

EOS Production Sites Network Performance Report

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

Highlights:

- Very stable performance
- Collection of user flow data was enhanced in late May, incorporated in this report.
- Began investigation to try to increase effective tcp window size for sftp.
- Outstanding Issues:
 - New requirements are still being worked
 - Old requirements used again this time.
- 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)

Else = User Flow + iperf monthly average

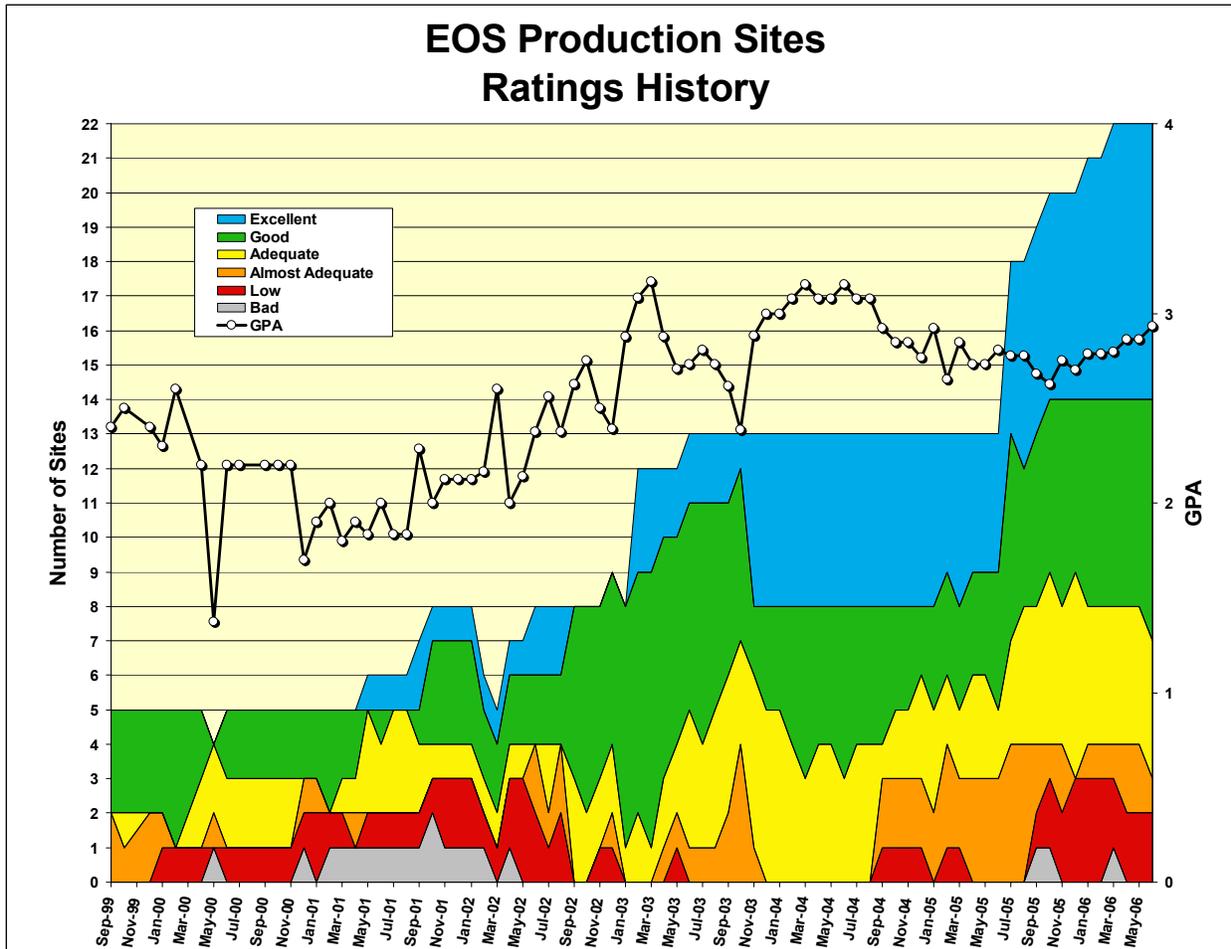
Ratings Changes:

