SOUTH POLE USERS' COMMITTEE (SPUC) MEETING

28 June 2005
Raytheon Polar Services Company
Centennial, Colorado

These proceedings were complied and produced by
Raytheon Polar Services Company
7400 South Tucson Way
Centennial, Colorado 80112
For further information or to make comments contact
Paul Sullivan at 303-790-8606 Ext 32255 or paul.sullivan@usap.gov

Table of Contents

Attendee List

Committee and Affiliated Members

Antony Stark, Harvard - Chair
Russ Schnell, NOAA/CMDL
Albrecht Karle, U of Wisconsin
Gonzalo Hernandez, U of Washington
Bob Loewenstein, Yerkes Observatory
Chris Martin, Oberlin College
Bob Pernic, Yerkes Observatory
Robert Morse, U of Wisconsin

David Besson, U of Kansas
James LaBelle, Dartmouth
Irfan Azeem, Embry Riddle (ERAU)
Marc Lessard, Darmouth
Clem Pryke, U of Chicago
William Bristow, U of Alaska
Thomas Nikola, Cornell
William Holzapfel, UC Berkeley

Other Science Community Attendees:

Douglas Caldwell, NASA Ames
Steven Mende, UC Berkeley
Jeff Chang, Stanford University
Allan Weatherwax, Siena College
Cindy Giebink, U of New Mexico
Yusuke Ebihara, NIPR
Leonard Shulman, Bartol Lab, U of Delaware
Paul Evenson, Bartol Lab, U of Delaware

John Carlstrom, U of Chicago (telecom)
Steve Padin, U of Chicago
John Ruhl, (telecom)
Jerry Mullins, USGS
Kent Anderson, IRIS
Sridhar Anandakrishnan, Penn State
Joe Mastroianni,
Fred Eisele, UCAR
Andrew Clarke, NOAA/CMDL

National Science Foundation, Office of Polar Programs, Antarctic Science Section

Program Managers

Scott Borg, Section Head
Susanne LaFratta, Deputy Section Head
Brian Stone, Research Support
Vladimir Papitashvili, Aeronomy and Astrophysics
Jerry Marty, USAP Facilities Construction, Operations and Maintenance

Raytheon Polar Services Company

Steve Dunbar, Director, Science Support
BK Grant, South Pole Area Directorate
Paul Sullivan, South Pole Science Manager
Al Baker, South Pole Science Coordinator
Beth Watson, South Pole Station Support Supervisor
Dave Nelson, Science Support Manager, Operations

Dave Leger, Senior Manager, IT

Patricia Douglas, South Pole Logistics Coordinator

Bill McAfee, South Pole IT Manager

Dave Scheuerman, Deputy Project Manager, IT

Martin Lewis, Technical Support Manager, FEMC

Nick Powell, Satellite Communications Engineer

Jack Corbin, South Pole Science Construction Coordinator

Liesl Schernthanner, Winter Site Manager

Jessie Crain, Planning Support Manager, Lead

SPUC 2005 Nominees

Nominees	Discipline	Science Size
Stuart Jefferies	Aeronomy and Astrophysics	Medium
Marc Lessard	Aeronomy and Astrophysics	Small
Kent Anderson	Geology and Geophysics	Medium, Networked globally
Allan Weatherwax	Aeronomy and Astrophysics	Medium
Tony Stark	Aeronomy and Astrophysics	Medium to Large
John Ruhl	Aeronomy and Astrophysics	Large
Chris Martin	Aeronomy and Astrophysics	Stake only
Joe McConnell	Atmospheric Chemistry	Stake only
Andy Clarke	Oceans and Climate	Medium, Networked globally
Irfan Azeem	Aeronomy and Astrophysics	Small Medium
Albrecht Karle	Aeronomy and Astrophysics	Large

South Pole User's Committee Agenda

Annual Meeting 28 June 2005

Raytheon Polar Services Company, Centennial, Colorado

7:30 – 8:00 Continental Breakfast

8:00 – 8:35 Opening

- Welcome and introduction of attendees
- Overview of meeting agenda
- NSF welcome and remarks
- RPSC welcome and remarks

8:35 – 9:20 SPUC Charter

- Current status (RPSC/Sullivan or PSM)
- Update to reflect new direction or strategy
  - Purpose
  - Membership
  - Meetings
  - Working Groups
  - Term Limitation and Selection Criteria
    - Integration with other Science Coordination Offices (SCOs)

BREAK (15 min)

10:30 – 11:30 IT and Communications

- Bandwidth for FY06 and outyears (RPSC/Leger)
- Prioritization of science data for daily transmission offsite (NSF & Grantees)

11:30 – 12:00 Power

- Managing within stated capacities and participation by science (Marty)
- Capabilities of the new Power Plant (NPP) RPSC/Scheuermann)
- Dark Sector Power in the outyears

BREAK FOR LUNCH (1 hour)

12:30 – 1:30 Electromagnetic Interference (EMI)

- Current Spectral Management Policy (Grantee/Weatherwax)
- Strategies for future
- Relation to Sector Management

1:30 – 3:00 Working Groups

- Define working groups (SPUC Chair and members)
- Example (LHeWG) (RPSC/Baker)
- Identify areas in need of working groups (EMI, Sector Management, Grantee population, IT, etc.)
- Options for the future (i.e. SCOARA, IceCube operations, etc.) (NSF/Papitashvili)

BREAK (15 min)

3:15 – 4:15 Executive Session

South Pole Users' Committee Members

Dr. Antony Stark (Chair)

