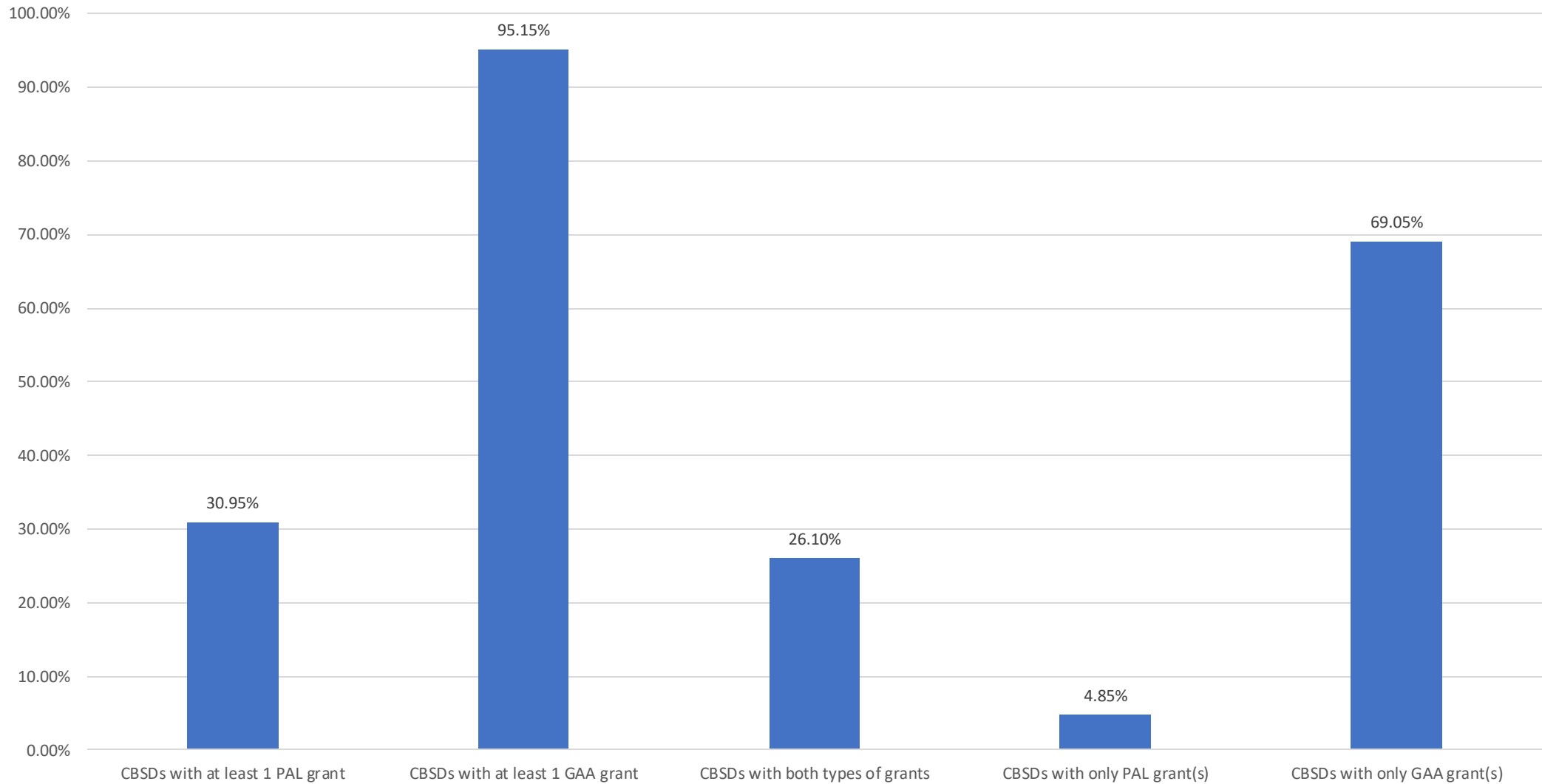


# Indoor vs Outdoor CBSDs



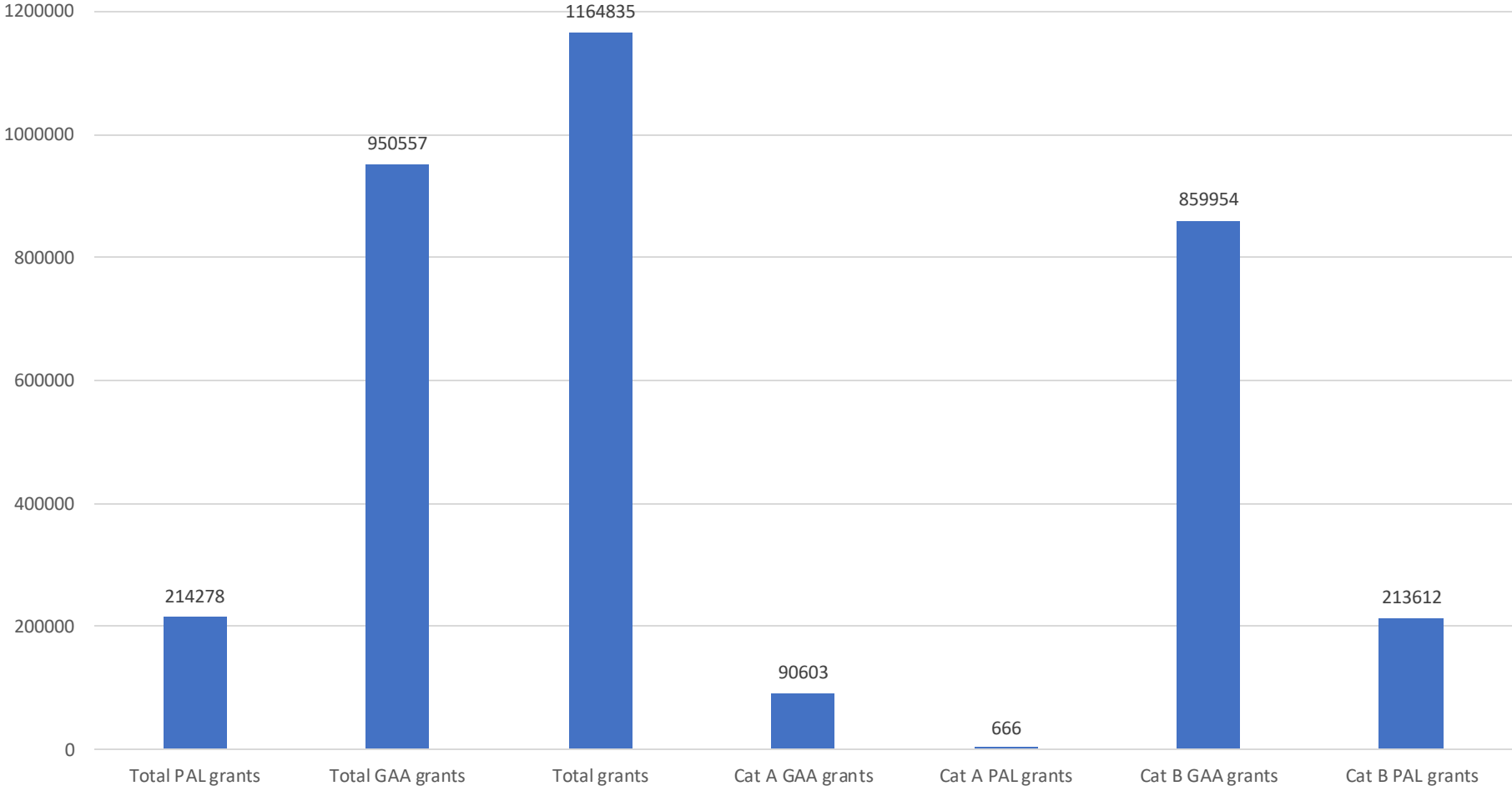


# PAL, GAA and PAL+GAA granted CBSDs



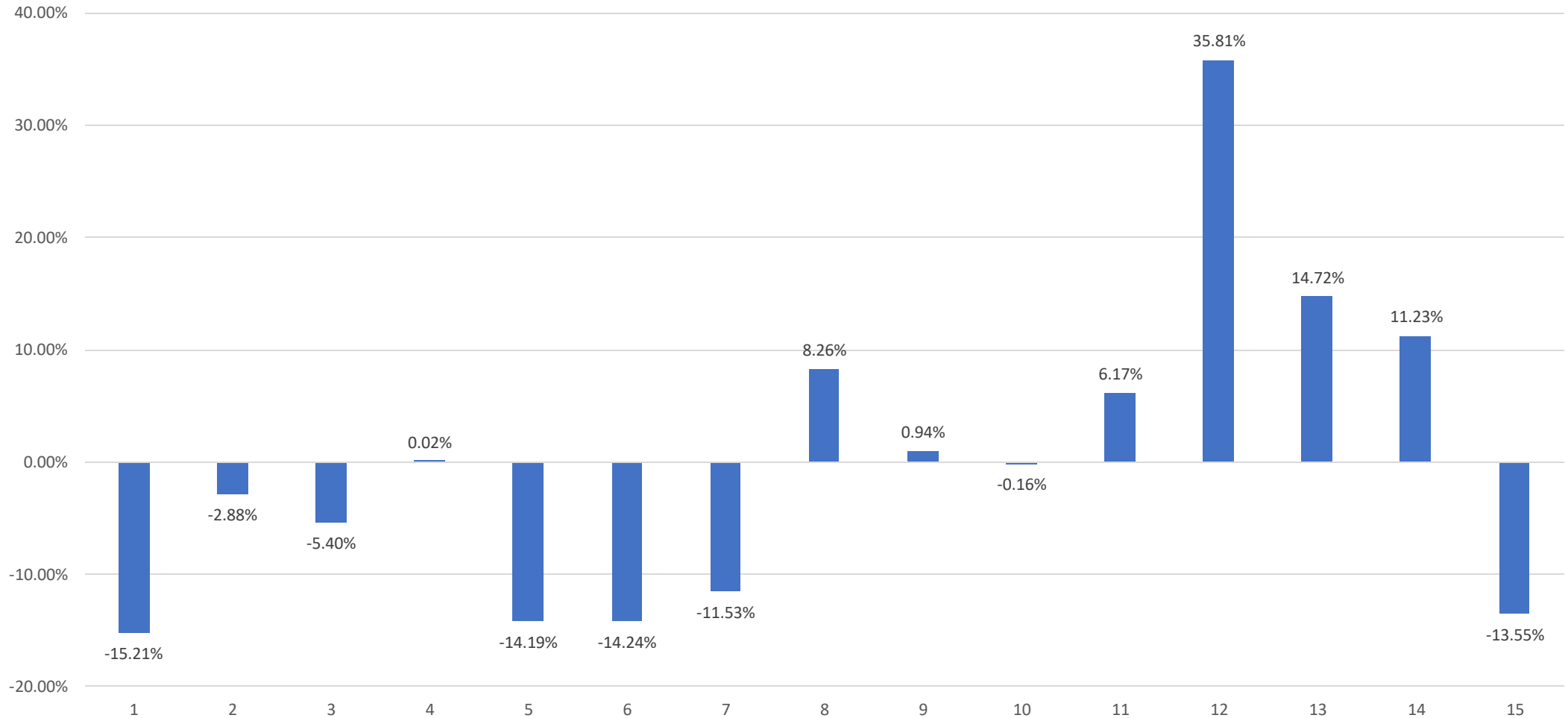
