Planning Meeting for the S-Pol Deployment at TiMREX

November 14, 2007 meeting notes

ATTENDEES

Brigitte Baeuerle, Jeff Bobka, Chris Burghart, Wiebke Deierling, Maureen Donovan, Scott Ellis, Jonathan Emmett, Gordon Farquharson, Dennis Flanigan, Kyle Holden, Wen-Chau Lee, Sandra Nilsson, Al Phinney, Bob Rilling, Vidal Salazar, Briesa St. Martin, Mike Strong, Tammy Weckwerth, Jim Wilson, Joe VanAndel

GENERAL

- Regular meeting time will be held weekly on Wednesdays from 10:30-12:00.
- All email communications should go through the TiMREX mailing list.
- No additional mailing lists are currently needed.

UPDATE ON NOVEMBER 2007 PLANNING MEETING IN TAIWAN

Ben Jou presented the current funding from Taiwan for the radiosondes and dropsondes.

A summary from the sounding and radar groups were presented by David Chen, University of HI, and Jim Wilson.

Operation Center and data management needs were also presented.

SPOL SITE

- Two sites for S-Pol were discussed: they have been named the *"Levy site"* and the *"Academy site"* and are about 30 km apart. Both sites are acceptable for SPOL operations; however RSF scientists would prefer the Levy site. Public approval for the installation of the radar may be needed in Taiwan and next year is an election year. There is a good chance that the Levy site may lead to public protest, while the Academy site is less visible. Wen-Chau also pointed out that the Central Weather Bureay (CWB) would prefer the Academy site for internal political reasons.
- At this point arrangements for both sites will be pursued in parallel (e.g., frequency allocation). Bobka has already prepared site preparation documentation for the Levy site.

Concerns were voiced regarding potential interference from the air force surveillance radar. S-Pol's primary operating frequency (2809 MHz) will interfere with the other radar in the area (2800 and 2900). Gordon suggested that another interference test, lasting about one week, be conducted. RSF engineers and technicians will configure S-Pol to use the second operating frequency (2786 MHz) later this month. ***Spectrum scans need to be tested by the end of the month and issues regarding frequency licensing must be resolved by mid December*** to have enough time to reconfigure SPOL, fine tune the receive filters, change and test the frequency.

- Trees may have to be potentially cut down at both sites.

COMMUNICATIONS

- A T3 line (digital signal level 3 T-carrier) is in close proximity of the Academy site and we may be able to tap into it. The cost for this installation is being investigated by Taiwan. The cost for a communications link installation at the Levy Site was quoted at about $50K.
- It is possible to get 2 Mbit/s through a satellite link to the CWB. However, access to the internet may be restricted and we may have to deal with firewall issues outside of our control. Please see Bob Rilling's emails on this topic for more information [1, 2, 3]. To overcome access problems, paying for a commercial satellite link will be investigated. This link would allow SE to work on the system without being bogged down by data transfer activities. A similar set-up (1 Mbit) was done during the most recent PASE project on Christmas Island through a commercial provider from Australia. Total cost for a six week deployment on Christmas Island was approx. 24K. ***About 2 months of prep time is needed to put arrangements in place, so we need a decision by early March.*** A total of 20K was budgeted in the DP estimate for satellite communications for TiMREX.

OPS CENTER AND DATA ACCESS

- There was confusion on whether Ops Center infrastructure would be provided as part of the S-Pol set up. When the S-Pol budget was prepared, the Ops Center set up was assumed to be the responsibility of Taiwan, and TiMREX was treated as a stand-alone SPOL project. Therefore funding for any additional requirements at the Ops Center need to be covered by non-deployment funding. It was decided that the cost and man-power of this task would be investigated, and money be found to pay for the setup of a data server.
- According to Jim, S-Pol data needed at the operations center include the following variables: Z, V, ZDR (not essential), precipitation estimate (all algorithms), particle ID, and refractivity. Researchers at the operations center also need access to data from operational instruments that exist in Taiwan. This issue does not affect RSF staff, but it may affect the bandwidth requirements of the data link to S-Pol if researchers are located at S-Pol. Wen-Chau Lee asked scientists to look at the data catalog web site (http://61.56.10.120/) to determine if the data on this site would meet the needs of the researchers.
- Questions exist regarding the data format needed at the Ops Center: netCDF or mdv files; and where the conversion will take place. DORADE files are needed if there is a CIDD display at the operations center. It is not clear who would set up a SIDS machine.
- Two science stations are available at S-Pol. Data will be stored on a RAID.
- Joe VanAndel will investigate the requirements for the machine and the software for translating between formats (e.g., how many machines, how much time to set up, software requirements, disk space (about 42 days), processors etc.)

- If researchers are located at S-Pol and need to connect to the S-Pol network, pre-configuration of non-NCAR scientists' computers was proposed.

ADDITIONAL SPACE AT S-POL

- If TiMREX researchers are located at the radar, then an extra trailer is needed to accommodate the additional staff. Wen-Chau Lee thought that the upper limit of researchers from the various organizations at any one time would be two from CSU (Rutledge), two from the University of Washington (Houze), two from NCAR and six, including students, from Taiwan.
- The extra trailer would need to be located within the S-Pol lightning protection perimeter if it was electrically connected to S-Pol. Data will be done via a fiberlink. Al Phinney was tasked with investigating a surge suppressor that could protect S-Pol from a surge if the extra container was hit by lightning and was outside the lightning protection perimeter. It was also proposed that the extra container could use commercial power, but this would have to be investigated.

