

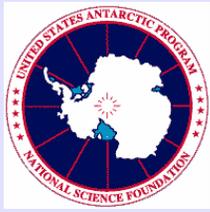
UNITED STATES ANTARCTIC PROGRAM

SOUTH POLE WIRELESS ARCHITECTURE

South Pole Users Conference
15 July 2002

Daniel L. Brooks

*Raytheon Polar Services Company
Centennial, Colorado*

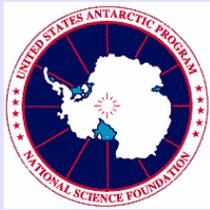


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Wireless Architecture

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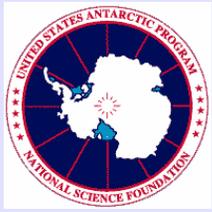
- Objective end state
 - Life and safety requirements fulfilled
 - Fully integrated in USAP Information Architecture
 - Current and future science requirements fully supported
 - Cost effective temporary and permanent connectivity
 - RF Sector designated and maintained
 - Dark Sector maintained
 - Quiet Sector maintained
 - Support efficient inter-personal electronic communications



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Method

- **Establish an Electronic Environment Baseline**
 - EMI/RFI Study conducted by SPAWAR
- **Develop Functional Requirements**
 - Based on current known needs
 - Review requirements-NSF, SPUC, RPSC
- **Develop Technical Requirements**
 - Based on analysis of functional requirements
 - Review with NSF, SPUC and RPSC (Frequency Coordination)
- **Conduct procurement**
 - Request for Information (RFI)
 - Request for Proposal (RFP)
 - Evaluation/Award
- **Implementation**



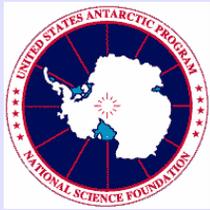
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Time Line

(Current Estimate)

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- **FY 03** **Summer** **Establish a Baseline**
- **FY 03** **Off Season** **Functional Requirements**
- **FY 04** **Summer** **Technical Requirements**
- **FY 04** **Off Season** **Conduct procurement**
- **FY 05** **Summer** **Implementation**



South Pole Potential Technologies

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- **IRIDIUM**
- **Low Power Cellular Communications (PCS)**
- **Micro Cell**
- **IEEE 802.3 CSMA/CD (Ethernet)**
- **IEEE 802.11 (a-5 GHz, b-2.4 GHz) Wireless**
- **IEEE 802.15 Wireless Personal Area Networks**
- **IEEE 802.16 Wireless Metropolitan Area Network**