

Subject: Space Communications Customer Forum #9 Summary
Date: August 12, 2004
Location: Building 3 Goett Auditorium, Goddard Space Flight Center (GSFC)
Convened: 1:00 p.m. **Adjourned:** 4:30 p.m.

I. Welcome and Introductory Comments

Mr. Al Levine/Code 451, Service Planning Manager for Customer Commitment, convened the Space Communications Customer Forum (SCCF), renamed from the Mission Services Customer Forum (MSCF), by welcoming everyone to this, the 9th forum. Mr. Levine noted that the forum is for the service providers as well as the flight projects, and it is intended to generate feedback and dialogue. Mr. Levine asked that participants complete the survey form, provided in the package, with their comments, opinions, and suggested topics for future forums. The surveys will serve to assess the effectiveness of the forums, identify areas for improvement, and provide feedback to center management. Mr. Levine noted that it was recently suggested to incorporate splinter group meeting in future forums, and asked for feedback on this item from the audience.

Note

Presentations referenced in the following paragraphs are available online at URL <http://scp.gsfc.nasa.gov/sccf/>.

II. Opening Remarks

Mr. Jon Walker/Code 451, Deputy Program Manager for Customer Commitment, provided opening remarks. Mr. Walker emphasized that the Program is committed to hosting these forums and to making them useful to the customers and service providers. Mr. Walker reiterated the importance of receiving feedback concerning the forum, and encouraged participants to complete the survey form.

Mr. Walker presented an overview of the Space Communication Program Management's goals and objectives including the program's mission, vision, and commitment to customer satisfaction. Mr. Walker noted that the impact of recent changes within NASA are being assessed; however, the Program is confident that it can meet the challenges in a transformed NASA by continuing its role of being innovative, expanding horizons, and embracing change with the support of current resources and partners. Mr. Walker noted that today's briefings would provide information on plans to enhance capabilities in the Ground Network (GN) and Space Network (SN), as well as in the partner organizations.

Mr. Walker concluded that while success can be measured in many ways, our success criteria is relatively simple. We want to satisfy our customers!

III. Action Item Review

Mr. Levine reviewed the action item that was assigned to Mr. Vince Turner at the last Customer Forum, which read, "provide a response to the question, 'why do items that are sent to abuse take so long to be addressed?'" Mr. Levine summarized the response provided by Mr. Turner as follows:

The GSFC abuse@abuse.gsfc.nasa.gov provides an automated response to each submission sent. The abuse queue is reviewed at least twice per workday, and items which can easily be addressed or quickly filtered are implemented on the spot. Frequently however, the message sent to us does not include sufficient message header information, and must be investigated prior to implementing the filter.

Previously, the blocks we put in place were located directly on our POP and Relay servers, and proof of filter implementation was provided through the CNE web page. Now, our mail and domain blocks are placed on our e500 SPAM & Virus appliance. Unfortunately, the list of blocked items can not be downloaded or reprinted without a lot of work, so proof is no longer provided as before. With this in mind, we may have had your particular requested filter in place that same day, it just that no additional feedback was provided.

If you feel that a requested block has taken too long, or if you wish to check on the status of a specific block, please call the CNE Call Center and open a trouble call. Additional information is available at: <http://cne.gsfc.nasa.gov/email/other/spamblock.html>

The action is considered closed.

IV. Open Floor

Mr. Levine provided updates on the following scheduling issues that were recently addressed with WSC scheduling personnel:

1. Critical Support: Mr. Levine defined the activities that are designated as critical. When declaring a support as critical, users are expected to employ the "Good Neighbor Policy".

Question from audience: Is there a process in writing for declaring critical support and how it is validated? Mr. Levine responded that there is, and took an action (**SCCF #9 RFA-01**) to publish the documentation that defines the process for declaring critical support.

2. Launch Slip Rescheduling: Mr. Levine explained that a new policy is being implemented for rescheduling GN supports following launch slips. The new policy stipulates that rescheduling will cover only the first 24 hours initially, and following launch, the schedules will be worked as quickly and as far out as possible. This will cut down on the workload and still provide the required support.