# Number of Grants Across all CBSDs

Average Grants per CBSD: 3  
Median Grants per CBSD: 2



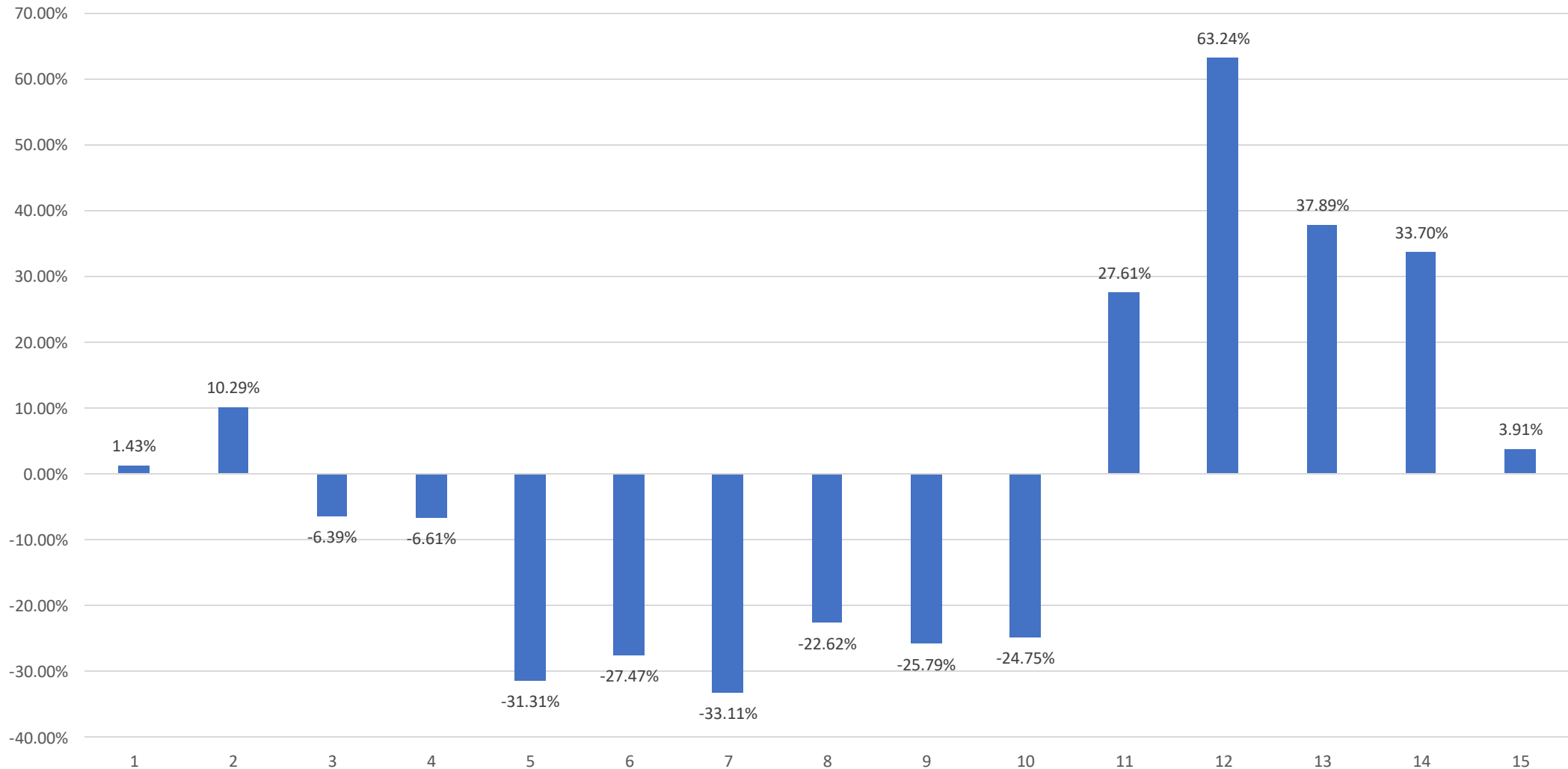
