EOS Production Sites
Network Performance Report

This is a monthly summary of EOS network performance testing between production sites for October 2006 -- comparing the measured performance against the requirements.

Highlights:

- Mostly highly stable flows
- Selected ENSIGHT graphs now incorporated into this report
  - (Text color of source name indicates color on graph)
- Requirements Basis:
  - December '03 requirements from BAH.
  - Updated to handbook 1.4.1 (3/22/06)
  - Additional Updates Incorporated:
    - New AIRS Flows (8/06)
    - GEOS requirements
    - All LaRC "Backhaul" Requirements removed
    - Extension of TRMM, QuikScat missions
- Significant changes in testing are indicated in Blue, Problems in Red

Ratings:

Rating Categories:

Rating	Value	Criteria
Excellent:	**4**	**Total Kbps** > Requirement * 3
Good:	**3**	1.3 * Requirement <= **Total Kbps** < Requirement * 3
Adequate:	**2**	Requirement < **Total Kbps** < Requirement * 1.3
Almost Adequate:	**1.5**	Requirement / 1.3 < **Total Kbps** < Requirement
Low:	**1**	Requirement / 3 < **Total Kbps** < Requirement / 1.3
Bad:	**0**	**Total Kbps** < Requirement / 3

Where Total Kbps = Integrated Kbps (where available), otherwise just iperf

Ratings Changes:

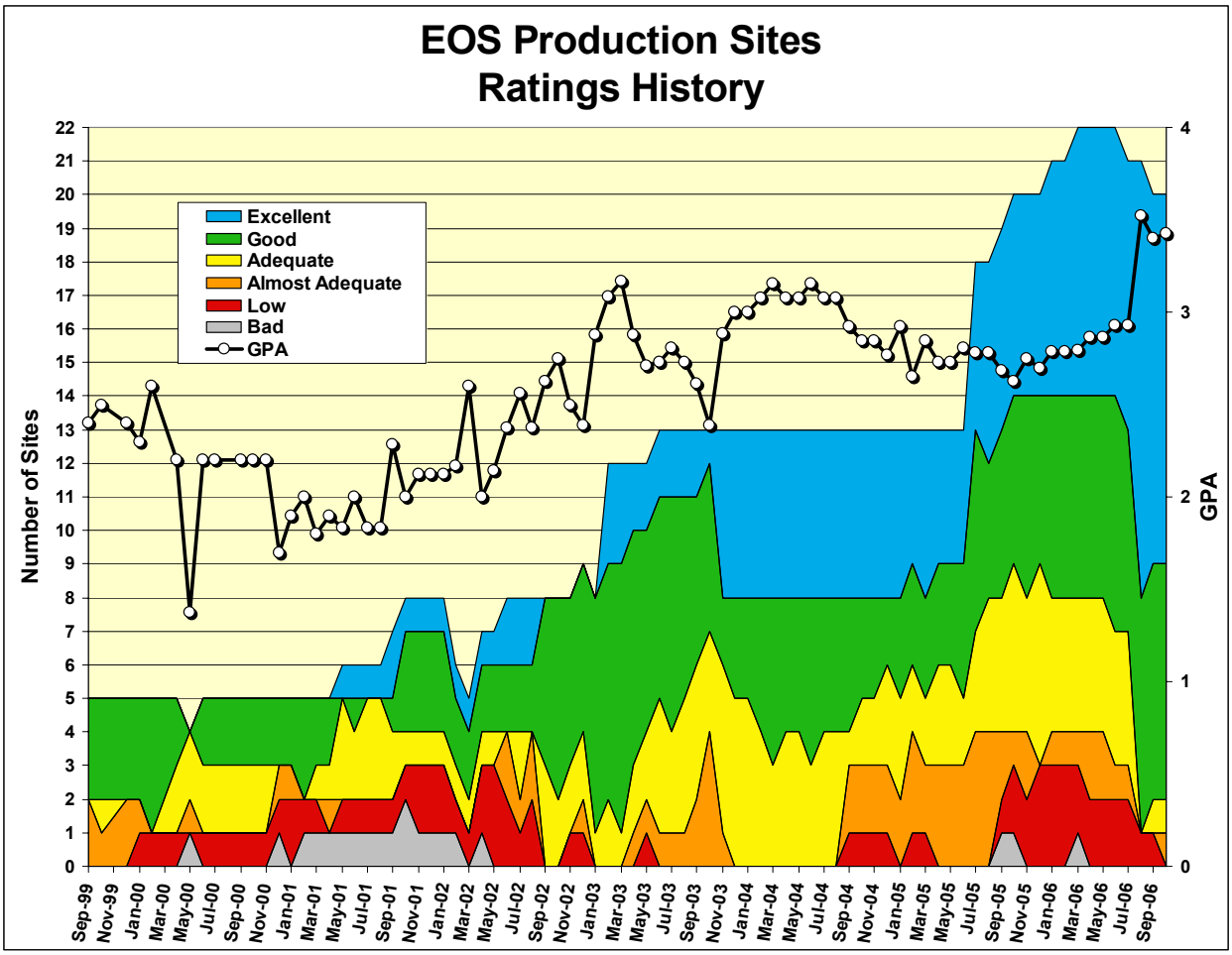
Upgrade: ↑: JPL → RSS: Low → **Good**

Downgrades: ↓ :

GSFC → EROS: Adequate → **Almost Adequate**

GSFC → NSIDC: Good → **Adequate**

(See site discussion below for details)



The chart above shows the number of sites in each classification since EOS Production Site testing started in September 1999. Note that these ratings do NOT relate to absolute performance -- they are relative to the EOS requirements.