Upgrades: ↑:

GSFC → NSIDC: Almost Adequate → **Good**

(But due to requirements change, not a performance change)

Downgrades: ↓ : None

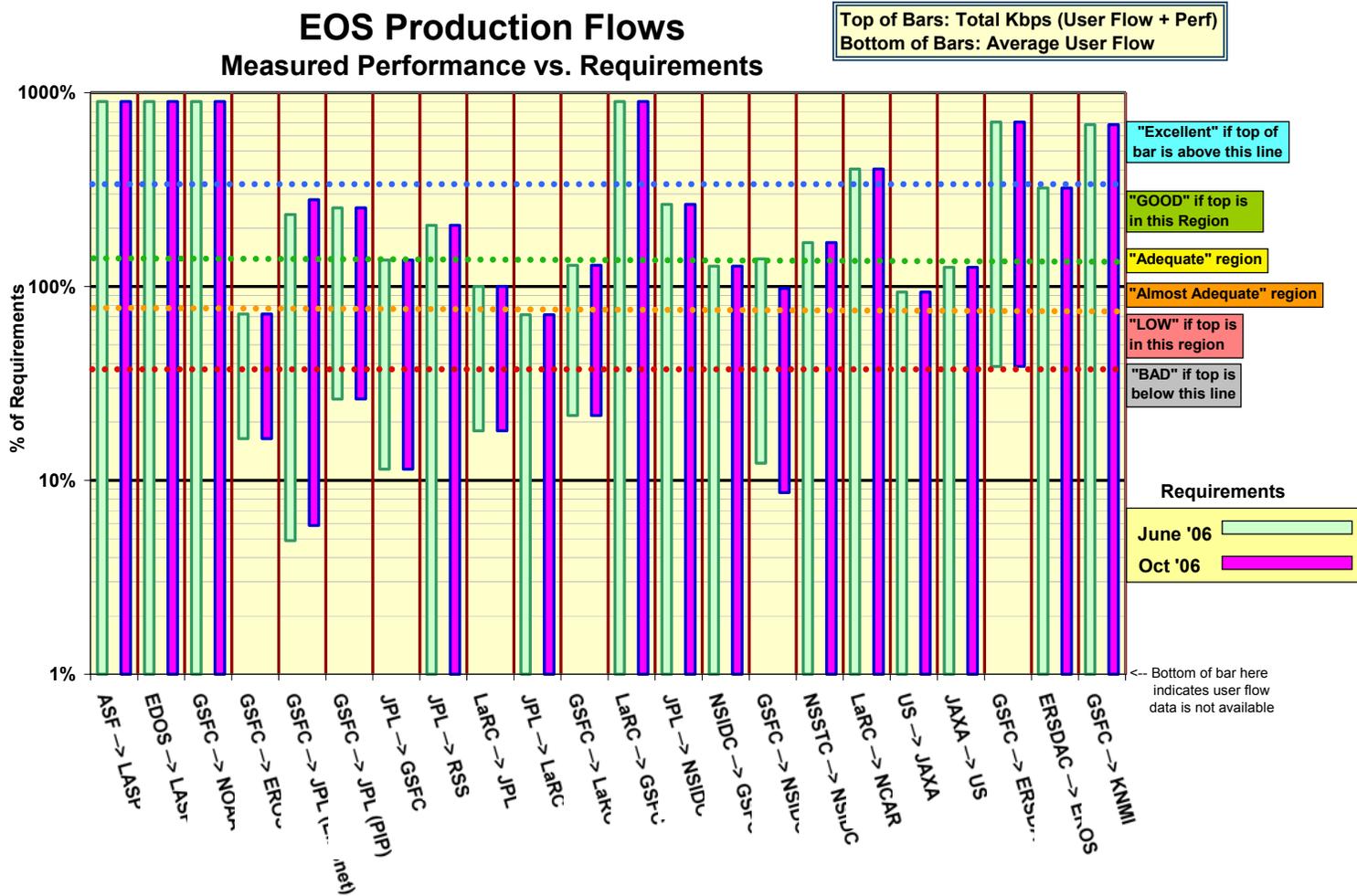


The chart above shows the number of sites in each classification since EOS Production Site testing started in September 1999. Note that these ratings do NOT relate to absolute performance -- they are relative to the EOS requirements.