# Grants by Channel Compared to Average (PAL & GAA Grants)

Average Grants per channel: 124,793.7



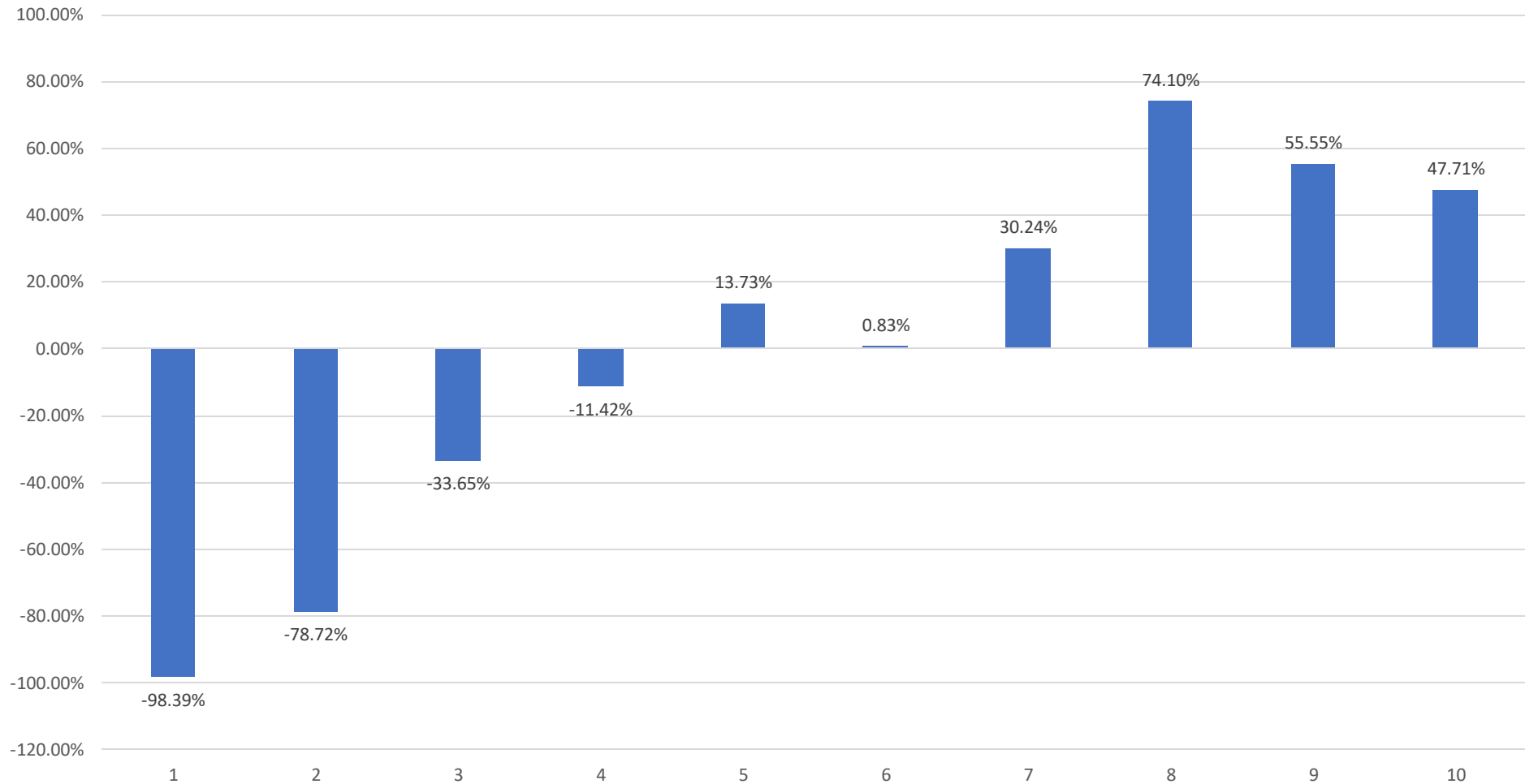
# Grants by Channel Compared to Average (GAA Grants)