Network Requirements vs. Measured Performance

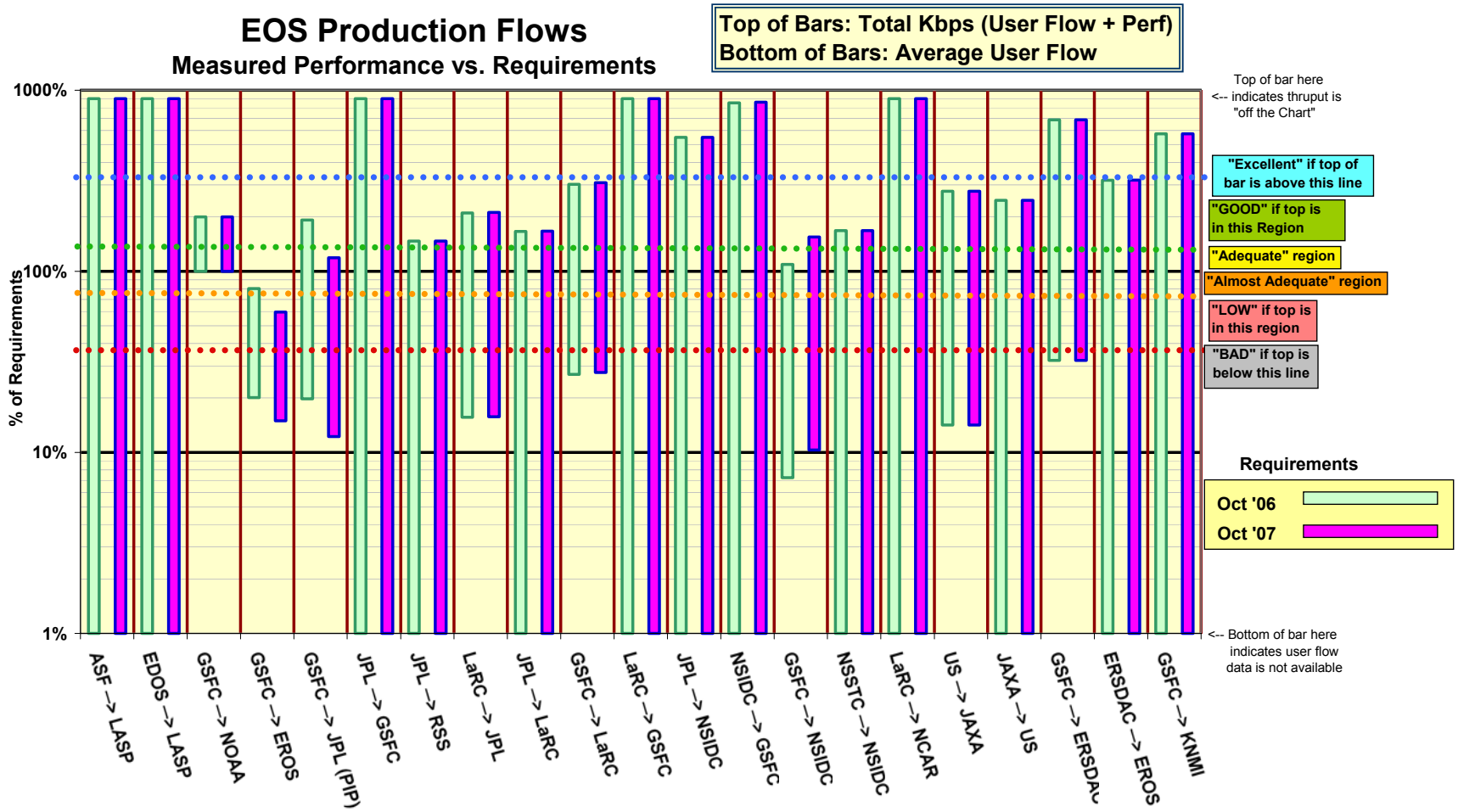
October 2006		Requirements (mbps)		Testing					Ratings		
Source → Destination	Team (s)	Current Oct-06	Future Oct-07	Source → Dest Nodes	Avg User Flow mbps	iperf Avg mbps	Total Avg mbps	Integrated mbps	Rating re Current Requirements Oct-06	Rating re Current Requirements Last Month	Rating re Oct-07
GSFC –> ASF	QuikScat, Radarsat	n/a	n/a	GSFC-CSAFS → ASF	n/a	1.43	1.43		n/a	n/a	n/a
ASF –> LASP	QuikScat	0.02	0.02	ASF → LASP [via IOnet]	n/a	1.10	1.10		Excellent	E	Excellent
EDOS –> LASP	ICESat, QuikScat	0.4	0.4	EDOS → LASP [via IOnet]	n/a	7.2	7.2		Excellent	E	Excellent
GSFC –> NOAA	QuikScat	0.0	0.0	n/a	n/a	n/a	n/a		n/a	n/a	n/a
GSFC –> EROS	MODIS, LandSat	285.4	383.9	GSFC-PTH → EROS PTH	57.3	223.5	280.8	228.9	A A	A	LOW
GSFC –> JPL (PIP)	AIRS, ISTs	24.8	40.1	GDAAC → JPL-AIRS	4.9	47.2	52.1	47.6	GOOD	G	Adequate
JPL –> GSFC	AMSR-E, MISR, etc.	7.4	7.4	JPL-PTH → GSFC-PTH	n/a	89.2	89.2		Excellent	E	Excellent
JPL –> RSS	AMSR-E	2.5	2.5	JPL-PODAAC → RSS	n/a	3.7	3.7		GOOD	L	GOOD
LaRC –> JPL	TES, MISR	39.8	39.6	LARC-DAAC → JPL-TES	6.2	83.8	90.0	83.8	GOOD	G	GOOD
JPL –> LaRC	TES	52.6	52.6	JPL-PTH → LARC-PTH	n/a	87.5	87.5		GOOD	G	GOOD
GSFC –> LaRC	CERES, MISR, MOPITT	68.0	66.4	GDAAC → LDAAC	18.4	199.4	217.8	205.4	Excellent	E	Excellent
LaRC –> GSFC	MODIS, TES	0.2	0.2	LDAAC → GDAAC	n/a	165.1	165.1		Excellent	E	Excellent
JPL –> NSIDC	AMSR-E	1.3	1.3	JPL-PODAAC → NSIDC SIDADS	n/a	7.4	7.4		Excellent	E	Excellent
NSIDC –> GSFC	MODIS, ICESAT, QuikScat	13.3	13.2	NSIDC DAAC → GDAAC	0.1	113.3	113.3	113.3	Excellent	E	Excellent
GSFC –> NSIDC	MODIS, ICESAT, QuikScat	91.0	64.1	GDAAC → NSIDC-DAAC	6.6	99.2	105.8	99.2	Adequate	G	GOOD
NSSTC –> NSIDC	AMSR-E	7.5	7.5	NSSTC → NSIDC DAAC	n/a	12.6	12.6		GOOD	G	GOOD
LaRC –> NCAR	HIRDLS	5.4	5.4	LDAAC → NCAR	n/a	84.4	84.4		Excellent	E	Excellent
US –> JAXA	QuikScat, TRMM, AMSR	2.0	2.0	GSFC-CSAFS → JAXA DDS	0.3	5.5	5.7	5.5	GOOD	G	GOOD
JAXA –> US	AMSR-E	1.3	1.3	JAXA DDS → JPL-QSCAT	n/a	3.2	3.2		GOOD	G	GOOD
GSFC –> ERSDAC	ASTER	12.5	12.5	ENPL-PTH → ERSDAC	4.0	85.5	89.5	85.5	Excellent	E	Excellent
ERSDAC –> EROS	ASTER	26.8	26.8	ERSDAC → EROS PTH	n/a	85.5	85.5		Excellent	E	Excellent
GSFC –> KNMI	OMI	3.3	3.3	GSFC-MAX → OMI-PDR	n/a	18.9	18.9		Excellent	E	Excellent

