Migration of DOD Satellite Operations from the Space Ground Link Subsystem Frequency Band to the Unified S-Band

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OVERVIEW

• Background
• Dual Band Requirement
• Recommendations
Background

Frequency Bands in Question

1755-1850 MHZ  SGLS

2025-2110 MHZ  USB
Background

• DOD has had exclusive use of SGLS since 1960’s
  – DOD Satellite Control Networks have invested heavily in the SGLS infrastructure

• Development of 3G wireless technology pressuring for more spectrum
  – Executive Directive October 2000 directed a study to identify spectrum possibilities for future 3G use….SGLS identified
  – Initial direction for DOD to move from the SGLS band
Switch to USB

• Advantages
  – Compatibility with other government agencies (NASA, NOAA)
  – Future Integrated Satellite Control Network transition made easier

• Disadvantages
  – Shared Band
    • NASA, NOAA, TV Newscasters
Dual Band Requirement

- DOD will move into USB
  - AFSCN schedule shows initial capability by 2007 with full capability by 2014
- NSSO managing the transition
- Direction for all satellite acquisition programs to be dual band compatible
  - No commercial dual band transponder available
    - Development being pursued by SMC
    - Power, Weight, Cost and Complexity may be an issue for small satellites
Dual Band Requirement

• NSSI is drafting an implementation plan and roadmap
  – R&D or experimental Satellites have wording that exempts them from the dual band requirement
  – Small satellites will have to manage to the frequency changeover
Recommendations

• Small satellites have a relatively short build cycle (1 to 3 years)
  – not usually block-buys

• Transition to “Dual Band” is considerably longer than 3 years
  – Both “SGLS” and “USB” available

• Recommend that small DoD satellites be able to leap-frog the transition
  – Waiver requests from “dual-band” requirements
  – Switch to USB when network is ready