



Space Network Ground Segment Sustainment (SGSS) Newsletter

SGSS Goals and Objectives

- Reduce communication costs for our customers
- Implement an extensible, flexible, and scalable ground terminal architecture
- Continue to provide existing Space Network functionality
- Reduce lifecycle costs
- Enhance the continuity of operations posture of the Space Network
- Transition from the legacy system to the new SGSS system in a low risk environment
- Meet or exceed the legacy proficiency, performance, and availability requirements



- General News **P.1**
- SGSS Profile **P.2**
- Eye on Technology **P.3**
- Knowledge Management **P.4**

SGSS Status Update

The SGSS Project successfully completed its System Requirements Review (SRR) in July 2011 and a Preliminary Design Review (PDR) in July 2012. Attention is now shifting to the critical design of the system and its interfaces. The Critical Design Review (CDR) is scheduled for Spring 2013. SGSS is moving forward!

2011				2012				2013				2014				2015				2016																						
A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F
System Requirements Review ▼ 7/18				Preliminary Design Review ▼ 7/13				Critical Design Review ▼ 3/1				System Integration Readiness Review ▼ 7/10				Mission Ops Review ▼ 2/12				Customer Transitions Begin ▼ 11/1		All Transitions Complete ▼ 11/11																				

Major SGSS Project Milestones

Second SGSS Customer Forum Scheduled

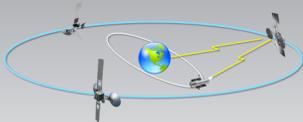
The second SGSS Customer Forum is scheduled for **September 18th, 2012**. Topics to be discussed at the forum include customer interfaces, including scheduling and data interface details. A special focus will be placed on the SGSS testing and transition, and how it will be coordinated with customers. This forum will be a great opportunity to ask your questions! Customers should contact Mike Booth (michael.s.booth@nasa.gov) for further information regarding the Forum.

SGSS Newsletter Launched!

The SGSS project is proud to introduce this new, quarterly publication to engage and inform stakeholders regarding:

- Current and upcoming SGSS events
- Insights into the capabilities that SGSS will provide
- Other information that provides context and value to customers and stakeholders

Please let us know how this newsletter can be improved. What content would you like to see in the future? See the last page of this newsletter for contact information for providing comments.



GENERAL DYNAMICS
C4 Systems



The NASA Space Network (SN) provides global communications services via a constellation of geosynchronous satellites and their supporting ground systems.

The SN provides tracking and data transfer services between User platforms and User Mission Operations Centers (MOC).

“Increased sustainability”

Obsolescence of SN ground segment hardware and software has made sustainment and maintenance increasingly difficult and costly, thus jeopardizing the highly-reliable service that has been serving customers for three decades. In addition, the operation and maintenance of the system is staff-intensive and expensive. In its current status, the system is unable to accommodate future mission demands for expanded capabilities in a cost effective manner.

“...increased capabilities...”

The SGSS Project was formed in May 2008 with a vision for re-engineering the SN ground segment as well as enabling cost efficiencies

in the operability and maintainability of the broader SN.

The SGSS Project is a large effort tasked specifically with determining the appropriate method of sustaining SN operations for a minimum of 25 additional years of service.

The efforts include specification, design, development, and test of a system meeting current and projected SN Operations and SN User requirements, and sustainment goals of operability, scalability, flexibility, extendibility, maintainability, reliability, and availability.

“...and cost effectiveness.”

The SGSS Project is also responsible for the integration of the new system into the SN sites and transition of the operations from the existing system to the new SGSS system without impacting ongoing operations.

The SGSS requirements must be met within the environmental constraints of the current SN and provide for a seamless transition to operations without interruption to on-going SN operations.

The SGSS Project is governed by NPR 7120.5, NASA Space Flight Program and Project Management Requirements, tailored

for application to a ground segment development. The SGSS Project staff are critical members of a nationally dispersed team consisting of government and contractors challenged by the complexity, conscious of the impact, and dedicated to the successful and timely deployment of the SGSS ground system. So, why do it? The future of highly reliable and available space communication depends on it.

Did you know?

- In 1983, The original TDRSS ground terminal, WSGT, supported its first Space Shuttle mission.
- The original ground terminal became obsolete and was replaced and augmented in 1994, resulting in what is now called the 'legacy' ground terminal (STGT). The M&O staff required was cut in about half.

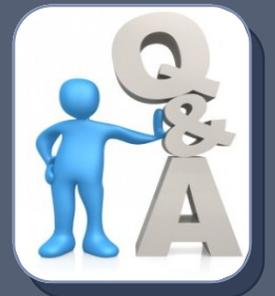
SGSS Q&A

Q: How can I get up-to-date information on the SGSS Project?