Notes: Flow Requirements include TRMM, Terra, Aqua, Aura, ICESAT, QuikScat

*Criteria:	
Excellent	**Total Kbps** > Requirement * 3
GOOD	1.3 * Requirement <= **Total Kbps** < Requirement * 3
Adequate	Requirement < **Total Kbps** < Requirement * 1.3
Almost Adequate	Requirement / 1.3 < **Total Kbps** < Requirement
LOW	Requirement / 3 < **Total Kbps** < Requirement / 1.3
BAD	**Total Kbps** < Requirement / 3

Ratings Summary	Oct-06 Score	Req Prev	Oct-07 Score
Excellent	11	11	11
GOOD	7	7	7
Adequate	1	1	1
Almost Adequate	1	0	0
LOW	0	1	1
BAD	0	0	0
Total	20	20	20
GPA	3.43	3.40	3.40

This graph shows two bars for each source-destination pair. Each bar uses the same actual measured performance, but compares it to the requirements for two different times (September '06 and October '07). Thus if the requirements increase, the same measured performance will be lower in comparison.



Interpretation: The bottom of each bar is the average measured user flow to a site. Thus the bottom of each bar indicates the relationship between the requirements and actual flows. Note that the requirements include a 50% contingency factor above what was specified by the projects, so a value of 66% would indicate that the project is flowing as much data as requested. The top of each bar represents the integrated measurement – this value is used to determine the ratings.

1) EROS:

Ratings: GSFC → EROS: ↓ Adequate → **Almost Adequate**
ERSDAC→ EROS: Continued **Excellent**

Web Page: http://ensight.eos.nasa.gov/Networks/production/EROS.shtml

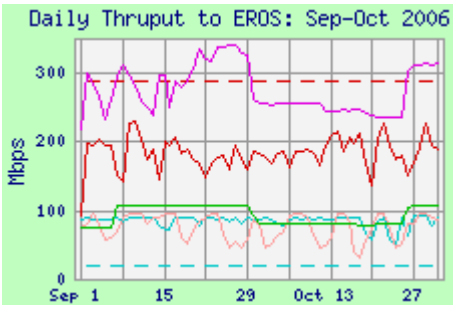
Test Results:

Source → Dest	Medians of daily tests (mbps)					
	Best	Median	Worst	User Flow	TOTAL	Integrated
GSFC-PTH → EROS PTH	272.9	223.5	83.2	57.3	280.8	228.9
GSFC-DAAC → EROS LPDAAC	228.1	184.9	101.4			
ERSDAC→ EROS	88.1	85.5	21.1	(via APAN / Abilene / OC-12)		
NSIDC→ EROS	78.9	78.3	75.4			
LaRC→ EROS	92.0	76.3	5.4			
EROS LPDAAC → GSFC DAAC	115.8	90.8	68.1			
EROS LPDAAC → GSFC ECHO	73.1	61.8	46.8			
EROS PTH→ GSFC PTH	336.7	320.7	306.7			

Requirements:

Source → Dest	Date	mbps	Rating
GSFC→ EROS	→Nov '06	285.4	Almost Adequate
GSFC→ EROS	Dec '06 → Mar '08	383.9	Low
ERSDAC→ EROS	FY '06, '07	26.8	Excellent

Comments:



GSFC → EROS: The private OC-12 (622 mbps) circuit from to EROS was switched to a backup on Sept 30, resulting in longer RTT and lower thruput. The primary circuit was restored on Oct. 26, but the performance this month was dominated by the backup circuit.