Question from the audience: Once the schedule is in place for the first 24 hours and the launch goes, how long will it take to issue schedules for the next 24 or 48 hours. Mr. Levine responded that the schedules for the subsequent periods could be generated in a matter of hours.

3. Mr. Levine stressed the importance of submitting schedule requests at the beginning of the Forecast period. This would allow the schedulers more time for conflict resolution.

Mr. Levine opened the floor to the audience for comments, questions, and/or concerns.

V. Space Network Future Services

Mr. Dave Israel/Code 567, SNIS Product Design Lead (PDL), presented a status on the Space Network Internet Protocol Services (SNIS) and the Fast Forward service, two SN future services.

The SNIS is a SN product that will make spacecraft systems look and operate just like any other node on the IONet; provide operational IP services that were previously supported in test and demonstration modes; and enable end-to-end, standard IP communication between all mission resources [e.g., spacecraft, control center, Principal Investigators (PIs)]. SNIS will be a new option for future mission, not a replacement for any current systems. Unlike the WDISC and Demand Access Service PTPs service which require PTPs to be configured before each pass to determine

where to send user data over the ground network, SNIS will autonomously connect space elements and ground networks into one addressable network for routing data to one or more destinations. The system requirements, preliminary architecture, and operations concept are currently under development. The System Requirements Review (SRR) is planned for October 2004 and the target operational date is March 2007.

Mr. Andre Fortin/Code 565 is the PDL for Fast Forward. The Multiple Access (MA) Fast Forward service is intended to be an autonomous, data driven, near-Demand Access Forward Link capability that would complement the 24 x 7 Return Link DAS via the MA service. The Fast Forward capability would reduce operational overhead; eliminate the long-lead scheduling; and enable efficient, rapid utilization of unused MA forward time. An initial version of Fast Forward is being considered as an addition to the existing SN services, while a more customized version is envisioned for the TDRSS-Continuation (TDRSS-C) era. Studies are underway to evaluate options and impacts. The IOC and FOC target dates are TBD. Mr. Israel noted that user input and feedback is being solicited for both of these services. For more information about these services, contact either:

- SNIS Product Design Lead
Dave.Israel@nasa.gov
NASA/GSFC Code 567.3
(301) 286 – 5294
<http://snis.gsfc.nasa.gov/>
- Fast Forward Product Design Lead
Andre.Fortin@nasa.gov
NASA/GSFC Code 565
(301) 286 - 7829

Question from the audience: When will the Fast Forward service be ready for testing with existing users? Mr. Israel responded that he could not provide an accurate date yet, but it may be ready within a year.

Comment from the audience: In terms of latency with the Fast Forward service, once a request is made, a turnaround of half an hour is sufficient.

Question from the audience: What steps are being taken to ensure the data path to spacecraft is as secure as the ground network portion, and what version of IP security is being used. Mr. Israel responded that for now the plan is to use IP version 4 for security, and to reevaluate this issue once there is a user for IP version 6. Mr. Israel noted that there are several actions being taken to ensure that the data path to the spacecraft is secure. In addition, Code 297 is participating in these efforts, and the appropriate security documentation will have to be completed for each task.

VI. Space Network

Mr. Keiji Tasaki/Code 452, SN Project Manager, provided an overview of the SN support status.

There are 9 spacecrafts in the network. Currently, the F-7 and F-10 spacecrafts are in storage, and F-10 will be moving to 41°W for operations. The proficiency levels for both critical supports and normal operations increased over the last three months and are currently above 99.98 percent. The SN provides an average of 10, 000 hours of support per month. The SN Error/Anomaly Trends for operator errors, software errors, and hardware errors decreased for the month of July 2004.

Mr. Tom Gitlin/Code 452, SN Deputy Project Manager, presented a status on SN initiatives.

Mr. Gitlin discussed the Demand Access System status. The DAS Operations Readiness Review (ORR) was held on May 13, 2004 and a Delta-ORR was held on June 17, 2004. The project feels the system is ready, and NENS continues to test the system to ensure that it is ready for the Swift launch in October 2004.

