Prediction Formats Study Group
"Lynx Team"

Commissioned by Data Formats and Procedures Working Group
at Laser Workshop in Matera, November 2000

Purpose:
Recommend a single laser ranging prediction format to encompass
• Earth satellites
• Lunar laser retro-reflectors
• Laser transponders on or orbiting other solar system bodies
• Laser transponders in transit

Motivation:
• Lunar ranging predictions cannot be represented by IRVs
• Laser transponders present additional prediction challenges
  beyond traditional SLR and llr requirements
• Low earth satellites could benefit from more accurate predictions
Preliminary Design Concepts:

- It appears possible to create a format to handle all targets
- Format to be in the form of tabular or polynomial files
- Contents to include time and geocentric state vector at separations required to achieve optimal precision for particular target

Challenges:

- Will require new on-site and centralized software and procedures
- Will require some type of compression (ala RINEX) due to larger prediction files
- Need to insure all predictions are on ITRF
- Needs to gracefully handle geostationary satellites.
- Should provide means of creating at least degraded predictions beyond end of prediction set in case of extended network outage
Current Status:

- Charter and working documents have been submitted to the membership
- Member comments are being collected and analyzed
- A new version of the Charter and working document should be available in a couple of months