Network Requirements vs. Measured Performance

June 2006		Requirements (kbps)		Testing					Ratings			
Source → Destination	Team (s)	Current	Future	Source → Dest Nodes	Avg User Flow kbps	iperf Avg kbps	Total Avg kbps	Integrated kbps	Rating re Current Requirements		Rating re	
		Jun-06	Oct-06						Jun-06	Last Month	Oct-06	
GSFC → ASF	QuikScat, Radarsat	n/a	n/a	GSFC-CSAFS → ASF	n/a	1442	1442		n/a	n/a	n/a	
ASF → LASP	QuikScat	24	24	ASF → LASP [via IOnet]	n/a	1071	1071		Excellent	E	Excellent	
EDOS → LASP	ICESat, QuikScat	400	400	EDOS → LASP [via IOnet]	n/a	16761	16761		Excellent	E	Excellent	
GSFC → NOAA	QuikScat	189	0	GSFC-CSAFS → NESDIS	n/a	6834	6834		Excellent	E	Excellent	
GSFC → EROS	MODIS, LandSat	285361	285361	GDAAC → EROS LPDAAC	46809	197420	244229	205682	LOW	L	LOW	
GSFC → JPL (EMSnet)	ASTER, QuikScat, MLS, etc.	3144	2634	GSFC-CSAFS → JPL-QSCAT	154	7387	7541	7387	GOOD	G	GOOD	
GSFC → JPL (PIP)	AIRS, ISTs	15757	15757	GDAAC → JPL-AIRS	4142	39491	43633	40160	GOOD	G	GOOD	
JPL → GSFC	AMSR-E, MISR, etc.	7387	7387	JPL-PODAAC → GDAAC	843	9285	10128		GOOD	G	GOOD	
JPL → RSS	AMSR-E	2488	2488	JPL-PODAAC → RSS	n/a	5153	5153		GOOD	G	GOOD	
LaRC → JPL	TES, MISR	39553	39553	LARC-PTH → JPL-TES	7123	38236	45358	39596	Adequate	A	Adequate	
JPL → LaRC	TES	52626	52626	JPL-PTH → LARC-PTH	n/a	37585	37585		LOW	L	LOW	
GSFC → LaRC	CERES, MISR, MOPITT	58594	58594	GDAAC → LDAAC	12660	73615	86275	75439	Adequate	A	Adequate	
LaRC → GSFC	MODIS, TES	3160	3160	LDAAC → GDAAC	n/a	51848	51848		Excellent	E	Excellent	
JPL → NSIDC	AMSR-E	1342	1342	JPL-PODAAC → NSIDC SIDADS	n/a	3562	3562		GOOD	G	GOOD	
NSIDC → GSFC	MODIS, ICESAT, QuikScat	13317	13317	NSIDC DAAC → GDAAC	39	16971	17010	16971	Adequate	A	Adequate	
GSFC → NSIDC	MODIS, ICESAT, QuikScat	63980	90813	GDAAC → NSIDC-DAAC	7842	88828	96670	88828	GOOD	AA	AA	
NSSTC → NSIDC	AMSR-E	7497	7497	NSSTC → NSIDC DAAC	n/a	12612	12612		GOOD	G	GOOD	
LaRC → NCAR	HIRDLS	5395	5395	LDAAC → NCAR	n/a	21811	21811		Excellent	E	Excellent	
US → JAXA	QuikScat, TRMM, AMSR	1431	1431	GSFC-CSAFS → JAXA	n/a	1341	1341		AA	AA	AA	
JAXA → US	AMSR-E	1282	1282	JAXA → JPL-QSCAT	n/a	1609	1609		Adequate	A	Adequate	
GSFC → ERSDAC	ASTER	12450	12450	ENPL-PTH → ERSDAC	4818	87799	87799	87799	Excellent	E	Excellent	
ERSDAC → EROS	ASTER	26832	26832	ERSDAC → EROS PTH	n/a	86559	86559		Excellent	E	Excellent	
GSFC → KNMI	OMI	3282	3282	GSFC-MAX → OMI-PDR	n/a	22470	22470		Excellent	E	Excellent	
Notes: Flow Requirements include TRMM, Terra, Aqua, Aura, ICESAT, QuikScat												
									Ratings Summary			
									Jun-06	Req	Oct-06	
									Score	Prev	Score	
*Criteria:	Excellent	Total Kbps > Requirement * 3		Excellent					8	8	8	
	GOOD	1.3 * Requirement <= Total Kbps < Requirement		GOOD					7	6	6	
	Adequate	Requirement < Total Kbps < Requirement * 1.3		Adequate					4	4	4	
	Almost Adequate	Requirement / 1.3 < Total Kbps < Requirement		Almost Adequate					1	2	2	
	LOW	Requirement / 3 < Total Kbps < Requirement / 1		LOW					2	2	2	
	BAD	Total Kbps < Requirement / 3		BAD					0	0	0	
									Total	22	22	22
									GPA	2.93	2.86	2.86