Aeronomy/Astrophysics

Smithsonian Institution Astrophysical Observatory

Radio and Geoastronomy Division

60 Garden Street, MS-78

Cambridge, MA 02138

aas@cfa.harvard.edu (617) 496-7648 fax (617) 496-7554

Mr. Russ Schnell

Climate Systems

National Oceanic and Atmospheric Administration

CMDL

325 Broadway

Boulder, CO 80305

Russell.C.Schnell@noaa.gov (303) 497-6773 fax (303) 497-6290

Dr. Albrecht Karle

Aeronomy/Astrophysics

University of Wisconsin, Madison

Department of Physics

4219 Chamberlin Hall

1150 University Avenue

Madision, WI 53706

karle@alizarin.physics.wisc.edu 608) 263-3945 fax (608) 263-0800

Dr. Gonzalo Hernandez

Aeronomy/Astrophysics

University of Washington

Department of Earth and Space Sciences

Box 351650

063 Johnson Hall

Seattle, WA 98195-1650

hernandez@u.washington.edu (206) 543-9055 fax (206) 685-3815

Dr. Robert Loewenstein

Yerkes Observatory

373 W. Geneva Street

Williams Bay, WI 53191

rfl@yerkes.uchicago.edu (262) 245-5555

Dr. Chris Martin

Aeronomy/Astrophysics

SAO

60 Garden Street, MS-12

Cambridge, MA 02138

cmartin@cfa.harvard.edu (617) 496-5462 fax (617) 384-7830

Mr. Robert Pernic

Aeronomy/Astrophysics

University of Chicago

Yerkes Observatory

373 West Geneva Street

Williams Bay, WI 53191-9603

pernic@hale.yerkes.uchicago.edu (262) 245-5555 fax (262) 245-9805

Dr. Robert Morse

Aeronomy/Astrophysics

University of Wisconsin Madison

4217 Chamberlin Hall

1150 Madison, WI 53706

morse@amanda.physics.wisc.edu (608) 262-3938

Dr. Allan Weatherwax

Aeronomy/Astrophysics

Siena College

Physics Department

515 Loudon Road

Loudonville, NY 12211-1462

aweatherwax@siena.edu (518) 786-5089

Mr. Andy Clarke

Climate Systems

National Oceanic and Atmospheric Administration

CMDL

325 Broadway

Boulder, CO 80305

Andrew.Clarke@noaa.gov (303) 497-6655 fax (303) 497-6290

Dr. Umran S. Inan

Aeronomy/Astrophysics

Stanford University, Dept of Electrical Engineering

David Packard Building, Rm # 355

350 Serra Mall Street

Stanford, CA 94305-9515

Inan@nova.stanford.edu (650) 723-4994 fax (650)

Mr. Brian Vasel

Climate Systems

National Oceanic and Atmospheric Administration

719 Sugarloaf Mountain Road

Boulder, CO 80302

Brian.vasel@noaa.gov (303) 497-6823

Dr. Jeffrey Peterson

Aeronomy/Astrophysics

Carnegie-Mellon University

Physics Department

5000 Forbes Avenue

Pittsburgh, PA 15213

jbp@fire.phys.cmu.edu (412) 268-2785 fax (412) 681-0648

Dr. Joe McConnell

Glaciology

Desert Research Institute

Water Resources Center

2215 Raggio Parkway

Reno, NV 89512-1095

jmcconn@dri.edu (775) 673-7348 fax (775) 673-7363

South Pole Area Users' Committee Meeting Minutes
June 28, 2005

Opening

Welcome and Introduction of Attendees

The meeting was open with the introduction of attendees.

Charter Review

Mr. Paul Sullivan, South Pole Science Manager, passed the old Charter around for review. From the recommendations of yesterday's PI meeting that identified working groups, he focused on the importance of this approach. He informed the committee of the cryogenic working group involving the grantees, RPSC and the NSF that was successful in solving their problems in a timely manner. This working group is now a part of their continuing planning process.

Dr. Antony Stark, Harvard, stated that the Charter reflects the way the SPUC has operated in the past. The wording on the working groups is vague. Most of the working groups are long term entities and the wording should reflect that reality. Term limits and the selection process has not worked in the past and it is difficult to get people to participate. He suggested that perhaps the members should be selected by RPSC and the NSF imposing membership.

Dr. Scott Borg, NSF/OPP Section Head, said that directed appointment may be appropriate. It is important to the NSF that this group have the confidence of the community and asked how to achieve that. He suggested that an active candidate pool be created.

Dr. Stark said that anyone who is a PI or Co-PI of an OPP project should be confident enough to be on the committee.

Dr. Vladimir Papitashvili, NSF/OPP Aeronomy and Astrophysics Program Manager, commented to Dr. Stark, as the Chair, he should be able to simply ask them. In the sense that each PI has a responsibility as part of the community of the South Pole, drafting should not be a problem.

Dr. Borg agreed with Dr. Stark. He feels that people would react differently when asked by a partnership from the NSF and RPSC leadership and perceive the membership more seriously.

Dr. Albrecht Karle, University of Wisconsin, asked who does the SPUC report to – RPSC or the NSF? It was obvious from yesterday's meeting that the purpose of the SPUC is to provide feedback to the NSF regarding the operation and support from RPSC (who is always in the middle). Is there a bigger issue?

Dr. Borg stated that there is a bigger issue which has to do with the Federal Advisory Committee Act. Through contract requirements the NSF needs incentives for the

contractor to talk to grantees for direct feedback. If there are issues that the community wants to talk to the NSF directly, then that should be brought to the advisory committee.

Mr. Brian Stone, NSF/OPP Research Support Program Manager, stated that what Dr. Borg is saying is exactly what Dr. Erb has said – that the NSF as a whole is limited to the number of advisory committees they can have reporting in total to the foundation. That is why the decision was made not to have more advisory committees. There are other complications involved as a whole that may or may not be helpful.

Dr. Papitashvili said that the Charter states specifically that the SPUC is to provide feedback. Whatever request that the community may have should be addressed by RPSC first and their response should go back to the community and to the NSF. The response and control is out of NSF's hands. If the community is unhappy, then the NSF would know that by what is going on with the feedback received from RPSC. It is generally between the contractor and the community to make working conditions good enough to be happy.

It was noted that the language in the Charter does not say that RPSC has to respond. It was suggested that it be revised to say there needs to be feedback.

Dr. Stark reported that there have been three revisions to the Charter. The reason why the purpose of the SPUC is so watered down and there is no obligation for RPSC to respond is the result of Raytheon lawyers.

Dr. Stark said that he has called people at RPSC and was denied information on specific recommendations. He said that RPSC is obligated to give it to the NSF but not to the science community. Mr. Dunbar reminded him that there have been times when RPSC has not been able to discuss issues with the science community because the issue was not finalized and has nothing to do with priorities.

Mr. Stone stated that there is information that is proprietary, such as salaries, position, etc, but everything else is open. He went on to say that it may require the NSF to facilitate a process by which the science community can receive other necessary information.

Dr. Borg asked if we can identify the POC for RPSC working groups. Perhaps the user committee can call Mr. Stone directly to clarify the progress of certain issues. Mr. Stone went on to say that what is needed is a mechanism in place so the science community can make an official request for status reports. Sometimes it requires pulling information from other divisions. The NSF will set up a communication channel whereby this information can get back to the scientists. Then the issue of what is proprietary and what is not will no longer be a problem.

Dr. Stark pointed out that all power comes from the NSF. The committee may investigate recommendations and make suggestions, but is still powerless to do anything.

Mr. Stone noted that if the committee makes a recommendation then the NSF should develop it as a priority area; the NSF should look at that report (from RPSC) and concur or not concur and set up an action. If the NSF commissions it for development, funds it and a WBS designated, then the NSF can ask for a status report to be available to the committee - only for things that NSF has agreed to fund. The NSF is committing to respond to recommendations.

Dr. Loewenstein noted that this would be a good step in that it has not been done in the past. As Dr. Stark mentioned, the Charter does not state that Raytheon will respond to the committee – and it should be included.

Mr. Dunbar said that RPSC can put that wording in the Charter.

Mr. Stone said that a quid pro quo for that would be that the committee generate a series of recommendations, set up a timeline and subsequent response for major issues.