The PTH hosts are outside the ECS firewalls, and therefore normally have higher thruput than between the DAACs. The user flow this month was stable, and had only a small contribution to the integrated measurement. The rating is based on the "Integrated" measurement, and as usual is lower than the sum of the User Flow + iperf. As a result of the use of the backup circuit, the rating drops to "Almost Adequate".

ERSDAC → EROS: The median thruput from ERSDAC to EDC-PTH (in support of the ERSDAC to EDC ASTER flow, replacing tapes) was stable on the new route (limited by the ERSDAC 100 mbps tail circuit), and is more than 3 times the 26.8 mbps requirement, resulting in an "Excellent" rating.

NSIDC → EROS: The median thruput from NSIDC-SIDADS to EDC-PTH was stable (slight drop due to the longer path to EROS).

LaRC → EROS: The thruput from LaRC-PTH to EDC-PTH was stable, but there is a very strong diurnal pattern (Daily best to worst ratio is 17:1!)

EROS → GSFC: The thruput for tests from EROS to GSFC were mostly stable this month, except for a slight drop from EROS-PTH to GSFC-PTH due to the longer route.

2) JPL:

2.1) JPL ←→ GSFC:

Ratings: GSFC → JPL: PIP:Continued **Good**
JPL → GSFC: Continued **Excellent**

Web Pages:

http://ensight.eos.nasa.gov/Organizations/production/JPL_QSCAT.shtml
http://ensight.eos.nasa.gov/Organizations/production/JPL_PODAAC.shtml
http://ensight.eos.nasa.gov/Missions/aqua/JPL_AIRS.shtml

Test Results:

Source → Dest	NET	Medians of daily tests (mbps)					
		Best	Median	Worst	User Flow	TOTAL	Integrated
GSFC-DAAC → JPL-AIRS	PIP	47.5	47.2	31.4	4.9	52.1	47.3
GSFC-PTH → JPL-AIRS	PIP	47.6	47.4	26.7	4.4	51.8	47.6
GSFC-CNE → JPL-AIRS	SIP	47.2	42.1	13.2			
GSFC-CSAFS → JPL-QSCAT	PIP	7.5	7.4	4.9			
GSFC-CSAFS → JPL-QSCAT-BU	PIP	7.4	7.2	4.5			
GSFC-PTH → JPL-PODAAC	PIP	88.8	84.9	44.1			
GSFC-CNE → JPL-MISR	SIP	39.8	25.2	4.6			
JPL-PTH→ GSFC PTH	PIP	89.2	89.2	65.1			
JPL-PODAAC→ GSFC DAAC	PIP	21.5	10.2	2.9			

Requirements:

Source → Dest	Date	Mbps	Rating
GSFC → JPL Combined	FY '06	22.2	Good
GSFC → JPL Combined	Nov '06	42.8	Adequate
JPL → GSFC combined	CY '06	7.4	Excellent

Comments:

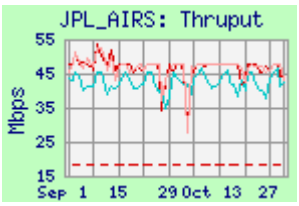
GSFC → JPL:.

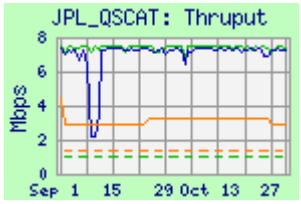
AIRS: Performance from GSFC (DAAC and CNE) to JPL-AIRS was stable this month, after dramatically improving with the NISN WANR upgrade in April.

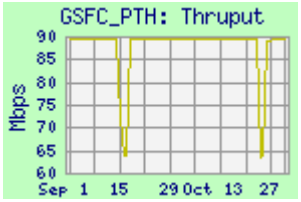
The requirement was updated last month to reflect increased AIRS reprocessing requirements (was 18.9 mbps previously), and increases to 43 mbps in November '06 for the same reason. Performance from the GSFC-DAAC is used as the basis of the ratings, and is about 2 x the new requirement (for all PIP flows combined), so continues to be rated "Good". But the same performance will rate only "Adequate" in the future.

QSCAT: The performance was stable this month, limited by the CSAFS 10 mbps Ethernet connection, and thus did not significantly benefit from the WANR upgrade.

JPL → GSFC: The previous JPL-PODAAC to GSFC-DAAC testing was replaced by JPL-PTH to GSFC-PTH testing to better reflect the network capabilities. The rating remains "Excellent".







2.2) JPL ←→ LaRC

Ratings: LaRC → JPL: Continued **Good**
JPL→ LaRC: Continued **Good**

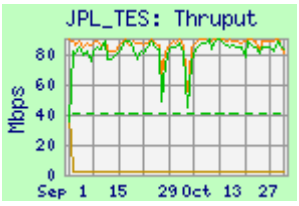
Web Pages:
http://ensight.eos.nasa.gov/Organizations/production/JPL_TES.shtml
http://ensight.eos.nasa.gov/Missions/terra/JPL_MISR.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)					
	Best	Median	Worst	User Flow	TOTAL	Integrated
LaRC PTH → JPL-TES	90.8	87.6	66.2	6.2	93.8	87.6
LaRC DAAC → JPL-TES	90.8	83.8	52.5	6.2	90.0	83.8
LaRC PTH → JPL-TES sftp	1.8	1.8	1.7			
LaRC DAAC → JPL-MISR	83.2	68.9	40.9			
JPL-PTH → LaRC PTH	88.6	87.5	86.8			