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 (June and October '06). Thus as 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 sum of the MRTG user flow plus the iperf measurement – it is this value which is used as the basis of the ratings

1) EROS:Rating: Continued **Low**Web Page: <http://ensight.eos.nasa.gov/Networks/production/EROS.shtml>

Test Results:

Source → Dest	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
	Best	Median	Worst			
GSFC-DAAC → EROS LPDAAC	220.1	197.4	92.5	46.8	244.2	205.7
GSFC-PTH → EROS PTH	154.4	100.1	54.9			
ERSDAC → EROS	86.8	86.6	20.6	(via APAN / Abilene / vBNS+)		
EROS LPDAAC → GSFC DAAC	132.9	119.3	87.8			
EROS LPDAAC → GSFC ECHO	84.8	71.3	48.4			
EROS PTH → GSFC PTH	356.5	341.4	298.8			

Requirements:

Source → Dest	Date	mbps	Rating
GSFC → EROS	FY '06	285.4	Low
ERSDAC → EROS	FY '06	26.8	Excellent

Comments:

The problem from GSFC-PTH to EROS-PTH remains (apparently packet loss on or near vBNS+), so the rating is again based on testing between from GDAAC to EROS LPDAAC. Thruput for this pair improved a bit (the median was only 185 mbps last month).

The PTH hosts are outside the ECS firewalls, and therefore normally have higher thuput – but that is again true this month only for EROS → GSFC flows.

The rating is based on the "Integrated" measurement, and as usual is lower than the sum of the User Flow + iperf. The user flow this month decreased, and had only a modest contribution to the integrated measurement. This 206 mbps value is below 30% under the requirement, so the rating remains "Low".

The median thuput from ERSDAC to EDC-PTH (in support of the ERSDAC to EDC ASTER flow, replacing tapes) is more than 3 times the 26.8 mbps requirement, resulting in an "Excellent" rating.

It is planned to discontinue use of vBNS+ this summer, and switch to using a peering in Chicago between NISN and a dedicated OC-12 circuit from EROS.

2) JPL:**2.1) JPL ↔ GSFC:**

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

Web Pages:

http://ensight.eos.nasa.gov/Networks/emsnet/JPL_QSCAT.shtml
http://ensight.eos.nasa.gov/Networks/emsnet/JPL_PODAAC.shtml
http://ensight.eos.nasa.gov/Missions/aqua/JPL_AIRS.shtml

Test Results:

Source → Dest	NET	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
		Best	Median	Worst			
GSFC-CSAFS → JPL-QSCAT	EMS	7.7	7.4	4.8	0.0	7.4	7.4
GSFC-CSAFS → JPL-QSCAT-BU	EMS	3.4	1.9	0.7			
GSFC-PTH → JPL-PODAAC	PIP	6.3	6.2	4.5			
GSFC-DAAC → JPL-AIRS	PIP	42.0	39.5	16.2			
GSFC-PTH → JPL-AIRS	PIP	52.5	46.5	22.4			
GSFC-CNE → JPL-AIRS	SIP	22.8	20.5	11.0			
GSFC-CNE → JPL-MISR	SIP	22.2	17.5	5.7			
JPL-PODAAC → GSFC DAAC	EMS	10.9	9.3	2.5			

Requirements:

Source → Dest	Date	Mbps	Rating
GSFC → JPL via EMSnet	FY '06	3.1	Good
GSFC → JPL via PIP	FY '06	15.8	Good
JPL → GSFC combined	CY '06	7.4	Good

Comments:

GSFC → JPL: Most GSFC-JPL flows moved from EMSnet to NISN PIP in 2 December '05 (But some remained on EMSnet); the requirements are therefore correspondingly divided. **Note: The QSCAT nodes are on the JPL campus LAN, and were switched to use PIP in late June, but were still routed via EMSnet for most of the month. But June will be the last month for the GSFC-JPL EMSnet report.**

EMSnet: Performance on this circuit remained OK after recovering in mid March (had dropped in mid February to 1-4 mbps). The rating remains "Good". **Note that the QSCAT Backup node developed a performance problem in early June – possible an Ethernet duplex mismatch. Prior to that its performance was similar to the QSCAT primary.**

PIP: The PIP flows include QA data from GDAAC to JPL-AIRS, ISTs for several missions (but the JAXA AMSR-E ISTs flow to JPL via EMSnet), and science user flow estimates, totaling 15.76 mbps. Performance from GSFC to JPL-AIRS improved dramatically on approx April 1, due to NISN reconfiguration (was very noisy. with 5 mbps median thruput in March), improving the rating to "Good" at that time, where it remains.

JPL → GSFC: The MLS requirements increased in March (total was 3.2 mbps in December). Performance was stable; the rating remains "Good".

2.2) JPL ↔ LaRC

Ratings: LaRC → JPL: Continued **Adequate**
 JPL → LaRC: Continued **Low**

Web Pages:

http://ensight.eos.nasa.gov/Networks/emsnet/JPL_TES.shtml

http://ensight.eos.nasa.gov/Missions/terra/JPL_MISR.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
	Best	Median	Worst			
LaRC PTH → JPL-PTH	41.0	40.5	18.9	7.5	48.0	40.8
LaRC DAAC → JPL-TES	40.4	38.2	14.2	7.1	45.3	39.6
LaRC DAAC → JPL-MISR	41.2	36.1	8.5			
JPL-PTH → LaRC PTH	37.6	37.6	23.7			

Requirements:

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

Comments:

LaRC → JPL: Performance has been stable since this flow was switched to NISN PIP in Feb '05; MRTG data became unavailable at that time -- the passive "flows" data is now being used instead. The "integrated" thrupt is slightly above the requirement; the rating remains "Adequate".

JPL → LaRC: This requirement is for TES products produced at the TES SIPS at JPL, being returned to LaRC for archiving. The measured thrupt was again stable this month. However, the nominal requirements increased in December (was 35.1 mbps previously) to support increased TES reprocessing. The rating remains "Low".

2.3) ERSDAC → JPL ASTER IST

Rating: n/a

Test Results:

Source → Dest	Medians of daily tests (mbps)		
	Best	Median	Worst
ERSDAC → JPL-ASTER-IST	85.6	78.0	17.3

Comments:

ERSDAC → JPL-ASTER-IST: This test was initiated in March '05, via APAN replacing the EBnet circuit. The typical 78 mbps must be well in excess of the requirements (IST requirements are generally 311 kbps).

