SpaceFibre Discussion

Glenn Rakow – NASA GSFC
SpaceWire Steering Committee Meeting
ESA-ESTEC Noordwijk, Netherlands
January 19, 2007
SpaceFibre Future Missions

• Currently NASA has no planned missions using SpaceFibre
  – Orion (CEV) has selected AS5643 (1394b)
    • No backup plan to AS5643 exists
• DOD has satellite missions with performance requirements that would require a data bus similar to SpaceFibre
  – Data rate in Gigabit range
• NASA has supplied money to develop SpaceFibre
  – 0.1 Full Time Equivalent (FTE) for FY07
Proposed Additional High-Level Requirements

- Orion (CEV)
  - Defines physical layer only
  - SAE Aerospace Standard
  - Active transformers for longer distances
  - S400 Copper Medium Interface Characteristics over Extended Distances

- Can allow option for alternative rates as well?
Trades

- The high level trade study presented at 2006 MAPLD
- Many lower level trades - examples:
  - Coding definition
  - Initialization sequence
    - Continuous bit stream?
    - Control code types
    - Definition flow control
    - How to synchronize state of receivers descrambler with the state of remote transmitter’s scrambler?
  - Power management
  - Speed negotiation
  - Etc.
  - Frame types
  - Frame size
  - Error detection coding
  - Error recovery
  - Scrambling polynomial
  - Etc.
Next Steps?

- Should we create separate working group for SpaceFibre to share ideas and develop concept?
  - Monthly?
  - Bi-weekly?
  - Proposed meeting time
    - 15:00 Europe/Amsterdam - 9:00 U.S./Eastern
  - U.S. Industry and other government agencies would like participate