Average GAA Grants per channel: 103,826

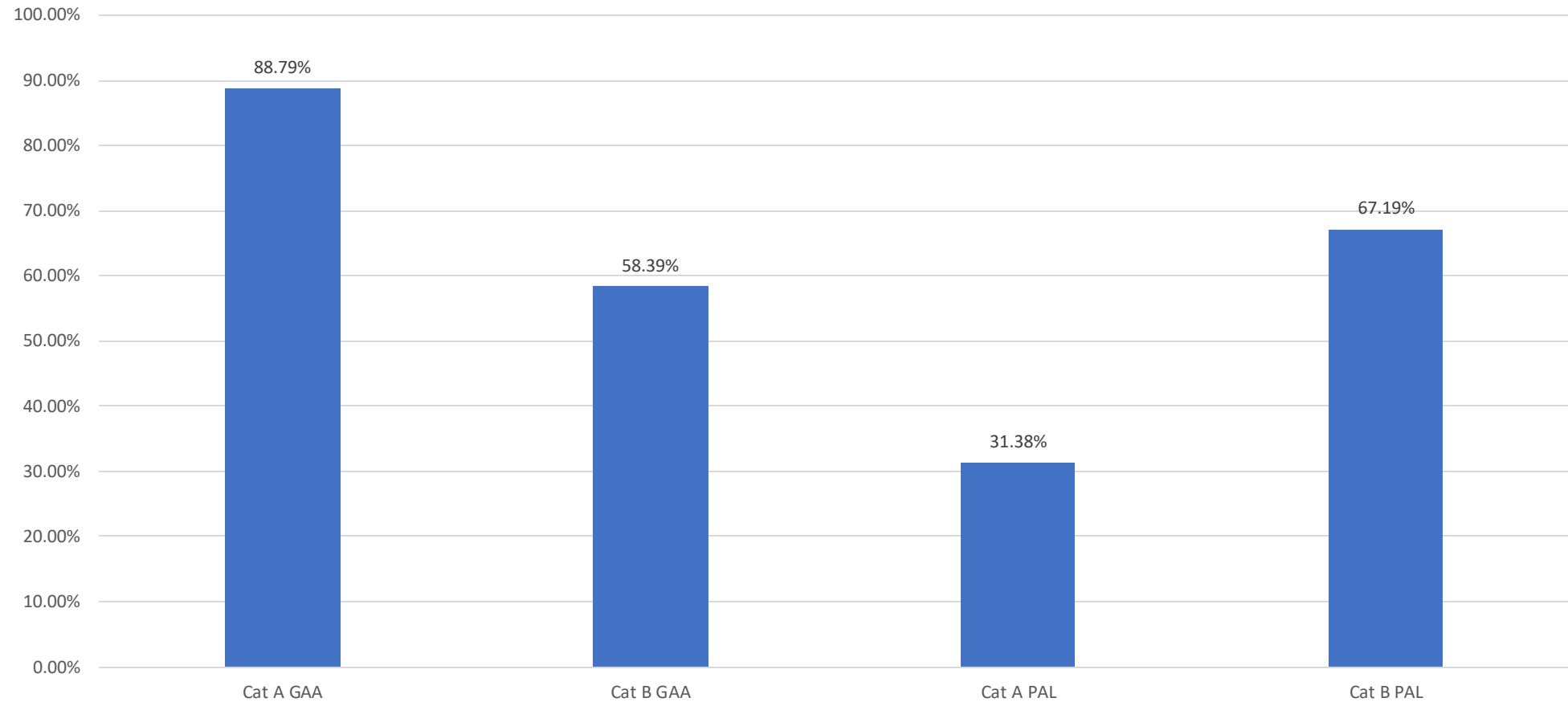


# Grants by Channel Compared to Average (PAL Grants)

Average PAL Grants per channel: 31,451.6



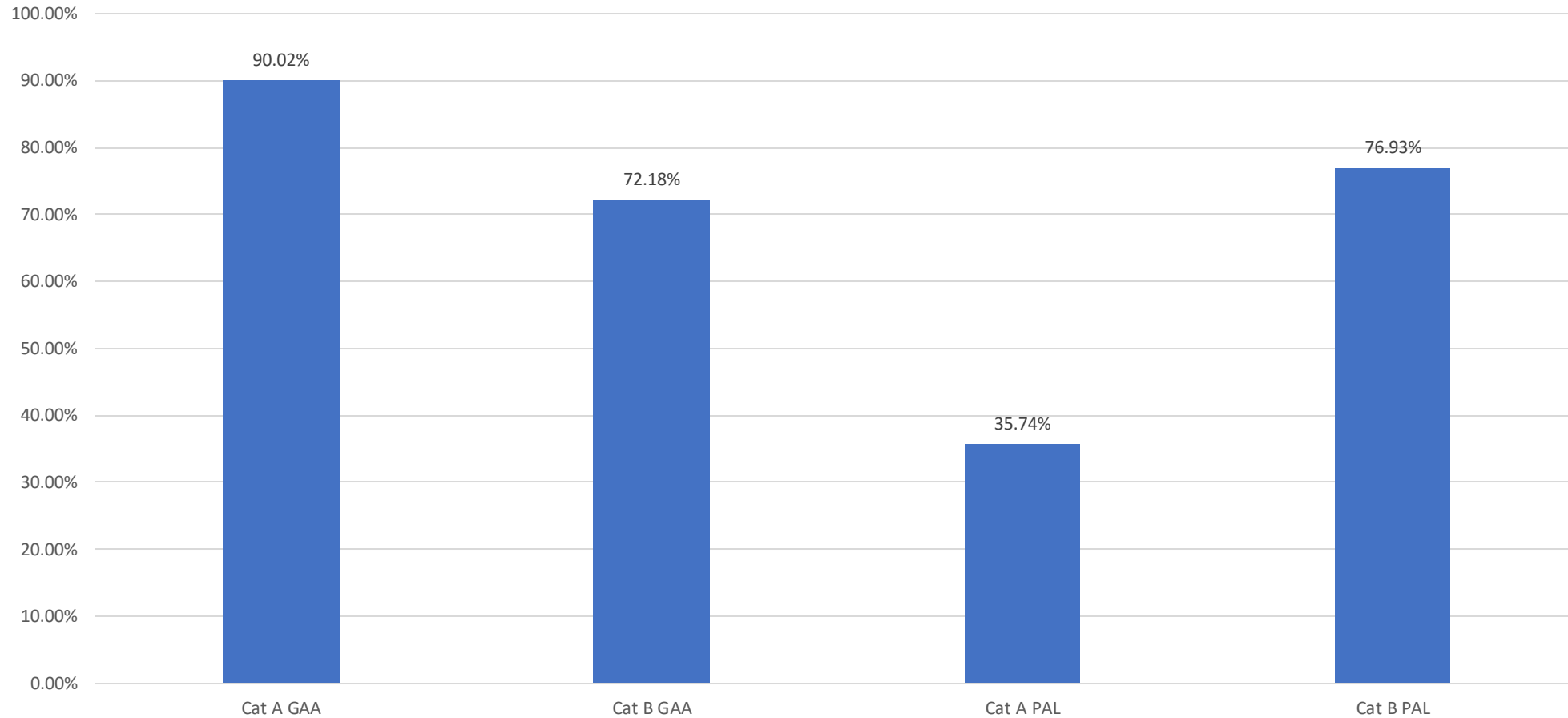
# Fraction of Grants that are within 1 dB of Full