3) Boulder CO: Ratings: GSFC → NSIDC: ↑ Almost Adequate → **Good**
 NSIDC → GSFC: Continued **Adequate**

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

GSFC ↔ NSIDC Test Results:

Source → Dest	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
	Best	Median	Worst			
GSFC-DAAC → NSIDC-DAAC	91.3	88.8	64.2	2.8	91.6	88.8
GSFC-PTH → NSIDC-DAAC	91.5	88.3	48.7			
NSIDC DAAC → GSFC-DAAC	17.0	17.0	15.8			

Requirements:

Source → Dest	Date	Mbps	Rating
GSFC → NSIDC	June '06	64.0	Good
NSIDC → GSFC	FY '06	13.3	Adequate

Comments: GSFC → NSIDC: This rating is based on testing from GDAAC to the NSIDC DAAC. The iperf and integrated thrupt values were stable this month. The requirement, however, varies from month to month, based on planned ICESAT reprocessing. This month the reprocessing **IS NOT** included. The thrupt is above this lower requirement by more than 30%, improving the rating to "Good".

NSIDC → GSFC: Performance from NSIDC to GSFC was stable this month, and the median remains slightly less than 30% above the requirement, so the rating remains "Adequate".

Other Testing:

Source → Dest	Medians of daily tests (mbps)			Requirement	Rating
	Best	Median	Worst		
JPL → NSIDC-SIDADS	4.0	3.6	1.6	1.34	Good
GSFC-ISIPS → NSIDC (iperf)	90.3	87.4	39.4		
GSFC-ISIPS → NSIDC (ftp)	23.8	23.1	12.7		
NSIDC → GSFC-ISIPS (iperf)	16.4	15.7	14.4		
NSSTC → NSIDC DAAC	12.7	12.6	0.3	7.5	Good
ASF → LASP	1.33	1.07	0.57	0.024	Excellent
GSFC EDOS → LASP	31.5	16.8	6.5	0.4	Excellent
GSFC PTH → LASP (iperf)	33.7	17.4	6.9		
GSFC PTH → LASP (sftp)	0.49	0.48	0.45		

Comments:

JPL → NSIDC-SIDADS: Thrupt remains above the requirement (but below 3 x), so the rating remains "Good".

GSFC-ISIPS ↔ NSIDC: Performance from ISIPS to NSIDC is at nominal levels for the circuit capacity. Testing from NSIDC to ISIPS is stable and gets thrupt similar to NSIDC to GDAAC.

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

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

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

GSFC → LASP: Thrupt is MUCH lower than iperf, also lower than the 2.4 mbps window size limitation, similar to reports from POC. Under investigation. Will try some tests to see if window size increase can improve thrupt in this case.

4) GSFC ↔ LaRC:

Ratings: GSFC → LARC: Continued **Adequate**
 LDAAC → GDAAC: Continued **Excellent**

Web Pages: <http://ensight.eos.nasa.gov/Networks/emsnet/LARC.shtml>
<http://ensight.eos.nasa.gov/Networks/emsnet/LATIS.shtml>

Test Results:

Source → Dest	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
	Best	Median	Worst			
GDAAC → LDAAC	78.1	73.6	41.4	12.7	86.3	75.4
GSFC-NISN → LaTIS	79.0	55.8	16.3			
GSFC-PTH → LaRC-PTH	78.5	74.4	39.6			
GSFC-PTH → LaRC-ANGe	78.8	50.4	12.4			
LDAAC → GDAAC	52.3	51.8	45.9			
LDAAC → GSFC-ECHO	44.1	38.1	24.4			

Requirements:

Source → Dest	Date	Mbps	Rating
GSFC → LARC (Combined)	FY '06	58.5	Adequate
GDAAC → LaRC ECS	FY '06	17.8	Excellent
GSFC → LATIS	FY '06	40.7	Good
LDAAC → GDAAC	FY '06	3.2	Excellent

Comments:

GSFC → LaRC: The combined 58.5 mbps 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. So the rating is now based on the GDAAC to LaRC ECS DAAC thruput, compared to the combined requirement. MRTG and LaTIS user flow data are also no longer available (but the enhanced ECS user flow data is used for the "User Flow" above).

So the **GSFC → LaRC ECS DAAC** thruput remains above the combined requirement, but by slightly less than 30%, so the combined rating remains "Adequate"..