Mr. Sullivan said that once the recommendations are made, RPSC will decide if it warrants a working group for resolving those issues, i.e. Iridium and bandwidth. The IT working group has been together almost since the beginning of the SPUC. Referring to the minutes from last year's SPUC meeting, Dr. Stark mentioned that the feedback and suggestions from the committee to find out the needs of the grantees were never responded to. He explained that at the heart of the issue was a detailed technical issue where the basis of the design of the system was flawed. A mistake in the initial fundamental engineering process was made and was not communicated to the user committee. Because of the bureaucratic process and defensiveness involved during the process of trying to fix the problem, the issue resulted in compensations whereby nothing was resolved. This was for a station-wide communications system where the grantees could have had input from being familiar with other similar systems they have seen working well in other places for less money.

Mr. Sullivan noted that is obviously a break-down in communications.

Dr. Loewenstein pointed out that what was being designed sounded to him like a much more complicated system than what was needed. The science community was never asked what they really wanted. The design was made with no input from the scientists.

Mr. Dunbar stated that there is a bigger picture here. There are station requirements that go above and beyond grantee requirements. The IT design people were working closely with Mr. Pat Smith. What he was looking at was trying to satisfy the needs of the station as a whole.

Dr. Stark said that it was all the grantees on station that wanted that one thing and they wanted it now.

Mr. Stone explained what happened on the Iridium multiplex. After the user committee recommended this, the NSF funded the project and he went to the NSF as a champion supporter of the Iridium communications. He even went to the South Pole soliciting

information and came back knowing that this project had to be done. There were technical issues that RPSC and Mr. Smith were grappling with in how to bring it into production. Mr. Smith wanted a robust, reliable system that was more than e-mail and instant messaging for the science community. There were funding and internal concerns and even though the NSF was trying to get this on the "radar", they found that it was not ready for prime time. The NSF could not justify the high costs. When the costs of Iridium went down, the technology to take advantage of this was not available. It was not Raytheon's fault – IT or Mr. Dunbar. It was not an NSF priority. The NSF did not fund it and the grantee did not know that because the feedback mechanism was not in place. The NSF did not agree internally, but they are trying to fix this for the future. If the NSF was required to give the science community a response, then they would have and the grantee would be informed.

Mr. Dunbar said that RPSC will respond to recommendations and try to find solutions. But actions need to come from the NSF's direction and support. He suggested that RPSC insert in the Charter that within a certain amount of time RPSC will tell the committee what the recommendations are, what anyone else has to add, and when RPSC will be able to answer the questions from the science community and agree on a time frame with potential suspense dates. He did not want to commit to a time as some things may be more complicated than others and take longer.

Mr. Stone said that some recommendations may need a lot of study. Sometimes it cost money to see how much money the NSF can spend.

Dr. Stark said that some of what is being said relates to an aspect of the South Pole culture and the three-way power relationship between RPSC, the NSF and the grantee. It often happens that there may be some technical problem relating to operations on station that the scientists realizes will affect science directly. There is a lot of expertise within the science community in building apparatuses. When recommendations are given to RPSC and NSF, the NSF's first response is to assume that the scientist does not know what needs to be done, then tasks RPSC to hire a consultant. Six months later the consultant says that RPSC should be doing exactly what the scientist suggested in the first place. If the science community was heard in the first place, it would not have cost so much money, i.e. the cryogenics and the 24/7 e-mail. The feeling within the NSF is that it is not true unless an outside consultant makes recommendations and what the scientist says is held as suspect and is not trusted in technical matters. The scientist's motive is to get science done and make sure the experiments do not fail.

Mr. Stone said that he was sorry to hear that he felt that way. The NSF spent $5 million to solve the cryogenics problem. The NSF has worked to build a partnering relationship between RPSC and the science community. They believe what the science community tells them. The NSF can not act on things right away because there is policy and a process that needs to be followed. Sometimes there needs to be someone on the outside to confirm decisions. He also believes that some of the best ideas have come from the science community.

Dr. Papitashvili said that the problem lies with RPSC and the SPUC – not the NSF and the SPUC. RPSC should be addressing and responding in a more timely manner and will take certain actions in agreement with the NSF within their budget. RPSC should set up a clear timeline for addressing science issues. Mr. Dunbar should understand that RPSC has to improve and respond adequately. If consultants have to be hired for this effort, then it is a good thing to do.

Mr. Dunbar said that RPSC has not made one decision in the last two years (cryogenics specifically) where comments, suggestions or criticisms from the grantee community has not been solicited.

Dr. Stark noted, as an example, in 2003 the cryogenics winter over was not a success with a new Dewar. When that Dewar was completed, Dr. John Ruhl wanted to inspect it, but was told by RPSC that it was being inspected by an inspection process. When it failed and the O-ring froze, there was $2 million lost.

Mr. Stone said that he did not think that Dr. Ruhl was told that he was not allowed to inspect the Dewar. There were issues with Gardner, the company who makes the Dewars, as to what they were willing to do and guarantee. They said it was tested at certain levels, but was not. RPSC is catching flak here when it is not their fault. At the end of the day it is the NSF who tells RPSC what to do.

Mr. Leger, IT Communications Manager, pointed out that RPSC IT was directed to take the raw requirements and make a design. That was direct instruction from Mr. Smith. He sent out a survey to the scientists regarding the data transfer requirements and only got three responses back from the science community on these Iridium issues. The Iridium e-mail is functional now. There is a four-channel multiplex link from the South Pole 24/7 right now. RPSC has submitted a request to the NSF to make that link available, but still waiting to hear for approval so IT can let the science community know about it.

Dr. Ted Scambos introduced himself as a member of the McMurdo Area Users' Committee. It was his understanding that the purpose of this meeting here is to discuss the new SPUC Charter. One of the problems is that when the scientists take issues to Raytheon for discussion and then to the NSF to be discussed further, the committee must realize that there is information that RPSC and the NSF cannot discuss with scientists. There are some things the scientists cannot be privy to. He thought the idea behind the new Charter was to form smaller groups with necessary expertise from RPSC, the NSF and the science community for discussion and solving issues. From meetings like these, these groups would be involved in the problem solving process throughout the year. The scientist has the same frustrations in McMurdo. Sometimes decisions must be made without the input from the scientists. That problem can be handled by allowing these smaller groups to attack and solve problems. Then the scientist would know what has been done.

It was noted that the successful working groups are the ones that have decision making power within the NSF, RPSC and the grantees.

Mr. Dunbar stated that RPSC has in the last few years endeavored to communicate with the grantee community when there is an issue. That is one of the first things that Mr. Stone asks for nearly anything that RPSC might be doing.

Mr. Stone explained that when he can engage the science community behind recommendations, it is powerful when making budget arguments. That is why these IPTs are so important. As an example, he just asked for $60,000 for condensers with the support of five letters from the grantees endorsing it. The NSF can take a concept, get behind it, work the issues, and turn it into a budget defense. This is why the cryogen issue was a success.

Dr. Stark noted that there were attempts for interaction earlier in the year when scheduled telecoms were postponed with RPSC. Mr. Leger asked that in the future let him know about these cancellations and he would make sure they were carried out.