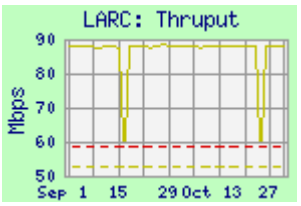
Requirements:

Source → Dest	Date	Mbps	Rating
LaRC DAAC → JPL-TES	FY '06	29.8	Good
LaRC DAAC → JPL-MISR	FY '06	18.5	Good
LaRC DAAC → JPL-Combined	FY '06	39.6	Good
JPL → LaRC	FY '06	52.6	Good



Comments:

LaRC→ JPL: Performance remained stable after improving dramatically with the NISN WANR upgrade. The rating remains "Good" (close to "Excellent"). Sftp results are much lower than iperf, due to window limitations.



JPL → LaRC: This requirement is for TES products produced at the TES SIPS at JPL, being returned to LaRC for archiving. The measured thruput was also stable this month after improving dramatically with the NISN WANR. The rating remains "Good".

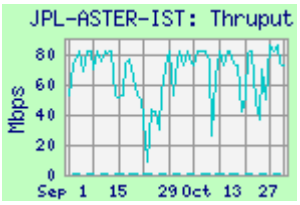
2.3) ERSDAC → JPL ASTER IST

Rating: Continued **Excellent**

Web Page:http://ensight.eos.nasa.gov/Organizations/production/JPL_PTH.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)		
	Best	Median	Worst
ERSDAC → JPL-ASTER-IST	81.8	72.8	14.1



Comments: This test was initiated in March '05, via APAN replacing the EBnet circuit. The typical 72 mbps must be well in excess of the requirements (IST requirements are generally 311 kbps).

3) Boulder CO:

3.1) GSFC ← → NSIDC DAAC:

Ratings: NSIDC → GSFC: Continued **Excellent**
GSFC → NSIDC: ↓ Good → **Adequate**

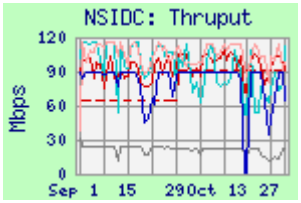
Web Page: http://ensight.eos.nasa.gov/Organizations/production/NSIDC.shtml

Test Results:

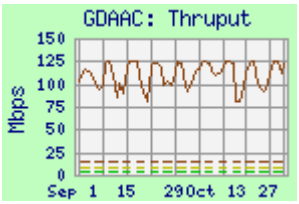
Source → Dest	Medians of daily tests (mbps)					
	Best	Median	Worst	User Flow	TOTAL	Integrated
GSFC-DAAC→ NSIDC-DAAC	110.0	99.2	41.3	6.6	105.8	99.2
GSFC-PTH → NSIDC-DAAC	113.9	101.5	36.3			
GSFC-ISIPS → NSIDC (iperf)	113.3	78.9	29.9			
GSFC-ISIPS → NSIDC (ftp)	22.0	21.8	6.9			
NSIDC DAAC → GSFC-DAAC	123.8	113.3	23.3			
NSIDC → GSFC-ISIPS (iperf)	84.7	83.0	33.1			

Requirements:

Source → Dest	Date	Mbps	Rating
GSFC → NSIDC	Oct-Dec '06	91.0	**Adequate**
GSFC → NSIDC	2007	64.1	**Good**
NSIDC → GSFC	FY '06	13.3	**Excellent**



Comments: GSFC → NSIDC: This rating is based on testing from GDAAC to the NSIDC DAAC. The iperf and integrated thruput values were stable this month, after increasing about 25% due to the NISN WANR upgrade. This requirement varies from month to month, based on planned ICESAT reprocessing. This month the reprocessing **IS** included. The Integrated thruput is above this higher requirement but not by more than 30%, so the rating drops to "Adequate". Note that last month the reprocessing **was not** included – the requirement was lower, so the same performance would have rated "Good".



NSIDC → GSFC: Performance from NSIDC to GSFC remained stable, after improving dramatically with the NISN WANR upgrade in August; the rating remains "Excellent".

GSFC-ISIPS ← → NSIDC: Performance between ISIPS and NSIDC is at nominal levels for the circuit capacity. Iperf thruput was much higher than ftp due to window size limitations.

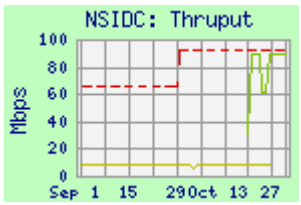
3.2) JPL → NSIDC:

Ratings: JPL → NSIDC: Continued **Excellent**

Test Results:

Source → Dest	Medians of daily tests (mbps)			
	Best	Median	Worst	Requirement
JPL PTH → NSIDC-SIDADS	88.8	88.6	17.0	1.34
JPL PODAAC → NSIDC-SIDADS	7.4	7.4	6.2	1.34

Comments: In October an additional test from JPL-PTH to NSIDC-SIDADS was added to more fully assess the true network capability – the thruput is much higher than from PODAAC. Thruput from PODAAC was stable this month after last month's improvement from the NISN WANR upgrade. The rating remains "Excellent".