A: The SGSS Project is committed to providing its stakeholders with status. The SGSS Newsletter provides proactive engagement

with the community coupled with the SGSS website, the Project seeks to provide the community with relevant information concerning project scope, schedule, and any key activities currently underway. Additionally, the Project is holding Customer Forums to inform and open the door for dialogue with the broader community.

<http://esc.gsfc.nasa.gov/space-communications/sgss.html>



Rolling FAQs

As more details are available on changes to interfaces, procedures, etc. as the SGSS design matures, the SGSS Project wants to make sure that customers have ready access to information relevant to their mission success. Customers often have similar questions and concerns, so the rolling FAQs list will provide the first stop for customers with questions about SGSS.

As we receive questions, this newsletter will publish the top questions and the project's response. A list of Frequently Asked Questions will also be available on the SGSS Webpage.

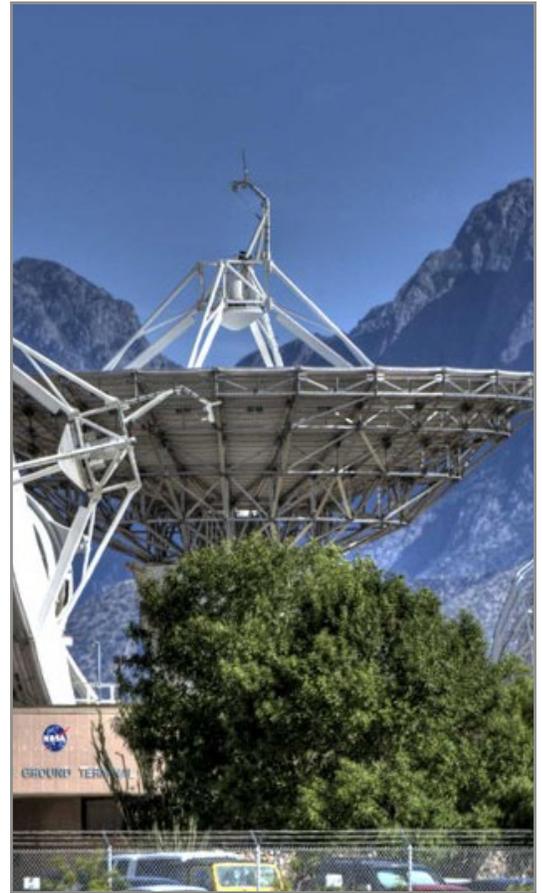
Question: What do you like about working on the SGSS Project?

Answer: "It's exciting to work on a project that will build the next generation of service capability for the SN. Having been involved since 1982 in NASA space communications, it has been amazing to witness the transformation from bulky, low rate analog bit stream architectures to miniaturized, highly efficient packetized systems. Witnessing the evolution from analog transmitters and receivers to FPGA-based reprogrammable devices has really been amazing."

Get to know...



Tom Gitlin, DPM-T



SGSS Project Supports GSFC's Commitment to Knowledge Management

NASA is a leader in Knowledge management, and SGSS is on track to add to NASA's collective body of knowledge. Today's Knowledge management processes represent a shift from "individual-centric" with static reflections on accomplished work, to a more dynamic process which regularly reviews internal and external lessons learned as well as tapping other agency and industry knowledge for ongoing and future applications. According to Goddard Space Flight Center's Pause and Learn (PaL) webpage, PAL activities are "a proven way to facilitate team learning during missions. It helps to bridge the gap between individual learning and team learning."

The SGSS Project will be conducting a PAL session with a facilitator from the Goddard Office of the Chief Knowledge Officer (OCKO) later this month to reflect on activities that have led to the success of the system Preliminary Design Review and will conduct others after key milestones are reached.

SGSS is an Opportunity to Modernize

SGSS remains compatible with legacy customer scheduling and data interfaces, but also introduces multiple, new interfaces to allow enhanced service scheduling, including: Web based, SFTP, and a brand new CCSDS SM interface.

SGSS Introduces New Capabilities:

- ✓ 1.2Gbps data rates
- ✓ CCSDS compliance
- ✓ Digitized IF data distribution
- ✓ ... and much more

SGSS Project Contact Information

Website: <http://esc.gsfc.nasa.gov/space-communications/sgss.html>

SGSS Project Manager:
Roger Clason
roger.n.clason@nasa.gov

SGSS Deputy Project Manager:
Kevin McCarthy
kevin.p.mccarthy@nasa.gov

SGSS Newsletter Editor:
Matthew Kokkonen
kokkonen_matthew@bah.com

Like the Newsletter? Can it be improved? Please send comments via email: sgss-newsletter-suggestions@lists.nasa.gov