Mr. Dunbar said that RPSC has not been as diligent with IT issues, but Mr. Leger stated that the IT group has a very rigorous project management scheme whereby designs go through a multistage review process, i.e. as was carried out during the IT design process for the RVIB L. M. Gould.

Action item:

Mr. Dunbar stated that he and Mr. Leger will include the SPUC members into the IT design reviews.

Dr. Loewenstein asked what if there is an issue that the grantees have a need for, everyone agrees, but through the process it gets to be bigger than what it was originally requested and, therefore, no action is taken. Is there some way where the grantee requests can be distilled to keep them small and simple and implemented on a fast scale so the scientist can get what is needed. He suggested that perhaps a list of short requirements that encapsulates issues needs to be created and kept up to date.

Mr. Stone said that sometimes the NSF may identify issues that are more than just what the grantee needs, i.e. the multiplex Iridium issue. It is up to the NSF to balance what is good for the whole community, program and station. The NSF investigates a system as a whole and attempts to be fair and equitable. Consequences also must be dealt with – it is almost $1 million for Iridium usage now, but everyone benefits. The NSF can do some of what is being asked, but again, they must recognize that there are some things that everyone wants but the NSF must apply equally across the program.

Mr. Dunbar gave classic examples, i.e. web pages, IT security with federal requirements, etc. Nothing is simple when working with a government contract.

Mr. Stone agreed. There are rules that must be followed because the NSF is a government run federal program.

Dr. Stark noted that everyone should understand that basically things are running well and good things are happening. One of the functions of the SPUC is to tweak boundaries to make things better. One of the frustrations is the ponderousness of the bureaucracy; seeing that the scientists can do things more nimbly, but do not have power or money. As a suggestion, it would help if there was a conduit for a small amount of money for the scientists to implement solutions easily. If there were $50,000 available for the 24/7 e-mail, a system that would meet the needs for scientists could easily be created. Another example is the firewall on the ASTRO building. The scientists took a computer out of the junk heap, and for no money, is now a very useful firewall that RPSC does not know about which tells of all kinds of illegal activity. If there was a way to get logistics moneys for these little things, once in a while, the scientist could do a lot of good for South Pole Station.

Mr. Stone said that he understood what he is saying and the NSF does consider those things. The NSF has to retain direct management with some functions. The NSF does not have the money to fund all those good ideas. It is set up to go through RPSC. Just because there are multi-agency work groups, does not mean that their ideas or recommendations will be funded.

Dr. Stark asked about working groups that are already part of a funded project, i.e. Iridium and the 24/7 e-mail project. Mr. Dunbar replied that by including the grantees as stake holders in these processes, they would be one of the voices at the table being heard when the decisions are made.

Mr. Stone agreed. He wants the science community involved.

Mr. Dunbar said he would choose the wording for the Charter regarding the working groups to include all of the stake holders, grantees, various contractors, subcontractors, service providers, etc. RPSC would solicit the SPUC members for who they would like to have designated as POC for what ever particular project they are working on.

It was noted that the members would like the Action Item List to be published within a reasonable date of this meeting. It was also noted that the POC for RPSC is Mr. Charlie Kaminski, Planning Manager, who is not involved in the Executive Session meetings.

Dr. Holzepfel, UC Berkeley, mentioned that the helium issue was a success story and wanted to know how that came about, why it worked so well and if it can be used as a model for future IPTs.

Mr. Stone said that it worked two fold – the NSF recognized that cryogenics was a problem that had to be solved. That was the basis for forming a group. These people were acknowledged as stakeholders. Everyone understood that not one group would solve the problem alone. There were a lot of three-way conversations. He thought that since he and Dr. Papitashvili both participated and the commitment of money was another big reason why it was successful. The NSF must be involved in the recommendations from the user committees. Another important mechanism is that the Committee of Visitors (COV) and the Advisory Committee recommending that the NSF

consider the ideas from the scientists and follow through with the recommendations that come from the user meetings because it is a good venue to make changes.

Mr. Dunbar said that RPSC will draft the language for format, venue, and timing for formal responses. It comes down to leadership. Mr. Stone, Dr. Borg and Dr. Papitashvili have made a commitment that the grantee will be involved in the process a lot more which percolates down to all of us in RPSC - having grantees involved is the standard MO for RPSC.

Mr. Sullivan noted that it helps to assemble the necessary expertise at the conception of the idea to get it going.

Action item:

Mr. Dunbar stated that the action for RPSC is to draft what the formal responses will be to the SPUC and add this language to the Charter. The language of RPSC representation will be considered. Also, to survey how RPSC working groups will establish a mechanism that will involve the grantees as stake holders for particular projects. Presumably the mechanism will be that RPSC will ask the user committee who they would like as representatives for which certain project.

Dr. Stark said that RPSC should not have a membership in the committee, but designate a POC. Mr. Dunbar said that that person now is Dr. Charlie Kaminski. The Planners do all the leg work to organize these meetings.

Dr. Scambos noted that RPSC people are fully tasked, but will try to work as affectively as possible. All discussions should take place with stakeholders present.

Break

IT and Communications

Mr. Bill McAfee, IT Manager for Communications at South Pole

The three topics for discussion are the bandwidth management, Iridium and SPSM IT projections for next year.

In regard to bandwidth management and satellite resources for next season, IT considers what has been requested in Sips, resources, amount of data and how to manage it.

IT Wideband Satellite Services

Mr. Nick Powell, Satellite Communications Engineer (See PowerPoint presentation on web site)

Mr. Powell started by noting that McMurdo will be undergoing a substantial bandwidth expansion this austral summer. There will be an outage, but not sure how long or when it will be. When passing through McMurdo in December or January, communication may be restricted to e-mail only. There may not be phone service or broad band connectivity. There will be a new HF antenna field near the Marisat GOES terminal. This work will be

related to the coms move to the SOC in B3. Sometime this summer there will be a transition from the old coms and the new SOC. The dates are not yet known. By the end of the summer everything will be centered up in B3 - no longer in the dome.

The major SPMGT modifications are complete and ready to go. Currently there is an aggregate daily pass length of 11.25 hours of T-1 (1.544 Mbps) Class of service for operations support (phone, Internet, VTC, etc.) The MARISAT F2 is at 6.25 hours per day and the GOES-3 is at 6.5 hours (786 kbps out/1544 kbps in).

The TDRSS F1 is at 6 hours per day; Ku-Band science link is 5 Mbps data rate which supports approximately 10GB per day data transfer. IT is exploring the possibility of increasing the data rate to 7.5 Mbps to permit 15GB per day. That is going to be the limit from satellites. This is the projection for the next year and half.

South Pole Communications Forecasts

Mr. Dave Leger, IT Senior Manager, Science Support (See PowerPoint presentation on web site)

Mr. Leger began his presentation with the South Pole's current bandwidth utilization. The current outbound IP link is roughly at 45% of capacity. This is partially data and partially station operations traffic (e-mail, VOIP, Internet, VTC, etc.) using all satellites, including TDRSS F1 S-Band. This leaves about 2GB per day usage before hitting the 80% ceiling that Cisco recommends for quality of service. Beyond that voice over IP and any kind of real time interactive software and anything that requires real-time response is impacted.