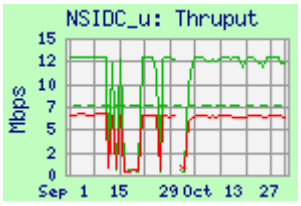
3.3) NSSTC → NSIDC:

Ratings: NSSTC → NSIDC: Continued **Good**

Web Pages: http://ensight.eos.nasa.gov/Missions/aqua/NSIDC_u.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)			
	Best	**Median**	**Worst**	**Requirement**
NSSTC → NSIDC DAAC (iperf)	12.9	12.6	0.2	7.5
NSSTC → NSIDC DAAC (ftp)	6.4	6.3	0.3	



Comments: NSSTC (Huntsville, AL) sends AMSR-E L2/L3 data to NSIDC. Median thruput is stable and more than 30 % over the requirement, so is rated "Good"

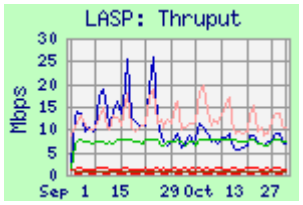
3.4) LASP:

Ratings: GSFC → LASP: Continued **Excellent**
ASF → LASP: Continued **Excellent**

Web Page: http://ensight.eos.nasa.gov/Organizations/production/LASP.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)			
	Best	**Median**	**Worst**	**Requirement**
ASF → LASP	1.34	1.10	0.45	0.024
GSFC EDOS → LASP	13.7	7.2	2.9	0.4
GSFC PTH → LASP (iperf)	20.3	11.1	3.9	
GSFC PTH → LASP (sftp)	0.44	0.44	0.42	



Comments: The requirements are now divided into ASF and GSFC sources:

ASF → LASP: Thruput from ASF to LASP is limited by ASF T1 circuit, rating "Excellent", due to the modest requirement

GSFC → LASP: GSFC → LASP iperf thruput is well above the requirement; the rating continues "Excellent. But sftp thruput is MUCH lower than iperf, due to window size limitations. A patch is available.

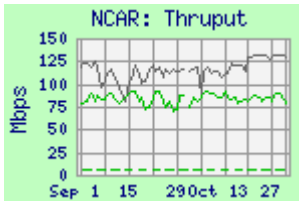
3.5) NCAR:

Ratings: LaRC → NCAR: Continued **Excellent**
GSFC → NCAR: Continued **Excellent**

Web Pages http://ensight.eos.nasa.gov/Missions/terra/NCAR.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)			
	Best	**Median**	**Worst**	**Requirement**
LaRC → NCAR	89.0	84.4	45.0	5.4
GSFC → NCAR	130.9	119.5	92.0	5.1



Comments: NCAR (Boulder, CO) is a SIPS for MOPITT (Terra, from LaRC), and has MOPITT and HIRDLS QA (Aura, from GSFC) requirements. Performance from LaRC (via NISN to MAX to Abilene) improved (from 22 mbps previously) with the NISN WANR SIP upgrade in late July. Thruput is now well above 3 x the requirement, so the rating remains "Excellent".

From GSFC the median thruput is steady at well over 3 x the requirement, so that rating also remains "Excellent".

4) GSFC ←→ LaRC:

Ratings: GSFC → LaRC: Continued **Excellent**
LDAAC → GDAAC: Continued **Excellent**

Web Pages: http://ensight.eos.nasa.gov/Organizations/production/LARC.shtml
http://ensight.eos.nasa.gov/Organizations/production/LATIS.shtml

Test Results:

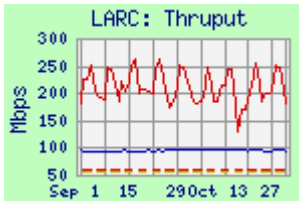
Source → Dest	Medians of daily tests (mbps)					
	Best	Median	Worst	User Flow	TOTAL	Integrated
GDAAC → LDAAC	269.0	199.4	89.9	18.4	217.8	205.4
GSFC-NISN → LaTIS	91.4	80.7	32.6			
GSFC-PTH → LaRC-PTH	93.5	93.1	85.5			
GSFC-PTH → LaRC-ANGe	86.9	85.5	73.1			
LDAAC → GDAAC	260.7	176.8	59.3			
LDAAC → GSFC-ECHO	84.7	74.8	37.8			

Requirements:

Source → Dest	Date	Mbps	Rating
GSFC → LARC (Combined)	FY '06	66.3	**Excellent**
LDAAC → GDAAC	FY '06	0.2	**Excellent**

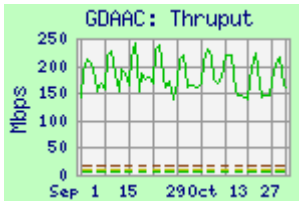
Comments: Performance of all GSFC ←→ LaRC flows improved dramatically with the NISN WANR upgrade in August.

GSFC → LaRC: The combined requirement had been split between LDAAC and LaTIS when the flows were on separate circuits, but is now treated as a single requirement as they have been both on PIP since Feb '05. The rating is now based on the GDAAC to LaRC ECS DAAC thruput, compared to the combined requirement.



Since the **GSFC→ LaRC ECS DAAC** median thruput is above 3 x the combined requirement, the combined rating remains "Excellent". Note, however, the significant diurnal variations. Also note: the lower peaks (around 90 mbps) to LaTIS, LaRC-PTH, and LaRC-ANGe are limited by their 100 mbps LAN connections.

LaRC → GSFC: Performance from LDAAC → GDAAC was stable this month. The thruput remained much more than 3 x this requirement, so the rating continues as "Excellent". However, severe diurnal variation is observed on this circuit, with the daily peak more than 4x the daily worst.



The thruput from LDAAC to GSFC-ECHO is lower than LDAAC to GDAAC due to a 100 mbps LAN connection.