Power



From Part 96 and TS-0016, full power:

- Cat A CBSD: 20 dBm/MHz (or 30 dBm/ 10 MHz)
- Cat B CBSD: 37 dBm/MHz (or 47 dBm/ 10 MHz)

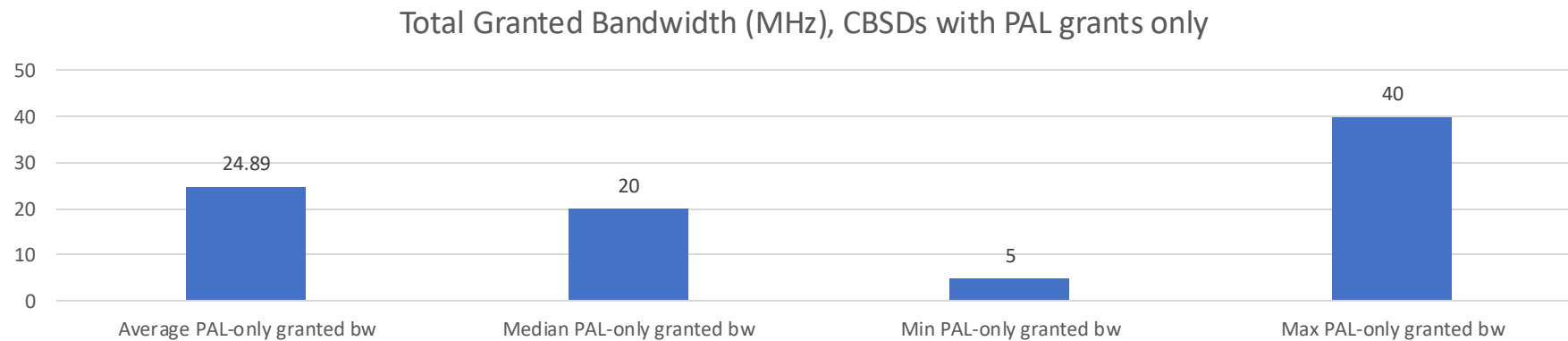
# Fraction of Grants that are within 3 dB of Full Power



From Part 96 and TS-0016, full power:

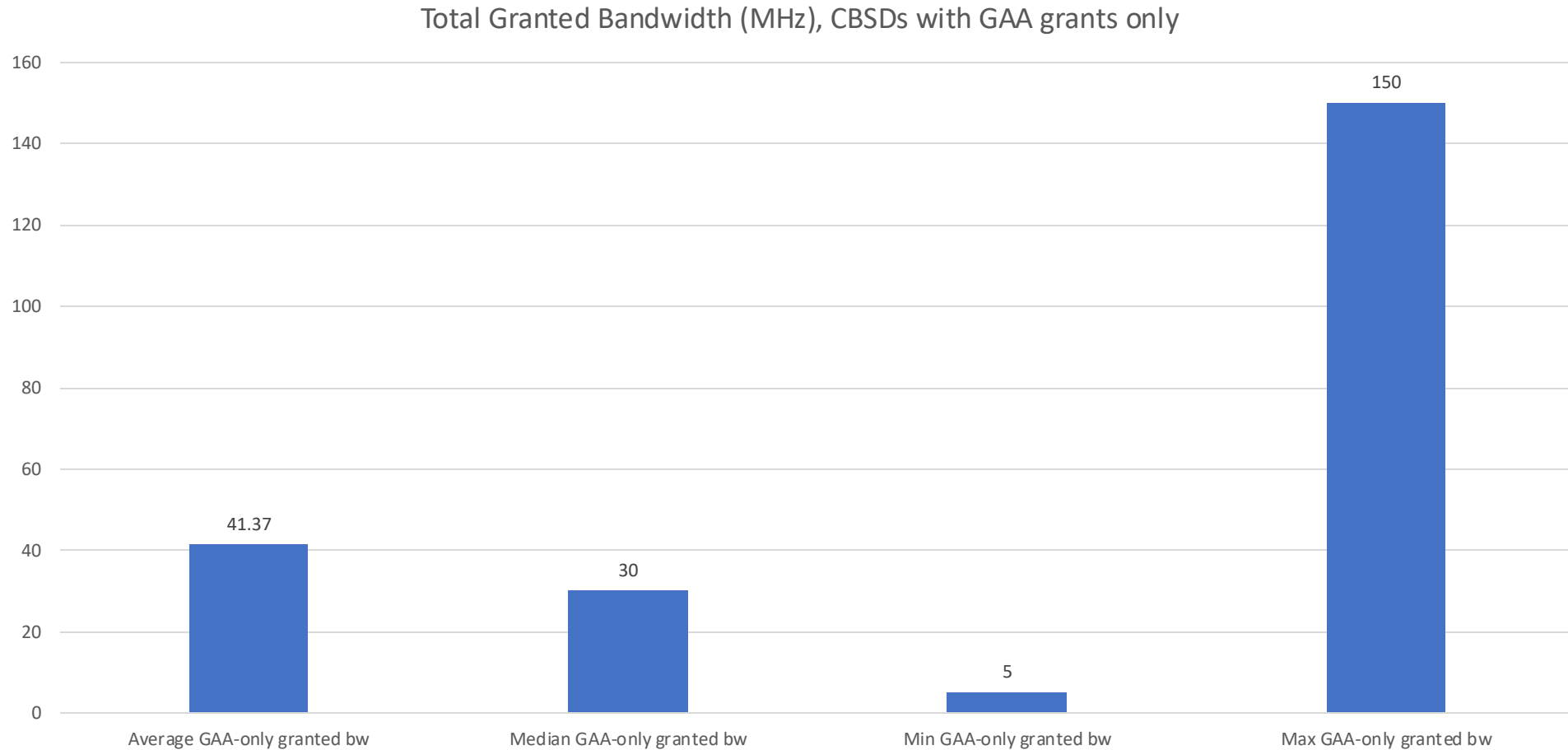
- Cat A CBSD: 20 dBm/MHz (or 30 dBm/ 10 MHz)
- Cat B CBSD: 37 dBm/MHz (or 47 dBm/ 10 MHz)