The Ku-Band transfer is hitting at the10GB per day limit. The capability to catch up if there are problems is there. Next season's forecast shows the IP on the S-Band TDRSS F1 data transfers estimated at 0.8GB per day. Routine station operations traffic runs on this link. We are considering 16.1GB per day total for the TDRSS F1 which exceeds the 10GB capability. The proposal has been submitted to the NSF to increase the speed from 5 to 7.5MB per second. That involves a code change on the SPTR system which will give 15GB if some of the data is shuttled to the IP link.

The long range forecast in data transfers in out years shows the demand goes from over 50GB the year after next season and then by 2010 would be up to 90GB which is from the IceCube and the 10-meter telescope demands. Proposals have been submitted to the NSF to modify the existing SPTR system and increase its capacity and building a new SPTR II to run a higher capacity and using the new TDRSS F3 which is now coming into view and also a proposal that is a variation of that that would modify the 9-meter and allow use of the Optus 3 Australian satellite depending on NSF funding.

Dr. Papitashvili suggested that operations real time data could be collected and transmitted at a later date. The PI should be looking at what data they can data-pack, store and transmit later. They should let RPSC know how much data they plan to generate every day. Mr. Leger said that that would be hard to predict. Data automatically sits on server until there is space to send so transmission needs to be all

day. He asked that the PIs only send what is necessary and to compress their data. There is no cost savings when using 50GB or 100GB – it is the same.

Dr. Giebink, U of New Mexico, said that they are looking at carrying back their data and might send some of it if bandwidth will allow.

Currently transmission can be 10GB per day and up to 2GB per day in IP channels.

Mr. Phillips said that one upgrade in progress is software change in the next few months that will bump us up to 16GB per day. An interim upgrade is being worked on that will be available in 2007 that will bring capacity up to 42GB per day. Planned, but not budgeted is the upgrade of the current 9-meter antenna to talk to an Australian Optus satellite and a new antenna that will talk to the TDRSS satellites which combined will give 236GB per day. That has not been approved by the NSF yet.

Dr. Loewenstein noted that it looks like there will be what it expected up to 2009. TDRSS F1 will be turned off in the next two years and F3 will move into its slot but it will cost more.

Ms. LaFratta, Deputy Section Head, said that the NSF has a request into Congress now to fund $15 to 16 million in order to upgrade the antenna and put in the ground station so that everything that is available can be acquired.

It was noted that MARisat is projected to last until 2010 - the GOES until 2013 and perhaps longer.

Dr. Stark said that the SPUC has recommended that there be available five days worth of data storage on station. Mr. Phillips pointed out that the storage area network is now available for next season.

Dr. Giebink said that they are planning to take their data back on the plane, but there will be a gap where they will not have a back up for their data. They would like to have 12 Terabytes of storage temporarily available until they can get their data back to their institution.

It was noted that enormous amounts of storage can be provided, but there was a question of power availability. Further discussion regarding data storage continued.

Mr. Dunbar suggested that an action item to clarify what the community needs, what the constraints are, and ask IT to query the grantees on storage needs and back up. With that information evaluate the power constraints and budget limits, and decide what can be done.

Mr. Stone said that the NSF would like to know what the requirement is for a risk management plan for shipping the data back. He said that if this is needed for just one project, then he would rather build that need into that specific project budget rather than have RPSC maintain and manage that storage. It would cost more for RPSC to create.

Everyone needs to consider the timeliness and justify why this data needs to be delivered in a timely manner and what is going to be done with it. He asked if the data could be burned to a DVD and sent later or buy more hardware or ship the server. This is what was done for McMurdo and the Andril project and the core photos. They pulled the hard drives out and sent them to Christchurch where they were loaded to the Internet over the summer. The project proposal should outline and identify the data needs and the timeliness of delivery.

Ms. LaFratta mentioned that when F3 is acquired, it will cost $64.00 per minute and will be an active part of the TDRSS constellation so there will be scheduling against NASA and other users on that satellite.

Mr. Phillips brought up the possibility of satellite interruption and wanted the committee to think about what their back-up plan would be if the link was lost (which has happened to satellites before).

Dr. Stark suggested that there be a big scratch area available which can be used on short term basis.

Mr. Stone said that if the community wanted a network of servers for common use or a rack of 15 PCs with a data acquisition system and networking hardware be provided so people do not have to bring their own hardware.

Dr. Giebink suggested that they bring their server and cross cable and move their data from machine to machine that would not require networking at all. It could be plugged in, powered up, move the data, turn it off and leave.

Iridium Multi-channel Prototype System SPUC Update

Mr. Gary Ferentchak, Project Manager (See PowerPoint presentation on web site)

Mr. McAfee introduced Mr. Gary Ferentchak, the Project Manager, and the Iridium multi-channel concept. The goal for the Iridium multi-channel is to provide 24/7 network capability to the outside world. It will be a small pipe capable of carrying small text-only e-mail during the times when the satellite is not available.

Mr. Ferentchak opened by defining the objective which is to provide a thin network to network connection between South Pole and Denver during non peak hours. Last year when the NSF tasked PRSC to establish this multi-channel system there were a number of physical constraints found when running Iridium 7 x 24. IT worked on identifying and resolving those constraints with Iridium and Boeing. The FY05 scope was to (1) develop the components for a 24x7 four channel Iridium multi-channel ML-PPP R&D pilot system; (2) test to verify net improvement associated with Iridium hardware and firmware fixes. Test results will identify if supervisory recovery system is still required; (3) establish Interim multi-channel South Pole to Denver via PSTN link while remaining issues are resolved; (4) design and implement LBT supervisory recovery system.

Concept of the DOD gateway is upgrading their gateway services and adding up to 260 modems. Some of the issues from last year was the Iridium failing to a non-responsive mode and can not get it back. Regarding the hung UART and the self initiated internal power down, Boeing and Iridium were provided with enough engineering documentation pointing out that it was not a user problem and they issued a hardware fix and software upgrades which did make a difference. The supervisory requirements have gone down and they have done some good work.

This year the link is useable and is stable. Last year they were loosing a channel every 7.25 hours; this year it is 140 hours. Last May IT submitted the ConOps to the NSF which outlined how transporting some user traffic on the prototype link would be expected to work. The testing is moving into production the week of June 27 and will be ready to carry user traffic in prototype mode, in addition to test traffic, on July 7, 2005.

FY05 Prototypes Next Steps

1) Provision network for specific science application (s) to traverse the prototype link (after identified).
2) Develop and test exchange to exchange solution for off-hour size limited e-mail.
3) Develop improved antenna solution – South Pole and Denver.
4) Test LBT non-responsiveness recovery solution.
5) Develop and build packaging solution.
6) Engineering documentation.
7) Deploy equipment and antenna upgrades to South Pole.