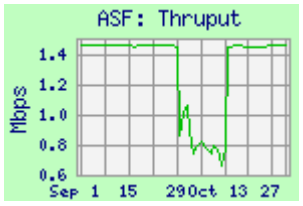
5) ASF

Rating: Continued **Excellent**

Web Page: http://ensight.eos.nasa.gov/Organizations/production/ASF.shtml

Test Results:

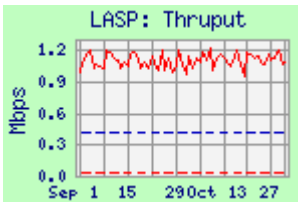
Source → Dest	Medians of daily tests (mbps)		
	Best	**Median**	**Worst**
GSFC-CSAFS → ASF	1.44	1.43	0.88
ASF → LASP	1.34	1.10	0.45
ASF → GSFC-CSAFS	1.38	1.31	0.86



Comments: Testing to ASF transitioned to IOnet in April '06 – accordingly, testing was discontinued from ASF to NOAA and JPL-SEAPAC; also user flow data is no longer available.

Performance to ASF was degraded for almost the first two weeks of October, due to a carrier problem with the circuit. The rest of the month the performance was consistent with the T1 (1.5 mbps) circuit capacity.

Performance from ASF to LASP and CSAFS was not affected by this circuit problem; the rating therefore remains "Excellent".



Requirements:

Source → Dest	Date	kbps	Rating
ASF→ LASP	FY '06	24	**Excellent**

---

6) NOAA NESDIS:

Rating: n/a

Web Page: http://ensight.eos.nasa.gov/Organizations/production/NOAA_NESDIS.shtml

Requirements:

Source → Dest	FY	Mbps	Rating
GSFC-CSAFS → NESDIS	'06	0.19	**N/A**

Comments: The NOAA EMSnet test host was discontinued in early August. NOAA has been requested to provide a new test machine for the "Class" system.

The dominant flow to NOAA is Quikscat data, from GSFC CSAFS. Thruput was previously stable from all sources, and much higher than the requirement, rating "Excellent".

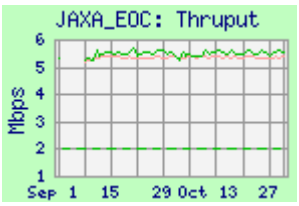
7) US ←→ JAXA:

Ratings: JAXA → US: Continued **Good**
US → JAXA: Continued **Good**

Web Pages http://ensight.eos.nasa.gov/Organizations/production/JAXA_EOC.shtml
http://ensight.eos.nasa.gov/Organizations/production/JPL_QSCAT.shtml
http://ensight.eos.nasa.gov/Organizations/production/GSFC_SAFS.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)					
	Best	Median	Worst	User Flow	TOTAL	Integrated
GSFC-CSAFS → JAXA-DDS	5.78	5.45	2.76	0.28	5.73	5.50
GSFC–EDOS → JAXA-azusa	8.16	8.08	6.16			
GSFC-ENPL → JAXA-azusa	76.0	65.0	40.2			
GSFC-PTH → JAXA-azusa	54.5	37.2	22.3			
GSFC-PTH → JAXA (sftp)	0.84	0.83	0.79			
JAXA-DDS → JPL-QSCAT	3.20	3.16	2.80			
JAXA-DDS → GSFC-DAAC	1.99	1.96	1.92			
JAXA-azusa→ GSFC-MAX	8.98	8.88	8.50			

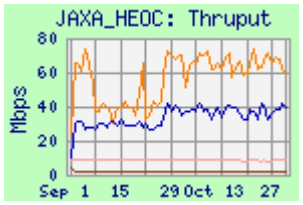


Requirements

Source → Dest	Date	mbps	Rating
GSFC → JAXA	FY '05, '06	1.99	Good
JAXA → US	FY '04 - '06	1.28	Good

Comments: The US → JAXA requirement was updated last month, to reflect the extension of the TRMM and QScat missions. Previously, the requirement was 1.43 mbps. The JAXA flows were moved to APAN / Sinet on August 17. Prior to this switch the flows used a dedicated 2 mbps ATM circuit from JPL to JAXA, using NISN PIP between GSFC and JPL. Performance on that circuit was stable at about 1.5 mbps.

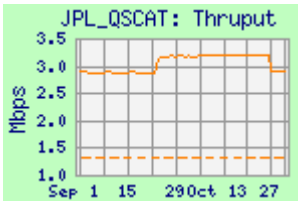
US → JAXA: Performance from GSFC improved substantially with the switch to APAN / Sinet, and is now limited by TCP window size and a 10 mbps Ethernets on JAXA's DDS (EOC) node, and the GSFC-EDOS-Mail node. Thruput was stable this month, but with the increased requirement, the thruput is now below 3 x the requirement, so the rating remains "Good". But using sftp between these same nodes is much lower, limited by ssh window size. A patch is available, but is not installed.

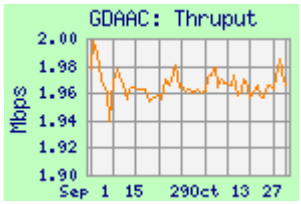


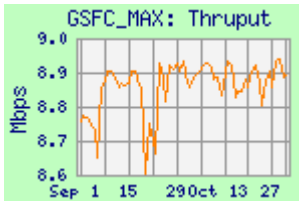
Performance from GSFC-PTH and GSFC-ENPL to the azusa (HEOC) test node at JAXA is not limited by a 10 mbps Ethernet, so its much higher performance more accurately shows the capability of the network.

Performance testing from JPL to JAXA did not run this month – firewall change has been requested from JAXA.

