# Telemetry and Communications

- <u>Robustness</u>: multiple redundant streams from data logger to data centers (including cloud)
  - No redundant streams currently, no cloud. We save data on site, then we retrieve it…
- <u>Security</u>: VPN, password changes, update firmware
  - VPN-Password protection is instrument dependent.
  - Extended ESS to cell sites….
  - Firewall settings for 172 net access. (Marc, are these last points saying the same thing?)
  - IP filtering on cell modems, access only from UW/UO.
- <u>Reliability</u>: telemetry path diversity
  - For EEW we have mix of Cell, 900Mhz, VSAT, modems, and LAN. (next slide: charts from EEW telemetry update)

PNSN EEW Comms Diversity
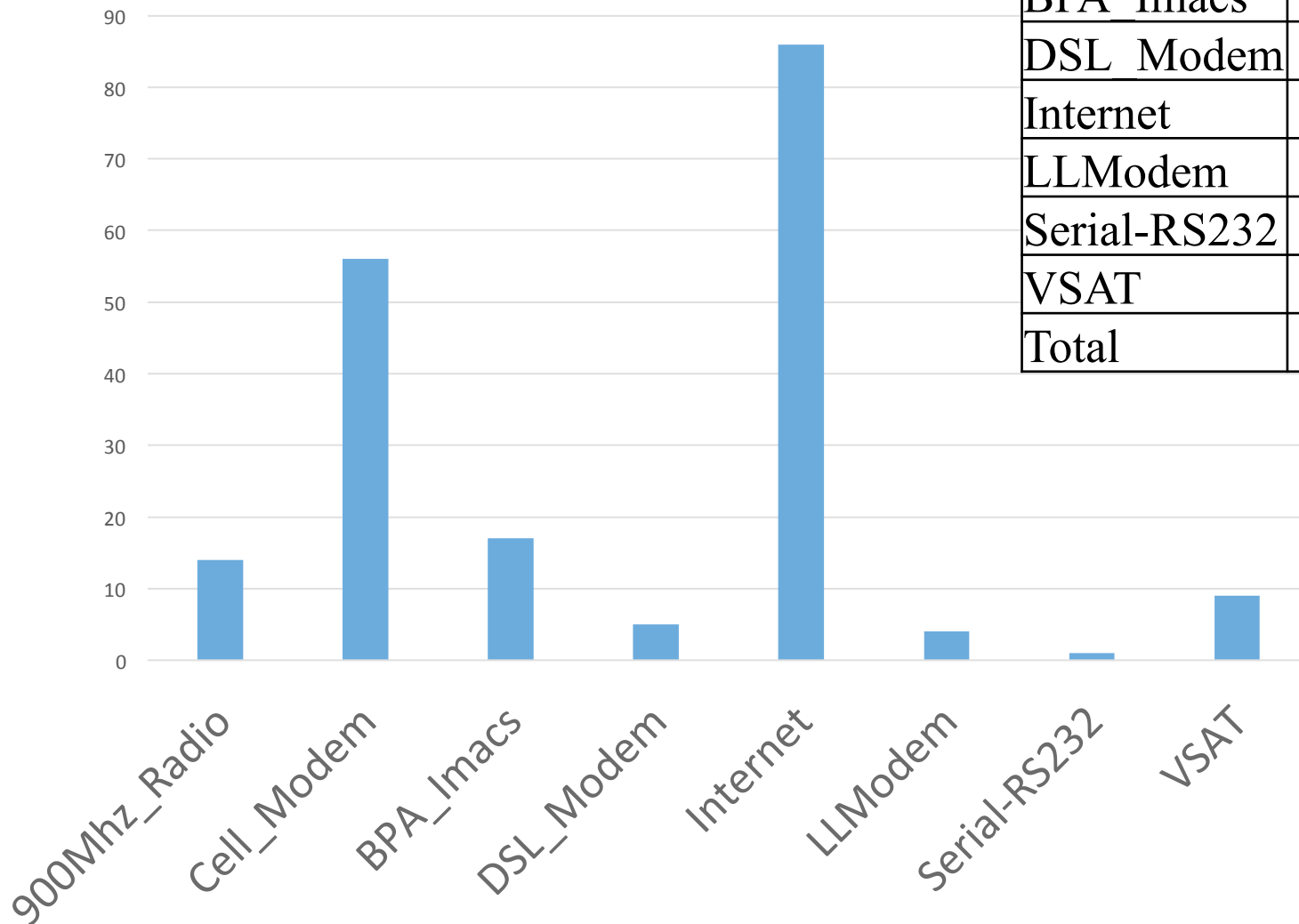
900Mhz_Radio	14
Cell_Modem	56
BPA_Imacs	17
DSL_Modem	5
Internet	86
LLModem	4
Serial-RS232	1
VSAT	9
Total	N=192