Dr. Stark queried how the testing will proceed, when it will be complete and what constitutes a successful test.

Mr. Ferentchak stated that we are testing with equipment that has been deployed to the South Pole and that equipment has been upgraded to the current firmware that has the improvements. It does not have a recovery system so it will need a little babysitting to see what works. When station opens antennas and modems will be upgraded. The official run on the prototype link will be after the equipment is deployed that has been developed and tested. It is now fairly reliable.

Dr. Loewenstein asked what will be the process to have a user project to experiment with it right now.

That has been addressed in the Concept of Operations - some guidelines have been recommended and have asked the NSF to pick a potential user to implement traffic. It has been sent to Mr. Smith for coordination who is waiting for Mr. Erick Chiang to approve for implementation. Dr. Papitashvili asked that RPSC let him know when this sort of thing is submitted so the other program managers are aware.

Mr. Ferentchak said that IT met with the configuration control board last week and have approval to make the network changes. The formal process is happening this week. The production equipment is being configured to recognize Iridium equipment.

Mr. Stone mentioned that the operational costs are expensive for the monthly fees for the SIM cards. There needs to be a mechanism by which payment for the SIM card costs will be made. There are some finite limits as to what the DOD can accommodate on their gateway. Other arrangements to deal with capacity may need to be made. This is great, but expenses may need to be renegotiated.

Mr. Ferentchak said that the DOD has changed the air billing structure for the SIM cards so that is practical and affordable now.

Dr. Stark asked why the short e-mails are not pulled out and then sent out to the link. Then they would go straight through. Mr. Ferentchak said that Mr. Smith has already asked RPSC to review that. Right now 50k is the limit recommended but the science community can choose whatever limit they want.

Mr. Dunbar noted that a Concept of Operations draft is in Mr. Smith's hands and he will coordinate with other NSF colleagues. He will be asked to release it through the SPUC so that it can be circulated to the science community for feedback.

Mr. Stone said what is needed is the ability to access this whenever needed for operational reasons and to invest in a filtering system for SPAM. Protocols need to be in place for getting the e-mails for operations, safety and health. A priority system needs to be in place so that the most important e-mails are sent first. E-mail is not a big chunk of the bandwidth.

SPSM IT Updates

Mr. Todd Phillips, SPSM IT Project Engineer (See PowerPoint presentation on web site)

Mr. Phillips said that there is a new telephone system with voice over IP phones which is in place today replacing the majority of analog phones. There is a new network backbone system. The main system is in place and tested in the elevated station and campus buildings. The installation of the new network services equipment is almost complete. The transfer services from the dome to the new data center will begin in a few weeks after NSF approves. The scientists will receive a document (SPSM IT Transition Impact Briefing) listing the date ranges for services. There will be notification of outages ahead of time. There is a new radio system (Digital Trunked Radio System) going in which has a paging feature so pages can be sent to radios. It will be completed in the summer of FY06.

Dr. Stark said that there should not be paging or radio systems at the South Pole. It is against the SPSM approved design and against all the recommendations from the SPUC. It is not to be allowed – not in the Dark Sector.

Mr. Phillips said that these radios do not have antennas and have been designed so they will not interfere in the Dark Sector. As long as there are life safety issues, there will be radios in the Dark Sector. Mr. Phillips will verify that the radios are receiving only and not transmitting.

Power Challenges

Mr. Jerry Marty, NSF FEMC Program Manager

Mr. Marty stated that there are challenges for handling power at the new station and it is not even finished. The issues regarding the power are in two categories: 1) the basis of design for the power plant as it was designed and, 2) the usage and demands for science as of today. The analysis from RPSC to the NSF indicating that there would be brown outs if the SPT project and IceCube proceeded as planned. RPSC advised the NSF what was being seen on the grid based on the transition plan from the old station to the new. This information was taken to the NSF senior management with an action item that RPSC would provide the big picture by June 1. The big picture resulted in a scenario that showed the requirements for power in the Dark Sector have been exceeded. There will be a serious situation in 2007 and 2008.

In a telecom discussion with RPSC and the NSF it was concluded that the NSF would work with the science community to find a solution that would negate any upgrades to the power plant. Upgrades would mean that more fuel would have to be brought in; which would mean more flights. The goal is to get flights down. The consensus was that the South Pole operations and currently approved science be managed within the capacity of the new power plant; then take hard look at requirement from science – the real user. The needs are to 1) find out how instruments can be designed to work within the capacity of the power plant, 2) work with the IceCube and 10-meter folks to find opportunities to bring down the power demands and become more efficient, and 3) have RPSC monitor all the feeders, not only on station, but in the Dark Sector, over to ARO and the Quiet Sector find out where demands are and understand efficiencies.

Dr. Borg wanted to remind everyone that what Mr. Marty is referring to is the need to manage within the capabilities now available for the users. Major long term improvement issues at this level needs to be addressed through the Advisory Committee.

Power

Mr. Marty said that he would like to solicit some help from the science community regarding the power problems. As the program moves forward he would like to have some dialogue, team effort and representation from the smaller groups in the Dark Sector and the Quiet Sector other than IceCube and the 10-meter.

Dr. Giebink said that she was tasked to find out what their power requirements were for input into their SIP. She suggested that since they do not even know the questions to ask, it would be helpful for the community to get together with those experts who have knowledge of alternative power.

Action item:

There will be a working group created at the request of the NSF. Mr. Bob Pernic will be the committee member representing SPUC.

The four current working groups are EMI, cryogens, IT and now power.

Capabilities of New Power Plant

Mr. Dave Scheuermann, Project Engineer (See PowerPoint presentations on web site)

Mr. Scheuermann said that the basis of the new design was developed in the mid 90s at which time there were significantly lower power requirements although the old power plant was being pushed to its maximum capacity (500kw). The new power plant was built with 750 kw capacity with a 250 kw peaking generator for approximately 1 megawatt total capacity, but wanted to be able to manage within the 750kw capacity. The total capacity is actually 989kw. Mr. Scheuermann explained that the chart figures, demand increases and projections indicate that continual support for that much power is not possible. The capacity is up near maximum already.

The problem is the current physical capacity of the plant and the ability to get fuel in to support that demand. Fuel storage and flights would need to be increased so, therefore, power requirements need to be minimized. The main problem in the very near future is the projected requirements for the Dark Sector which has one primary limitation which is the amount of power available through the substation. Mr. Scheuermann went on to clarify the kw requirements. The peak demands are immediate concerns. The direction from NSF is to manage power within the infrastructure at the South Pole and improve efficiencies. Efficiencies may improve by 10%.

The schedule depending on the overall construction schedule is to have the Bicep up in FY06, the South Pole telescope will be observing in the winter of 07 and IceCube will be coming on in the summer/winter of 07. One of the possible solutions under consideration is to upgrade for a new high voltage transformer which may or may not require the need for more fuel. Fuel capacity is limited to 450,000 gallons which leaves the ability to carry an average load of 950 kw through the winter. If power is maintained within the 750kw range then more fuel will not be required.