JAXA → US: Performance improved with the switch to APAN / Sinet in August, and is now also limited by TCP window size and 10 mbps Ethernets. But it has not yet been retuned to fully utilize the increased network capability. The thruput from JAXA to JPL was more than 30% over the requirement, so the rating remains "Good".







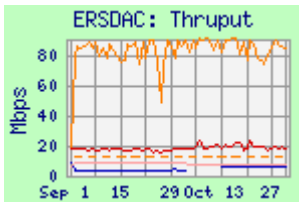
8) ERSDAC ←→ US:

Rating: Continued **Excellent**

Web Page :http://ensight.eos.nasa.gov/Organizations/production/ERSDAC.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)					
	Best	Median	Worst	User Flow	TOTAL	Integrated
GDAAC → ERSDAC	25.5	18.0	10.2			
GSFC ENPL (FE) → ERSDAC	89.8	85.5	43.0	4.0	89.5	85.5
GSFC-EDOS → ERSDAC	5.8	5.7	2.6			



Requirements:

Source → Dest	FY	Mbps	Rating
GSFC → ERSDAC	'03 - '06	12.5	**Excellent**

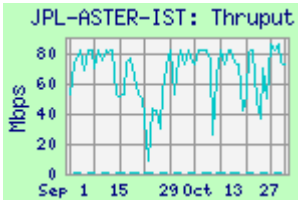
Comments: Dataflow from GSFC to ERSDAC was switched to APAN in February '05, and the performance above is via that route.

The thruput from GDAAC is apparently limited by packet loss at the GigE to FastE switch at Tokyo-XP. The GigE GDAAC source does not see any bottlenecks until this switch (The Abilene and APAN backbones are 10 Gbps), and thus exceeds capacity of the switch's FastE output circuit. But the FastE connected GSFC-ENPL node is limited to 100 mbps by its own interface, so does not suffer performance degrading packet loss – its performance is much higher. Testing from EDOS to ERSDAC is currently limited by a 10 mbps Ethernet in its path – a waiver request has been initiated to use the FastE interface.

The requirement now includes the level 0 flows which used to be sent by tapes. The thruput is still more than 3 x this requirement, so the rating remains "Excellent".

Other Testing:

Source → Dest	Medians of daily tests (mbps)		
	Best	Median	Worst
ERSDAC → JPL-ASTER IST	81.8	72.8	14.1
ERSDAC → EROS	88.1	85.5	21.1



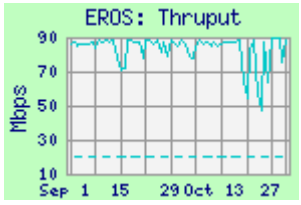
Requirements:

Source → Dest	Date	mbps	Rating
ERSDAC→ EROS	FY '06	26.8	**Excellent**

Comments:

ERSDAC → JPL-ASTER-IST: This test was initiated in March '05, via APAN replacing the EBnet circuit. The results are much higher than previously via the 1 mbps ATM circuit, and should be considered "Excellent" (no requirement is specified at this time – but other IST requirements are 311 kbps)

ERSDAC → EROS: The results from this test (in support of the ERSDAC to EROS ASTER flow, replacing tapes) were stable this month. Thruput improved to these present values in April '05 after the Abilene to NGIX-E connection was repaired. The median thruput is more than 3 x the requirement, so the rating remains "Excellent"



9) Other SIPS Sites:

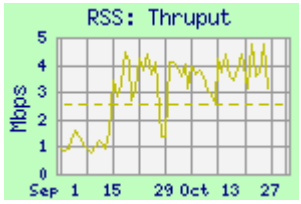
Web Pages http://ensight.eos.nasa.gov/Missions/aqua/RSS.shtml
http://ensight.eos.nasa.gov/Missions/aura/KNMI_OMIPDR.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)				
	Best	**Median**	**Worst**	**Requirement**	**Rating**
JPL → RSS	5.19	3.65	1.45	2.4	↑ Low → **Good**
GSFC → KNMI-ODPS	19.0	18.9	18.1	3.3	Continued **Excellent**

Comments:

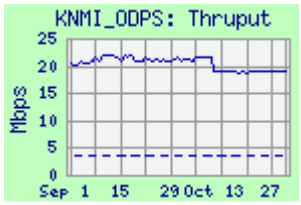
9.1 RSS: RSS (Santa Rosa, CA) is a SIPS for AMSR-E, receiving data from JPL, and sending its results to GHCC (aka NSSTC) (Huntsville, AL). The NISN dedicated circuit from JPL to RSS was upgraded in August '05 from 2 T1s (3 mbps) to 4 T1s (6 mbps) to accommodate the larger RSS to GHCC flow. This month the thruput is higher (median was only 1.5 mbps last month), due to lower data downloads at RSS.



The iperf thruput is again more than 30% above the requirement, so the rating returns to "Good" (had dropped to "Low" last month due to heavy user flow). User flow data remains unavailable on this circuit.

Note that with the present configuration (passive servers at both RSS and GHCC), the RSS to GHCC performance cannot be tested.

9.2 KNMI: KNMI (DeBilt, Netherlands) is a SIPS and QA site for OMI (Aura). The route from GSFC is via MAX to Abilene, peering in NY with Surfnet's 10Gbps circuit to Amsterdam. The rating is based on the results to the ODPS primary server, protected by a firewall, and are quite a bit lower than previously to the Backup server, which was outside the firewall. Thruput remains well above 3 x the requirement, rating "Excellent".



Testing to the Backup server was discontinued at the end of August, on request from KNMI.

See also Section 3 (Boulder) for data on NSSTC → NSIDC and NCAR testing.