# Total Granted Bandwidth per CBSD (PAL-only CBSDs)

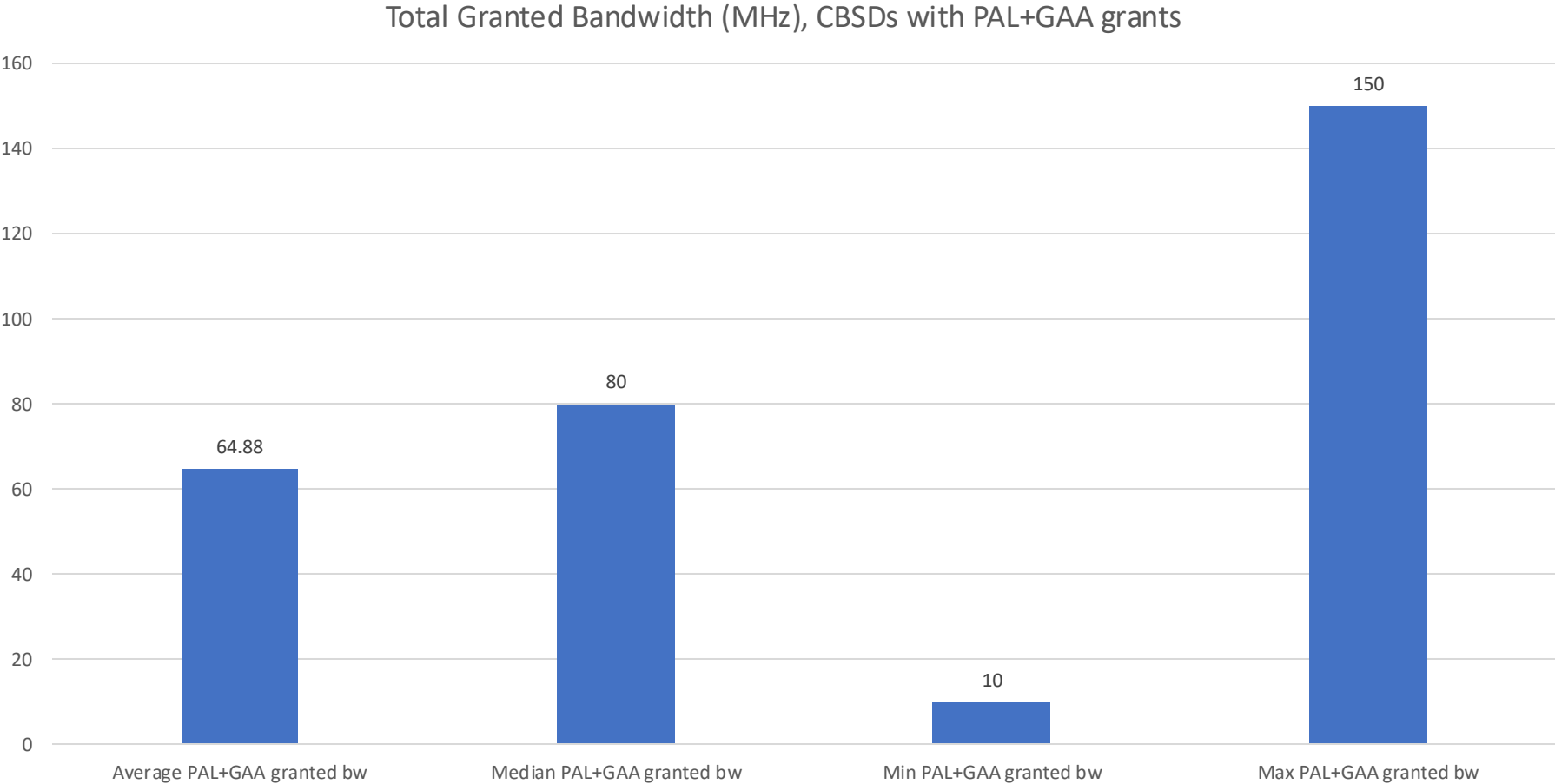




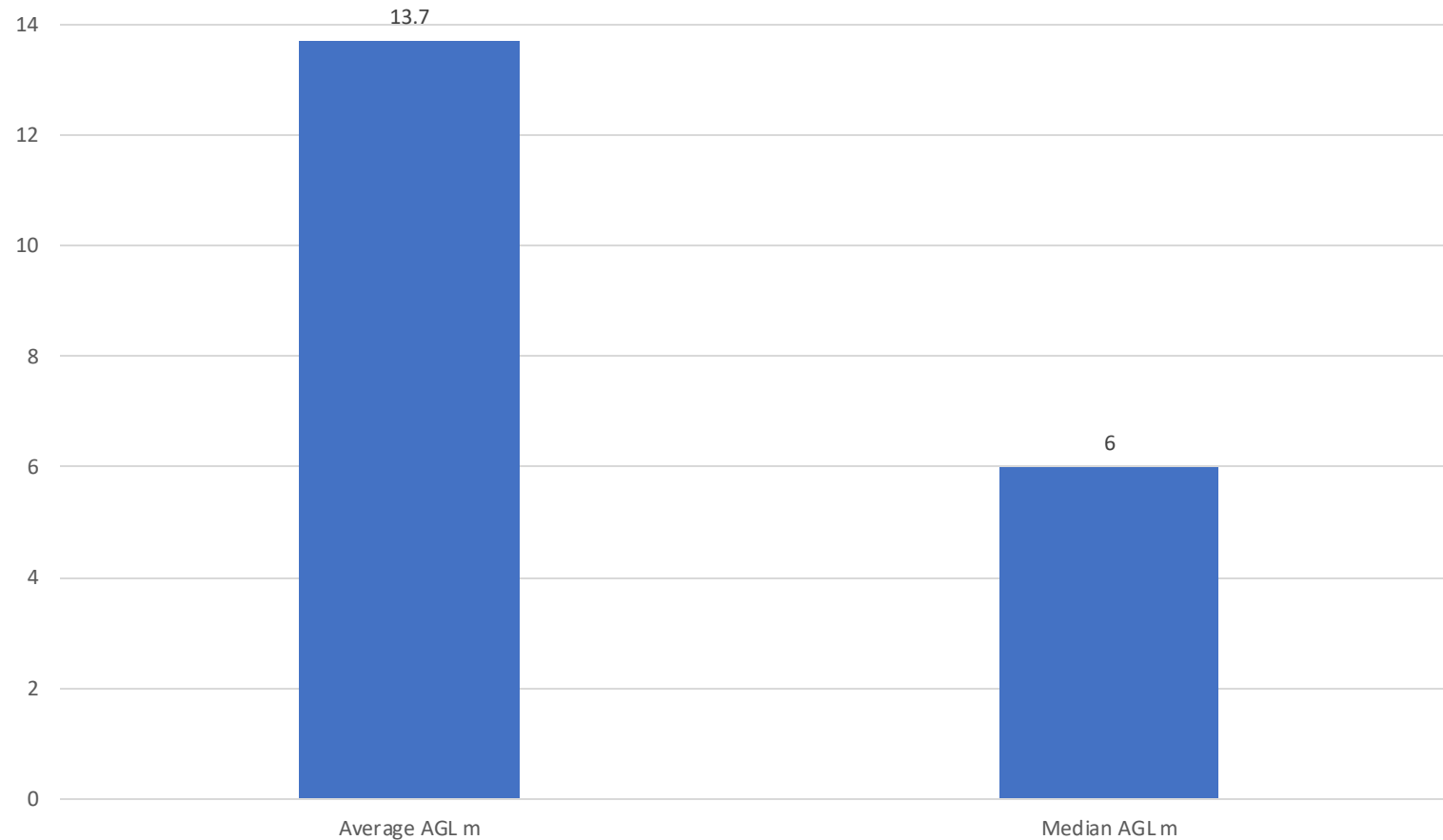
# Total Granted Bandwidth per CBSD (GAA-only CBSDs)