The Taiwanese will pay for certain costs associated with the experiment so that work on making S-Pol ready for the deployment can be completed. All requirements for these tasks must be sent to both Sandra Nilsson and Ben Jou. It is still uncertain how much money is available to finish the S-Pol work.

LOGISTICS – HOUSING, SHIPPING:

- The CWB is searching for apartments (3 bedrooms with shared kitchen) near to the proposed radar sites. The NCAR technicians stated that they would not accept sharing apartments and want to stay in hotels. Sandy also pointed out that other arrangements, e.g., transport to the SPOL site, will become rather complicated if people are spread across several places.
- Tear down and packing for SPOL will start the beginning of February 2008. We will ship in March 2008. Therefore, final configuration of S-Pol systems for deployment at TiMREX must be complete by February 2008.
- Staff who will stay for more than 30 days will require a visa (e.g., Gordon)

HEALTH

- Maureen has scheduled a vaccination clinic with Passport Health to be held on 11/29/07 at 1:00, room FL1, 2133 to provide:
    - Hepatitis A & B (series takes 6 months) hepatitis shots are good for 20 years. If necessary you can receive the accelerated series.
    - Typhoid (one shot)
    - Japanese Encephalitis (takes 4 weeks of 3 shots)
    - Tetanus (one shot or 4 pills every other day). The shot is good for one year, pills last five years.
    - Polio Booster (one shot)
    - The follow up visits for the JE shots are 12/6 and 12/13.

ACTION ITEMS

- **Vidal Salazar** will work with **Bob Rilling** to determine our options for a commercial satellite data link. He will contact a satellite service provider to get a cost estimate. We will need approximately 2 month lead time if we go this route.
- **Al Phinney** will investigate options for surge suppressors to protect S-Pol in the case of S-Pol powering an extra container that is located outside the lightning protection perimeter.
- **Briesa St. Martin** will place the current TiMREX project manual on the website and will email the TiMREX mailing list the web location of the manual. **Everybody** is required to review it and provide feedback.
- **Gordon Farquharson** will post the staffing schedule on the TiMREX website.
- **Briesa St. Martin and Maureen Donovan** will determine if any staff needs visas and we help with passports requirements.
- **Maureen Donovan** will work through Wen-Chau with a Taiwanese counterpart to identify housing.
- **Gordon Farquharson, Maureen Donovan, and Wen-Chau Lee** will work with Sandra Nilsson to fine tune the budget.
- **Jonathan Emmett** will work with Brigitte Baeuerle and Maureen Donovan to identify shipping and customs requirements. For information on Sea Jet and NTU (http://www.sea-jet.com/).
- **Jeff Bobka** will work with Wen-Chau for a Taiwanese contact for site preparation.
- **Wen-Chau Lee** will get GPS coordinates for the new academy site and give these to Jeff Bobka.
- **Wen-Chau Lee** will send an email to the TiMREX mailing list that contains the link to the data catalog.
- Joe VanAndel will check with Mike Dixon to see whether he is going to Taiwan
- **Jim Wilson** will provide scientific data distribution needs to Joe VanAndel (number of parameters that need to be stored, amount of time file must be available).
- **Joe VanAndel** will research the cost of a data server that could be located at the operations center. He will also identify the software that is required for that machine.
- **Maureen Donovan, Wen-Chau Lee, and Jim Moore** will investigate diplomatic issues, e.g. providing a list of people to the US Embassy.
- **Brigitte Baeuerle, Gordon Farquharson, Al Phinney** will work with UCAR Safety and Site Services for a TiMREX safety review.
- **Scott Ellis** will identify the needs of the scientists at S-Pol (additional data, etc).

- **Scott Ellis and Jim Wilson** will define the scan strategies to be implemented at S-Pol.
- **Wen-Chau Lee** will identify the operating frequency for S-Pol by mid-December.

Responsibilities

The following people have been identified to coordinate the organization for each of the following topics.

Topic	Coordinator
Project manual	Briesa St. Martin
Passports/Visas	Maureen Donovan
Housing	Maureen Donovan
Medical	Maureen Donovan
Schedule	Gordon Farquharson
Budget	Maureen Donovan, Gordon Farquharson, Wen-Chau Lee, Sandra Nilsson
Shipping and Customs	Jonathan Emmett with help from Brigitte
Site Preparation	Jeff Bobka
Operational status of S-Pol (hardware, software)	Gordon Farquharson
Real time data distribution	Bob Rilling
Coordination of Science needs (access to sounding and other data (lightning network, mosaic datasets, scanning strategies)	Scott Ellis
Safety	Brigitte Baeuerle, Gordon Farquharson, Al Phinney

References

[1] http://www.eol.ucar.edu/pipermail/timrex/2007-November/000009.html
[2] http://www.eol.ucar.edu/pipermail/timrex/2007-November/000003.html
[3] http://www.eol.ucar.edu/pipermail/timrex/2007-November/000012.html