Mr. Gitlin discussed the TDRS KSAR Upgrade Project (TKUP). In March 2004, the decision was made to discontinue the Ka-Band Data Services and the Ka-Band Flight Services projects, and to focus on a new project to provide a data service for the 225 MHz channels using bandwidth efficient modulation and coding schemes, as well as to explore potential synergy with replacement of the existing 225 MHz channel data service equipment due to obsolescence. The TKUP was proposed to management and approved in July 2004. Mr. Bryan Gionanni is the Lead for this effort. TKUP not provide data rates in excess of 600 Mbps or provide a Ka-band end-to-end test capability. Mr. Gitlin outlined the proposed TKUP architecture and proposed schedule. The project is in the kickoff phase now with a completion date of 2008.

Ms. Donna Sadof/Code 452, BRTS Product Design Lead, discussed the Bilateral Ranging Transponder System (BRTS) Augmentation status. The BRTS is critical in providing SN customers with extremely accurate tracking services. The system is over 20 years old and difficult to repair. The loss of BRTS would adversely impact the Sun's ability to meet customers tracking requirements. As a result, efforts are underway to augment the existing system with new transponders. The Systems Requirements Review was held on March 3, 2004 and all associated Requests for Actions (RFAs) have been closed. A QSS analysis task is in progress to determine if one of the sites can be removed without impacting support capabilities. The BRTS effort is planned for completion in April 2006.

Ms. Sadof discussed the status of the GSFC Orbital Information Group (OIG) website. For years the GSFC OIG has received Two Line Elements (TLEs) from Cheyenne Mountain and posted them to the OIG website. Last fall, the Air Force was granted authorization to assume responsibility of this effort. Once it is approved, a notice will be posted to the OIG website informing users of the pending transition. The transition is expected to be seamless with most of the current data being replicated on the Air Force website. Ms. Sadof noted that some users have become accustomed to using the OIG website for retrieving TLEs, and cautioned that the website was never meant to be an operational system for TLEs. There are other options for requesting TLEs including the Form-1.

Mr. Gitlin discussed the TDRS Constellation status and plans. Mr. Gitlin outlined the current operations designations, the ground station and SGLT assignments, and the future plans for each of the spacecrafts in the constellation.

Mr. Gitlin discussed the Second Guam Antenna System (SGAS). Mr. Fortin is also leading this effort. After Guam was hit with the Super Typhoon on December 8, 2002, a decision was made to install a back-up antenna system at the site. The requirements definition and system design is complete. The project is now in the procurement phase and facility design is 50 percent complete. Recent design changes include accommodating space for another future SGL antenna, and increasing the SGL antenna size from 11 meters to 15 meters. This is a NENS task and it is expected to be completed by October 2005.

Mr. Gitlin discussed the Space Network Access System (SNAS). SNAS is intended to be capable of supporting all SN customers by providing a network-based system that incorporates features from the User Planning System (UPS), the SWSI, and other SN customer-required functionality. The previous SNAS PDL departed, so SNAS implementation is on hold pending the appointment of a new PDL. A task order was initiated with the NENS contractor to assess SNAS until the development process begins. Several activities have been completed under the task with a few yet to be completed. Once the new PDL is assigned, the schedule for SNAS development will be determined.

Mr. Gitlin discussed the Guam DS3 status. The purpose of this effort is to increase the bandwidth available for SN customer support through GRGT by upgrading the current 3-T1 circuit configuration (aggregate of ~4.6 Mbps) to a DS3 circuit (~45 Mbps). Both DS3 circuits are installed and have been accepted by the carrier. One of the circuits is being tested by supporting GDIS operations. Transition to the DS3 circuits (without bulk encryption) is expected to occur in October 2004.

VII. Ground Network

Mr. Roger Clason/Code 453, GN Project Manager, presented the GN status.

Mr. Clason discussed the activities that are planned for the McMurdo (MSG) stations. MSG equipment will be moved from the National Science Foundation (NSF) lab to the Joint Space Operations Complex (JSOC) during January 2005. MSG will be out of service for the duration of the equipment move. Several support upgrades are planned for MSG including the addition of an X-Band uplink capability for ST-5, as well as upgrades for ERS-2/GOME and DART. A demo of support capabilities for DMSP is planned October 2004. It is anticipated that operational support for DMSP will begin in the next Fiscal Year. Mr. Paul Garza is the point of contact for the MSG activities.