Mr. Scheuermann stated that RPSC is considering other alternative energy sources such as wind power as well, but the South Pole does not have the wind to power the turbines.

Dr. Borg suggested that a recommendation for new power plant should be addressed through the Office of Advisory Committee.

Further details regarding wind usage, cost and reliability was discussed.

Mr. Marty mentioned that the NSF will have an SPSM quarterly audit this August to confirm the construction schedule, understand our resources for flights and address the population issue.

Action items

1) RPSC FEMC will layout a yearly profile for the Dark Sector project schedules (Bicep, IceCube, etc.) and see when the 300kw limit is reached. Also, confirm construction schedule for the10-meter telescope.

2) RPSC and NSF will work with IceCube and 10-meter people to develop a list for load reduction options within their design.
3) Manage operations and science within the capacity of the new power plant as it relates to the Dark Sector.

Mr. Marty reminded everyone that the capacity for experiments projected into FY07 has been exceeded. There are areas at the South Pole that must be considered and protected, i.e. feeders to ARO and SPRESO.

Mr. Scheuermann went on to address another power issue. The operation of the current power plant is set up so that the breaker automatically trips so that equipment can be checked on before power is turned back on. The design of the new power plant is such that in the event of a power outage it will automatically try to power itself back up. The breaker that feeds the Dark Sector will not automatically trip on its own. When it automatically restarts, it may be premature which may affect equipment. Changes are being investigated.

Action item:
RPSC FEMC will investigate automatic breakers

Lunch

EMI (Electromagnetic Interference) Concerns and Considerations

Dr. Allen Weatherwax, (See Power Point presentation on web site)

Now that there are new experiments going into the South Pole, large and small, passive and transmitting, EMI has become an important concern. Based on the recommendations from the SPUC last year, this is one of those action items that RPSC and the NSF will need to address quickly. Currently there is no spectral management policy established. There is no way to find out who is transmitting what right now. He said that he would work with others to develop a spectral management policy, post it on the web site and address concerns for different instruments. Dr. Papitashvili suggested the possibility of not only being able to see what instruments are transmitting on the web site, but to be able to update their own information as well. Then the scientist will be able to decide which sector they would want their instrument to go. The scientist must be take responsibility for both transmitting and passive instruments.

As of now the scientific transmitters are the VLF transmitter (operates at about 19.4 KHz – low frequency), the Meteor Radar 46.3 MHz – 24/7 operation) and the SuperDARN (international collaborative experiment; 8 – 20MHz – 24/7 operation). Communications and unintentional transmitting needs to be addressed as well.

Last year some testing was done on the SuperDARN transmitter and based on the responses from other scientists, found that there were no immediate problems. There were some small interferences in the data, but for the most part, it was not noticeable.

Mr. Bob Warder, SPAWARS (telecom), noted that during that testing the bands suggested were not used or never knew the testing was going on. Dr. Weatherwax stated that he and Mr. Sullivan sent several notices sent out to the PI community letting them know the when they would be testing. With the data that he collected, it was determined that it needed further investigation and testing. The astronomers are looking for long term testing.

The SPUC recommended last year that the transmitters be scheduled and logged. The report also stated: *"In order to definitively demonstrate that radio frequency interference is not affecting the data, it is essential that these experimenters be able to separate data taken when a transmitter is on from data taken when the transmitter is definitely off, and that the quantity of data taken in the transmitter off state be at least as great as that taken with the transmitter on. It is therefore essential that each transmitter be off at least half of the time. To be useful, the "off" periods need to be many minutes long, and the exact times of the on and off periods should be made available in a public log. These restrictions on transmission should be permanent."* This is where the decision has to be made. A policy must be developed to address the needs of several groups who are trying to obtain some of the best measurements in the world.

Mr. Sullivan asked what the consensus was of the meteor radar since is has been operating long term. Dr. Weatherwax said that it has been continuously operating 24/7 since 2000 measuring winds aloft. It changes on the time scale of hours not minutes.

Further discussion regarding electronic equipment, power lines, thermal noise and other surrounding background interferences, and data contaminations were discussed. The biggest concern is bringing in transmitting instruments that will destroy astrophysics at the South Pole and have all their data suspect.

Dr. Weatherwax solicited input from the committee for testing parameters. The astrophysicists want to be good neighbors. They want testing to be done so they can address it.

The location of the transmitters was also discussed as well as the length and timing of the testing that should be done. As long as it is feasible, cost effective and possible the transmitters should be moved. The frequency landscape at the South Pole needs to be defined and let the science community know this detailed information. Dr. Papitashvili said that the NSF will investigate these issues.

Dr. Weatherwax suggested that the transmitting information be entered into POLAR ICE in the ORW stage and create a database where it is available to the rest of the science community whereby they can see what is transmitting, who is receiving where and how much.

Dr. Stark pointed out that the scientists need field strength estimates. They have not been forth coming in the past.

Dr. Weatherwax said that he will report to Dr. Bill Bristow, PI for SuperDARN, that this is a concern from this group and that it is a priority.

Dr. Stark suggested that the normal operating duty cycle for a transmitter be half on and half off. However, if the various receiving groups say that it is ok, they can go to full-on operation and if the receiving groups want to go to half on-half off, then they would have to justify why; and have the transmitters be prepared to go to a half time operation upon request.

Dr. Papitashvili said that he liked that suggestion and agreed to consider that option. He suggested that we allow an entire season to analyze their data from SuperDARN this way. Then if, after two years, the groups agree that nothing has been found, they can go back to continuous operations. This will take a coordinated effort from all the science groups. Some experiments would only take a few weeks or a few months to collect the information.

Dr. Bill Holzapfel suggested that it may not be appropriate to do summer/winter testing.

Dr. Weatherwax suggested that if a scientist is going to deploy a transmitter that during the initial design phase of the instrument, that there be a certain amount of flexibility built in and let them know up front that it may have to operate half on-half off and provide a field strength map.

It was suggested that they provide a useful time scale and consider moving the very radio sensitive instruments and moving them a considerable distance from station.

Action item:

Change recommendation to agree to transmit half on-half off whenever requested and to form a working group with Dr. Bristow. Dr. Weatherwax said that he would organize a web site and maintain it for collecting information and start organizing VLF, Meteor Radar and SuperDARN, communication and low frequency transmitters and get field patterns up from Dr. Bristow. Mr. Sullivan said he would be the POC. Dr. Weatherwax asked everyone to send him an e-mail to let him know what they want to know, he will put together a list and send it out to everyone who is transmitting.

Mr. Dunbar said that he would like an action to have a feature in POLARICE during the ORW phase that links to let RPSC know what the environment is to which the scientist is proposing. He also suggested that after Dr. Weatherwax gathers this information, RPSC maintain the web site for the scientists.

Break

Working Groups

Everyone agreed this morning that the working group would have a representative from the NSF, RPSC and the science community.

Action item:

RPSC (Dunbar, Sullivan and Kaminski) will rewrite the SPUC Charter.