# Total Granted Bandwidth per CBSD (PAL+GAA CBSDs)

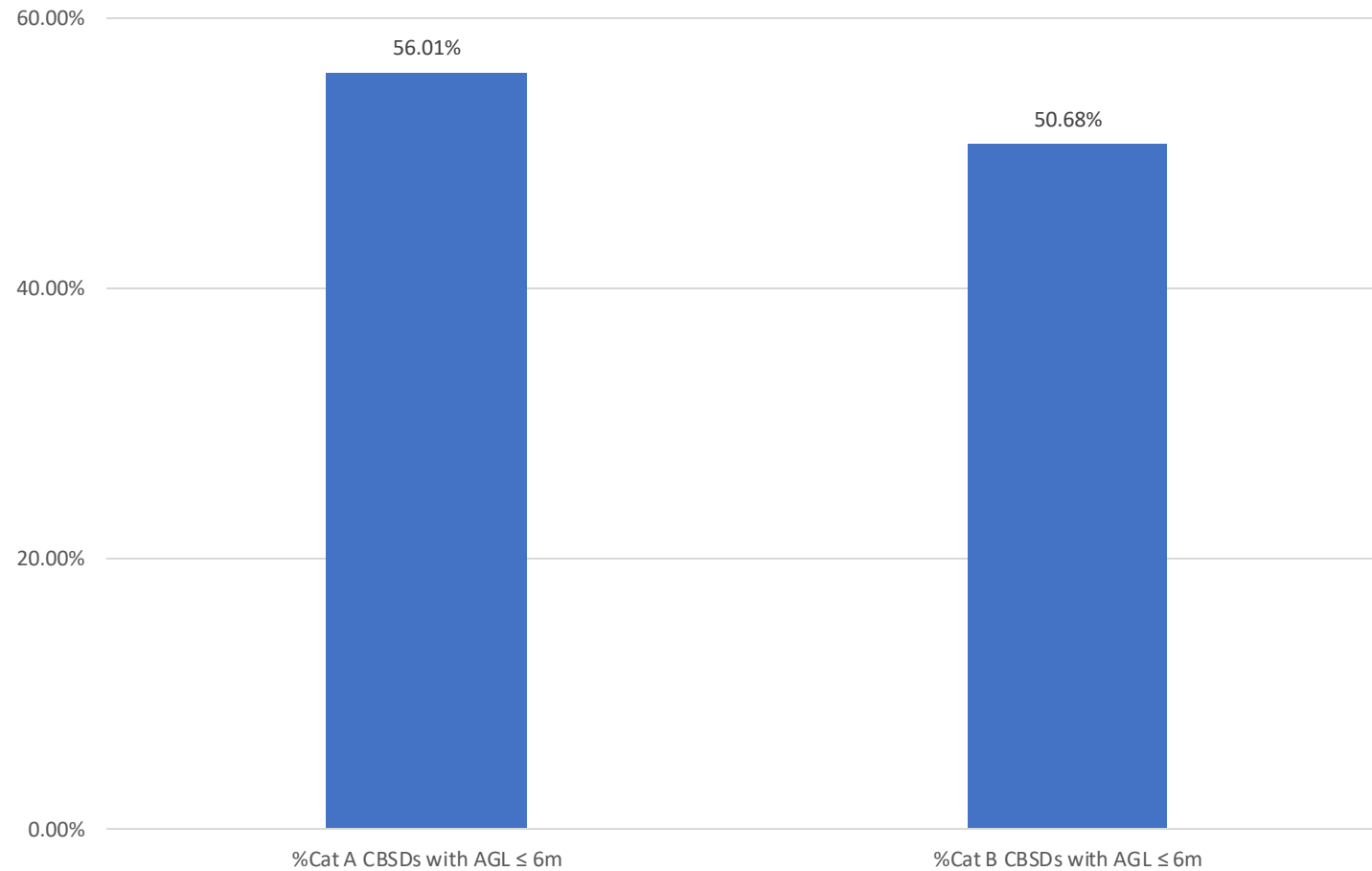


# Antenna Height Above Ground Level (meters)\*



\*This statistics takes into account the AGL values converted from the recorded AMSL values.

# CBSDs at and below 6 m AGL\*



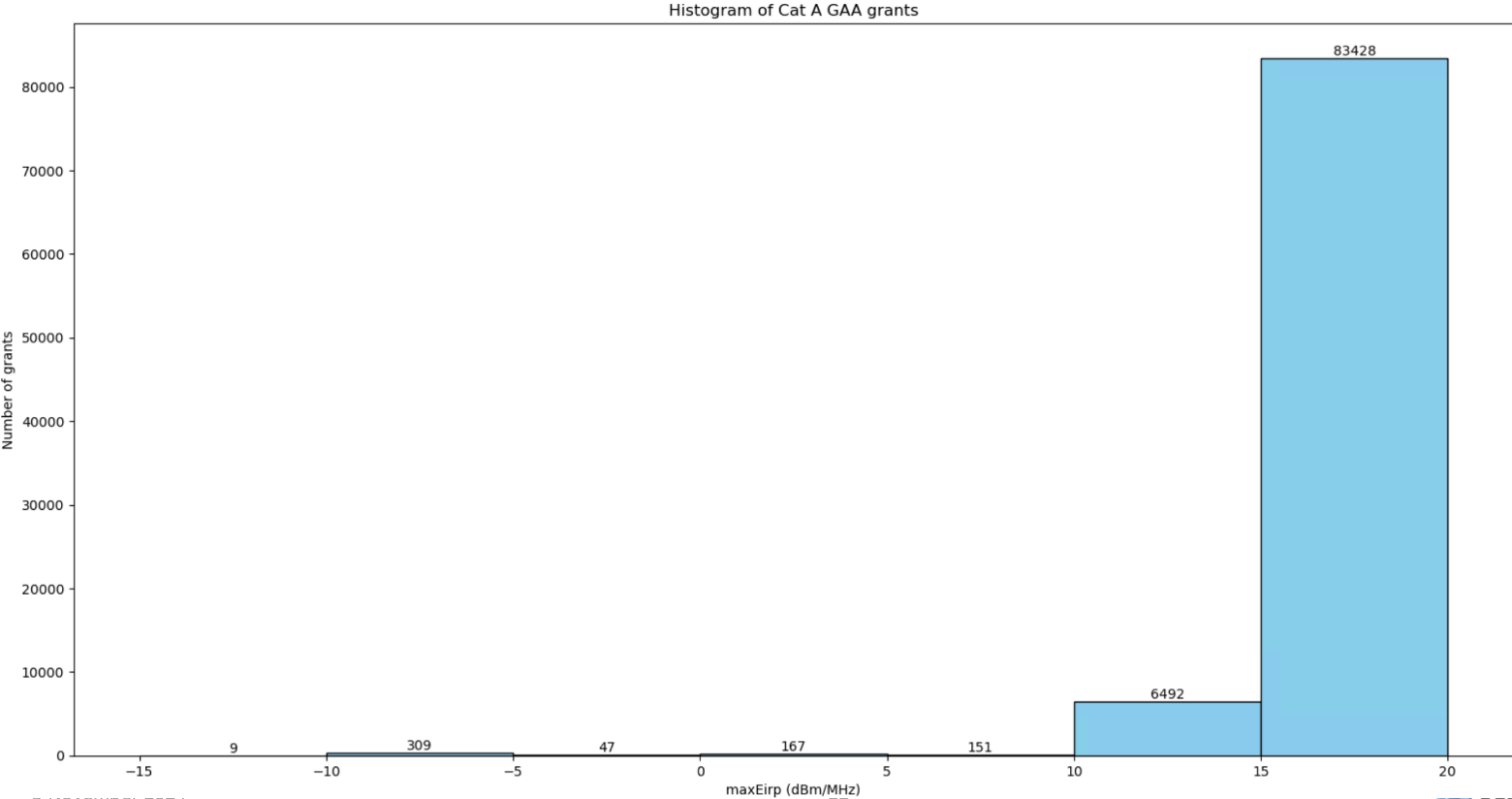
\*This statistics takes into account the AGL values converted from the recorded AMSL values.



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# Histogram of Cat A GAA grants



# Histogram of Cat A PAL grants