Mr. Clason discussed the status of the Alaskan station. The Poker Flat station was overrun by a forest fire on June 30, 2004. The airspace surveillance radar equipment was destroyed; however, a new capability will be in place for the next sounding rocket campaign in January 2005. The PF1 11-meter antenna that failed on November 20, 2003 is still inoperable, but additional capacity is in place to meet the load requirements. DataLynx is developing a plan to meet orbital requirements at Poker Flat.

Mr. Clason also discussed the MILA/PDL and LEOT status. PDL experienced a run away antenna. A Failure Review Board was conducted and the cabling was replaced. The system is being modified to preclude a recurrence of this failure. The system will be certified for Return to Flight. MILA has been certified to provide orbital support for TRACE, SWAS, SAMPEX, and WIRE. Work is progressing on the certification for TOMS-EP. Efforts are underway to replace the LEOT control software to address performance issues and obsolescence. LEOT software replacement at WSG is scheduled for completion in the Spring of 2005. LEOT software replacement at ASG is TBD.

Question from the audience: Is there an expected date for when the SG3 security documentation will be signed? Mr. Clason responded that it is out of his hands, but he expects it will take several weeks.

Question from the audience: Is there any plans to add command capability at the ASF station at the University of Alaska? Mr. Clason responded that there is no plan to add that capability.

VIII. Customer Commitment Office, Code 451

Mr. Walker presented a status of the Customer Commitment Office (CCO).

Mr. Walker outlined the services that the CCO offers and/or coordinates, and noted that the CCO delineates the requirements that a user may have for the various services to ensure that everyone is on the same page and the mission requirements can be fulfilled. The Space Communications Program, which the CCO is a part of, was reorganized at the end of the CSOC contract by adding the Mars Laser Communications Demonstration (MLCD) Project and the Transformational Communications Architecture/TDRS Continuation (TCATCA/TDRSS-C) Project. The MLCD will provide services for Deep Space and Lunar LaGrange missions while the TCA/TDRSS-C project is looking to ensure that the SN is adequately sized to meet future capabilities and requirements. Mr.

Walker described the SCP's involvement in the life cycle of a project and highlighted several of the processes and supporting documents utilized by CCO personnel. Mr. Walker noted that the CCO's goal is to ensure the success of the customers' missions.

IX. IONET Service Classifications

Mr. Norman Reese/USGSA, presented a status on the IONET Service Classifications.

Mr. Reese noted that the IONET have several service classifications that are based on security and operational constraints. The service classifications are the Open IONET, the relative new Restricted IONET, and the Closed IONET. The Restricted IONET was introduced to provide an IONET network that can support mission-critical real-time data flows for projects which have requirements for connections to other networks. The Restricted IONET is an intermediary service between the Open IONET and the Closed IONET. Mr. Reese summarized the capabilities and restrictions for each of the service classifications. Mr. Reese also discussed the performance standards for IP routed data by service category.

X. NISN Interfaces for Project Requirements and Funding

Mr. Jerry Zgonc/Code 291, NISN Service Manager (Code Y), presented a status on NISN interfaces for project requirements and funding.

Mr. Zgonc identified the GSFC and MSFC civil servant personnel who serve as NISN Service Managers in the Customer Interface Group (CIG). Mr. Zgonc also identified the GSFC and MSFC UNITEs support personnel that are part of the CIG team. NISN is developing a requirement template for new project communication requirements that will be added to existing Project PSLAs and NRDs. Projects can complete the requirements template or request assistance through the NISN CIG. Project mission requirements must be coordinated with and completed by NISN CIG. Details of requirements as well as a Project technical and funding point-of-contact will be required. Required funding transfers must be coordinated with the NISN Business management Group at MSFC.

XI. JPL/Deep Space Mission Systems

Mr. Gene Burke/JPL, presented a status on the DSN Resource Allocation Planning and Scheduling Office (RAPSO).