Liquid Helium Working Group (LHeWG)

Mr. Al Baker, South Pole Assistant Lab Manager

Mr. Baker stated that the past history of cryogenics at the South Pole had been deplorable. Recognizing the necessity for a successful season, the grantee community, RPSC, on-ice technicians and the NSF worked together creating the LHeWG. The new cryogenics facility was finished last season so now there is a warm working area. The boil-off problem from the previous season was resolved and additional funding for two cold-heads was received from the NSF to outfit all three Wessington Dewars (now there are three).

He said that he is soliciting resumes for a new cryogenic technician. Also, Dr. John Ruhl is stepping down as the LHeWG Grantee POC and will need a new on-ice grantee representative.

New Working Groups

SCOARA

Mr. Sullivan noted that next on the agenda is the question of how the SPUC is going to integrate with the science coordination offices and their relationships, money and abilities.

Dr. Borg said that this issue is under discussion and that it should be discussed with Dr. John Carlstrom.

Mr. Sullivan defined SCOARA as the Science Coordination Office for Astrophysical Research in Antarctica. It is an effort to help coordinate activities in science in the Dark Sector including population, stocking the machine shop, educating new PIs, sharing resources, etc. It will have some duties that the SPUC will not.

Dr. Stark went on to say that SCOARA is the good logistical things that CARA used to do to enhance science – most of which involved the Dark Sector. This is an example of where scientists had a little of money and a little discretion of their own. A lot of the successes that came out of Dark Sector would not have happened except for this kind of CARA logistics recognizing that the logistics is best controlled by the scientists and not by RPSC, i.e. having the machinist be a university machinist who helped the entire station, proved to be much more effective than what RPSC could have provided through their regular hiring process.

Dr. Papitashvili said if it is funded it is a project that would help other projects be more effective as a whole. The goal is to not only repeat what was at CARA, but to have the community with big projects work effectively to help small projects as well. It is a pilot project to see how IceCube and the 10-meter projects will affect the community in several years. However, the SCOARA does not yet exist.

Dr. Scambos asked if SCOARA will have a budget. Mr. Stone stated that like the LTER resources will be carved out and set aside allowing the group to manage within that amount. The SCOARA will not have an RPSC budget.

Dr. Borg noted that the NSF will not be giving SCOARA money for management. SCOARA, LTER and CARA are different entities proposing coordination of projects across the program. Not precluding decisions NSF for science management. It will be a coordination role, but not making decisions. There is a tremendous value in the community getting together and self-organizing as much as possible.

Dr. Papitashvili went on to say that if SCOARA shows an improvement for coordinating other projects that will service a number of experiments, then it will be funded. SCOARA is about servicing and coordination.

Options for the Future

Dr. Papitashvili said that he would like to see some coordination supporting the machine shops, power, IT, and population evolve in the next few years as IceCube and the 10-meter become operational. He said that having SCOARA will help to understand and manage concerns associated with the big and small projects and IceCube. He does not see any other problems that have not already addressed at this time.

He feels that these meetings have been very productive. He said that he would like to see the meeting next year be of a different nature where each group becomes more familiar with each others science (the whys, results and issues) in more of a an educational forum.

His goal for the next five years is to set up a mechanism for everyone in the program to work together and more smoothly.

Mr. Sullivan addressed the sector management. Everyone was to review the ASMA documentation. Dr. Papitashvili did not send out the ASMA to community, but he will distribute to all PIs. Mr. Stone suggested that anything that needs to be distributed to community should be on web site.

Action items:

Mr. Sullivan will check to see if SOPs comply with the ASMA (Antarctic Specially Managed Area) document and update. Current maps may need to be replaced with new maps from ASMA.

He will develop a Dark Sector SOP. Mr. Marty suggested requesting the services of Ms. Katy Jensen. He will contact her. It will include such things as no transmission in winter, exterior safety lights and any feedback from the science community.

Meeting adjourned at 3:00 pm to commence the Executive Session.

Action Items

Action Item:	Topic	Responsibility Party	Date Due
All PI and SPUC Meeting Action Items			
Standard Operating Procedures (SOP) will be updated on an annual basis and reviewed by the NSF. SPUC input required to capture science needs as related to sectors.	Sector Management	SPUC, RPSC South Pole.	
Population at the South Pole station will be reduced to fit within the stated bed space. SPUC input will be required to help with grantee population numbers.	Population Management	SPUC, RPSC South Pole and the NSF.	
All USAP participants need to consider if their cargo is a candidate for Air Drop at South Pole.	Logistics	All PI's, RPSC South Pole and the NSF.	
Expand use of Working Groups to include personnel from the SPUC, RPSC and NSF(i.e. Cryogenics) to solve problems and identify a POC.	SPUC status and strategy	SPUC, RPSC South Pole.	
RPSC IT to include members of SPUC IT Working Group in IT design reviews to capture the grantees needs.	SPUC status and strategy	Dave Leger	
RPSC to solicit nominees for SPUC vacancies.	SPUC status and strategy	Charlie Kaminski and Paul Sullivan	
RPSC and NSF to select SPUC membership from the active candidate pool.	SPUC status and strategy	Charlie Kaminski and Paul Sullivan	
RPSC to provide specifications on the new Land Mobile Radio (LMR)	IT, Bandwidth and Data Storage	Todd Phillips	
Query Science community of data storage needs and compare to SPSM Storage Area Network (SAN) capabilities.	IT, Bandwidth and Data Storage	Bill McAfee and Dave Leger	
Allan Weatherwax, Nick Powell and Paul Sullivan to be POC's for the EMI working group.	EMI	Allan Weatherwax, Nick Powell and Paul Sullivan	
Post ASMA documentation on a USAP website	Sector Management	Paul Sullivan	
RPSC will rewrite the charter for User Groups.	SPUC status and strategy	Charlie Kaminski and Paul Sullivan	
A power allocation working group will be set up with Bob Pernic as the SPUC representative.	Power	SPUC, RPSC South Pole and the NSF.	
RPSC to solicit feedback from the grantees for which circuits require low voltage protection and/or automatic breakers for power outage recovery.	Power	FEMC - Dan Mazzeo	

Additional Action submitted by current SPUC Chair Tony Stark on 7/19/2005			
1) 24/7 e-mail: Tests of the Raytheon system are to happen in July, and the help of science groups will be solicited in order to provide realistic inputs to the test. If the Raytheon system is not working by the end of August, it may be that the design is fatally flawed and other approaches should be tried. The potential fatal flaw is the Raytheon system's dependence on a level of throughput and connectivity from Iridium that may not be feasible.	IT, Bandwidth and Data Storage	SPUC, RPSC South Pole.	
2) RFI from SuperDARN: There are concerns about potential serious problems for some experiments resulting from SuperDARN array transmissions. In order to evaluate these concerns, the SuperDARN group should provide estimates of peak field strengths and frequencies at the Dark Sector.	EMI	Allan Weatherwax, Nick Powell and Paul Sullivan	