LaRC → GSFC: Performance from LDAAC → GDAAC remained stable with the switch to PIP in Feb '05. The thruput remains more than 3 x the 3.2 mbps requirement (with the backhaul flows removed), so the rating continues as "Excellent".

The thruput from LDAAC to GSFC-ECHO is similar to but a bit lower than LDAAC to GDAAC.

5) ASFRating: Continued **Excellent**Web Page: http://ensight.eos.nasa.gov/Networks/emsnet/ASF_EMS.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)		
	Best	Median	Worst
GSFC-CSAFS → ASF	1.45	1.44	1.24
ASF → LASP	1.33	1.07	0.57
ASF → GSFC-CSAFS	1.39	1.32	0.58

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

Performance is consistent with the T1 (1.5 mbps) circuit capacity.

Requirements:

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

6) NOAA NESDIS:Rating: Continued **Excellent**Web Page: http://ensight.eos.nasa.gov/Networks/emsnet/NOAA_NESDIS.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)		
	Best	Median	Worst
GSFC-SAFS → NOAA	7.05	6.83	4.06
JAXA → NOAA	1.83	1.60	0.86
JPL → NOAA	4.82	4.59	3.39

Requirements:

Source → Dest	FY	Mbps	Rating
GSFC-CSAFS → NESDIS	'06	0.19	Excellent

Comments: The NOAA EMSnet test host was replaced in October '05; all flows are now via the MAX connection. The dominant flow to NOAA is Quikscat data, from GSFC CSAFS. Thruput was stable from all sources, and much higher than the requirement, rating “Excellent”. Thruput to this node from JAXA is consistent with circuit limitations.

NOAA will be moving these tests to a new “CLASS” machine in the future.

7) US ↔ JAXA:

Ratings: JAXA → US: Continued **Adequate**
 US → JAXA: Continued **Almost Adequate**

Web Pages http://ensight.eos.nasa.gov/Networks/emsnet/JAXA_EOC.shtml
http://ensight.eos.nasa.gov/Networks/emsnet/JPL_SEAPAC.shtml
http://ensight.eos.nasa.gov/Networks/emsnet/GSFC_SAFS.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
	Best	Median	Worst			
GSFC-CSAFS → JAXA-EOC	1.53	1.34	0.76	0.32	1.66	1.40
JPL → JAXA-EOC	1.67	1.48	0.45			
JAXA-EOC → JPL-QSCAT	1.61	1.61	0.74			
JAXA-EOC → GSFC-DAAC	1.50	1.39	0.58			

Requirements

Source → Dest	Date	mbps	Rating
GSFC → JAXA	FY '05, '06	1.43	Almost Adequate
JAXA → US	FY '04 - '06	1.28	Adequate

Comments:

The JAXA circuit was moved to PIP in December '05 – performance reductions were observed. Also, MRTG data was no longer available. [This month the user flow measurement was restored from the ECS routers.](#)

US → JAXA: Performance from GSFC was stable this month – thruput remains very slightly below (within 30% of) the requirement, so the rating remains “Almost Adequate”.

Performance from JPL was similar, with slightly higher peaks.

JAXA → US: Performance remained consistent with the ATM PVC. The requirement was increased in Version 1.4 of the EOS Networks Handbook. This month testing from JAXA to JPL was stable; but without adding the user flow, the thruput was no longer 30% over the requirement, so the rating remains “Adequate”.

Slnet / APAN Testing:

It is planned to remove the NASA – JAXA dedicated circuit above, by September 2006. After that, all the above data will be transferred via Slnet or APAN. Accordingly, the following tests are run via Slnet:

Source → Dest	Medians of daily tests (mbps)			Requirement	Rating
	Best	Median	Worst		
GSFC-PTH → JAXA	2.53	2.10	1.68	1.43	Good
GSFC-EDOS → JAXA	2.01	1.87	1.40		
GSFC-PTH → JAXA (sftp)	1.72	1.32	1.09		
JAXA → GSFC	8.68	2.88	0.58	1.28	Good

