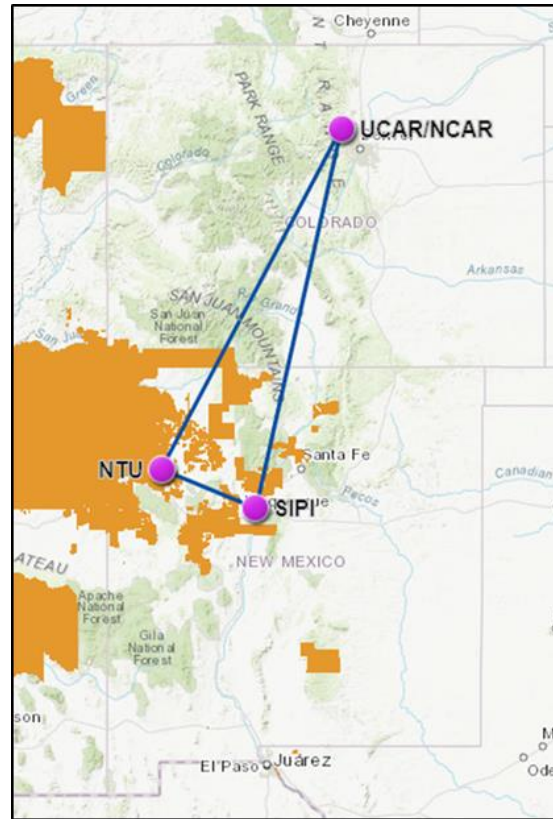
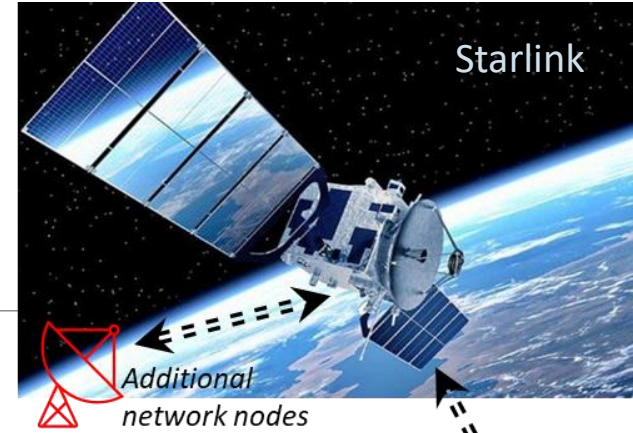


# Sovereign Network for Environmental Monitoring

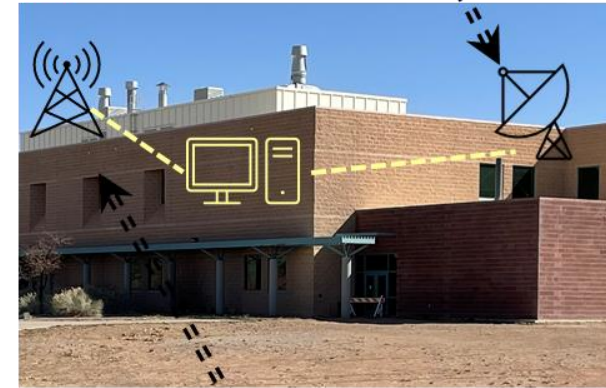
- SIPI, Navajo Tech & NCAR/UCAR
- Tools for IDS & IDG
- Environmental monitoring
- Bidirectional data sharing
- Tech transfer to Tribal agencies



Satellite Broadband Internet



Secure Server, Storage and Communications



Environmental Sensor Station



# RAMADDA

Repository for Archiving and MAnaging Diverse Data

<https://ramadda.org/>

---

- Data management and visualization platform
- Developed and supported by NCAR/UCAR
- Open source
- Easy to install and use
- Facilitates *local control* of data sharing and receiving
- NCAR/UCAR is using the Weather Research and Forecasting (WRF) Model to generate *mesoscale* weather predictions for the Navajo Reservation for delivery via RAMADDA.

# Environmental Monitoring Stations at SIPI and NTU

- WMO-standard met towers
- Campbell instruments
- Supports:
  - Weather, irradiance, soil moisture, ET, air quality monitoring
  - STEM courses
  - Precision agriculture
  - Tribal Extension
- Data sharing via Sovereign Network
- Opportunities to partner and coordinate



*Mahmood et al., 2019*

Contact: Dennis Dye, [dennis.dye@bie.edu](mailto:dennis.dye@bie.edu)