Mr. Burke discussed the GSFC missions currently supported by the DSN, noting that most of the missions require S-Band support; the DSN antenna configurations; and DSN antenna downtimes through 2005. For more information, visit the DSN website at <http://rapweb.jpl.nasa.gov>

Mr. Burke noted that there are obsolescence replacement tasks under consideration to upgrade components on the 26M, as well as plans to replace components on the DSS-27. The outcome of the budget activities that are in progress will determine the extent of the upgrades.

Question from the audience: What is the life extension for the 26 meters after obsolescence replacement is done and will there be a big impact to the users. Mr. Burke responded that the impact will be the amount of downtime needed to replace the Hydraulic Drives and complete the electronic upgrades, which is being estimated at 30 or more days for each complex. The life extension would allow support capability to 2010 and beyond if required.

Comment from the audience: It was noted that there are advocates at HQ and JPL that would like to see the 26m and the DSS-27 closed in the 2007 – 2008 timeframe, although there are no firm

decision along those lines. This affects our interest in during upgrades since we do not want to make a large investment in something that may be closed in a couple of years.

Question from the audience: The SN relies on the 26m quite a bit, so should the SN start lining up other resources for emergencies for support. Mr. Burke responded that the answer is no. More information will be available after the POP activity at the end of September. In addition, the other 34m antenna that is S-Band capable will be available for emergency support.

XII. Space Science Mission Operations

Mr. Ron Mahmot/Code 444, Space Science Mission Operations Project Manager, presented a status of the Space Science Mission Operations (SSMO) Project.

Mr. Mahmot provided an overview of the SSMO organization and Mission Set, and discussed updates to the Mission Set per Office of Space Science guidance.

Mr. Mahmot noted that SSMO is interested in Space Link Extension (SLE) as a means to promote ground station interoperability. The essence of SLE is to provide a standard way of accessing Space Link resources (i.e., ground stations, relay satellites) using a standard connection protocol. Mr. Mahmot described the rationale for and benefit of using SLE. The DSN and ESA currently use SLE to facilitate interoperability and the SOHO SLE development effort is underway. Mr. Mahmot provided an overview of the SLE Testbed architecture, as well as accomplishments of the Testbed. The project evaluated multiple SLE API products and chose the Anite SLE API product. The Anite SLE API is a COTS product with available customer support and it supports UNIX. A full featured SLE delivery to the MOC for Acceptance Testing is projected for November 23, 2004.

Mr. Mahmot noted that SSMO is exploring a business case for brokering a commercial bulk buy of passes via a NENS Task Order. This would leverage the purchase power of multiple missions to provide a flexible capacity to be shared as needed at an overall reduced cost.

XIII. Earth Science Mission Operations

Mr. Ed Macie/Code 428, ESMO Operations Director, presented a status on ESMO activities.

Mr. Macie provided an overview of the ESMO's mission objective, organization, and mission description.

Mr. Macie identified the satellites that make up the Morning and Afternoon Constellations and described the relative position of the satellites in their on-orbit configuration. The first two elements of the A-Train, Aqua and Aura, are now on orbit with Parasol scheduled to join the constellation in December of 2004. CloudSat and CALIPSO will join the constellation in late Spring 2005.

Challenges confronting the project include phasing out the ECS Development Contract by the end of January 2005 and the need to continue to refine the metrics for network and communications support.

Mr. Macie discussed the project's schedules, the combined GN station anomalies, and data capture/delivery metrics for Terra and Aqua

XIV. Human Spaceflight

Mr. Jim Bangerter/Code 451, Human Spaceflight Network Director, presented a status on Human Spaceflight.

Mr. Bangerter summarized the Integrated Network Return To Flight (RTF) activities and the ISS activities.

XV. Action Items

The following action item was assigned during the Customer Forum:

Action Item: SCCF #9 RFA-01
Assignee: Al Levine
Action: Publish the document that contains the procedure for determining critical support.
Reference: *Scheduling Issues, page 12*
Due Date: Next Customer Forum

XVI. Closing

Mr. Levine closed the forum by thanking everyone for participating in the forum.

(Original approved by:)

Al Levine
Service Planning Manager
Customer Commitment Office, Code 451
NASA/Goddard Space Flight Center