Comments: Thruput from GSFC to JAXA about 9 mbps steady in March, **but dropped substantially on April 6 – and was restored to 9 mbps in late June.** In July the end nodes were tuned to optimize the improved circuit, and thruput from GSFC to JAXA now typically exceeds 50 mbps. Even in the degraded conditions of June, performance via Slnet was still superior to the ATM circuit (also cheaper!), and would be rated “Good”

[New testing this month from EDOS performed similarly to GSFC-PTH, but will be limited by a 10 mbps Ethernet. Sftp performance is also lower limited by ssh window size.](#)

8) ERSDAC ↔ US:Rating: Continued **Excellent**Web Page : <http://ensight.eos.nasa.gov/Networks/emsnet/ERSDAC.shtml>

Test Results:

Source → Dest	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
	Best	Median	Worst			
GDAAC → ERSDAC	21.2	16.8	9.9			
GSFC ENPL (Fast Ethernet) → ERSDAC	89.2	87.8	13.7	4.8	92.6	21.6
GSFC-EDOS → ERSDAC	6.3	2.7	1.6			

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. MRTG data is no longer available due to that change, but [enhanced EOS flow information has been restored this month](#).

The thrupt 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. [Note: Testing from EDOS to ERSDAC was switched in late March to an EDOS FastE production node, but no performance improvement was observed – under investigation.](#)

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

Other Testing:

Source → Dest	Medians of daily tests (mbps)		
	Best	Median	Worst
ERSDAC → JPL-ASTER IST	85.6	78.0	17.3
ERSDAC → EROS	86.8	86.6	20.6

Requirements:

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

Comments:

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

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)

9) SIPS Sites:

Web Pages <http://ensight.eos.nasa.gov/Missions/terra/NCAR.shtml>
<http://ensight.eos.nasa.gov/Missions/aqua/RSS.shtml>
<http://ensight.eos.nasa.gov/Missions/aqua/NSSTC.shtml>
http://ensight.eos.nasa.gov/Missions/aura/KNMI_OMIPDR.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)			Requirement	Rating
	Best	Median	Worst		
LaRC → NCAR	24.1	21.8	16.8	5.4	Excellent
GSFC → NCAR	93.0	93.0	90.5	5.1	Excellent
JPL → RSS	5.5	5.2	2.4	2.4	Good
GHCC → NSIDC	12.7	12.6	0.3	7.5	Good
GSFC → KNMI-ODPS	22.7	22.5	19.5	3.3	Excellent
GSFC → KNMI-ODPS-B/U	85.1	85.0	83.1		

Comments:

NCAR: NCAR (Boulder, CO) is a SIPS for MOPITT (Terra, from LaRC), and has MOPITT and HIRDLS QA (Aura, from GSFC) requirements. Thruput from LaRC (via NISN to MAX to Abilene) is a bit above 3 x the requirement, so the rating remains “Excellent”. From GSFC the median thruput is extremely steady at well over 3 x the requirement (from a Fast-E test source), so that rating also remains “Excellent”. From a GigE test source, a problem similar to the ERSDAC “GigE” problem, above, exists, and creates considerable variability (although the variance was reduced this month) to the results. Thruput therefore has higher peaks and medians (212 and 126 mbps), but lower dips (65 mbps) than from the Fast-E source.

RSS: RSS (Santa Rosa, CA) is a SIPS for AMSR-E, receiving data from JPL, and sending its results to GHCC (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. Thruput improved to the above values at that time – more that 30% above the requirement, the rating remains “Good”.

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

GHCC (NSSTC) → NSIDC: This flow represents Level 2 and 3 AMSR-E products produced at GHCC, and sent to NSIDC for archiving. Median thruput is more than 30% over the requirement, rating “Good”.

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. Thruput to the ODPS backup server at KNMI is limited only by a Fast Ethernet connection at KNMI, and gets about 85 mbps steady! The rating is based on the results to the OMI PDR primary server, protected by a firewall, and are quite a bit lower. Thruput improved from 17 mbps in late March, and remains well above 3 x the requirement, rating “Excellent”.