

University of Michigan ground station survey

Ground Station Survey

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What else exists and what are the issues with using it?

Introduction

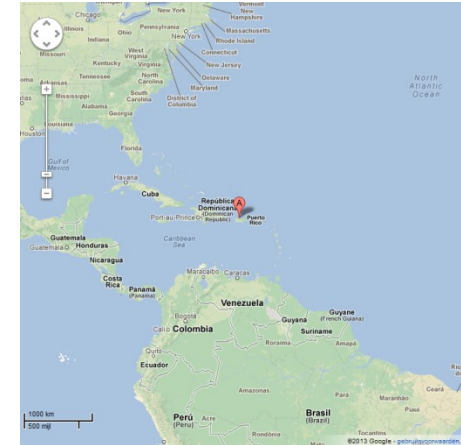
- **Ground station survey**
 - Basic information/specifications
 - Considerations
 - Funding/cost structure

- **University of Michigan ground station survey**
 - Big database
 - Continuously updated



Arecibo

- Specifications
 - 12 meter parabolic dish
 - ~2 to ~20 GHz
- Issues
 - Shortage of human resources
 - Transmitting never compatible
- Utilization: 1%
 - Increases if fully commissioned
 - Percentage will stay low



MyGroundStations (NEL44 & NEL61)

Specifications

- 2 x 5 m parabolic dishes (S/X-band)
- 2 m/70 cm high gain yagis

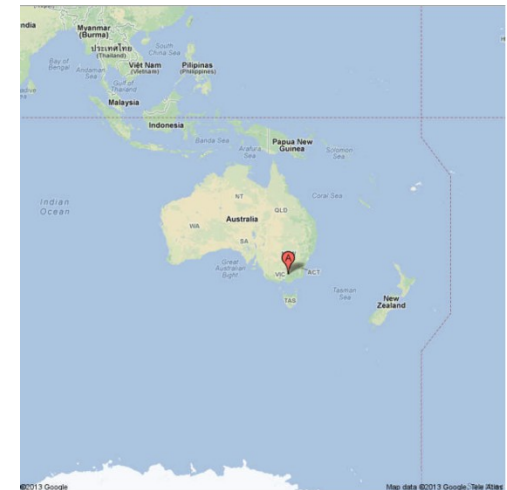
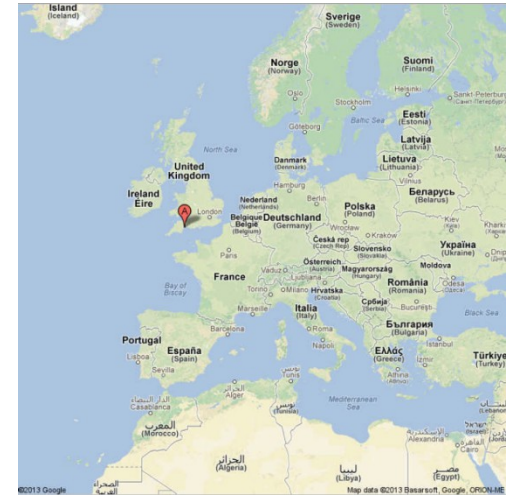
Utilization: < 10%

Allocation preference

- Dish owner projects
- Site owner needs
- Third party interplanetary missions
- Third party LEO

Cost structure

- Reciprocal use
- Hourly rates by negotiation



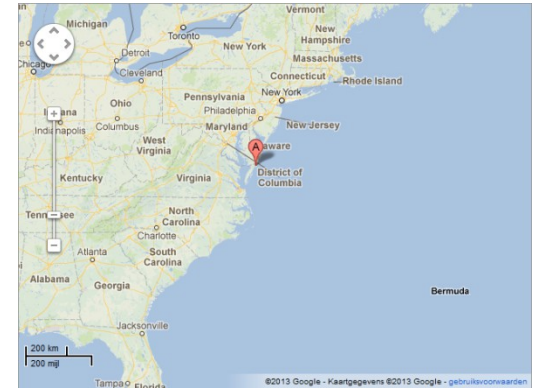
Morehead State University

- 21 m parabolic dish
- UHF, L, S, X, C, Ku band
- Utilization: 40%
- Serves as a radio telescope as well
- Cost structure: \$ 2850 per day



GSFC Wallops UHF CubeSat ground station

- Specifications
 - 18 m reflector
 - 380 MHz to 480 MHz
- Utilization: 8%
- Considerations
 - No amateur frequencies
 - NASA and NSF missions take priority



Conclusion

- Different allocation preference/order
- Utilization rates are low
- Identify ground stations for detailed survey

