

EOS Production Sites Network Performance Report

This is a monthly summary of EOS network performance testing between production sites for October 2005 -- comparing the measured performance against the requirements.

Highlights:

- Very stable performance
- Testing to NOAA resumed – new NOAA Server, not via EMSnet
- Added results for tests between JAXA and NASA via Slnet
- Outstanding Issues:
 - GSFC to JPL via PIP
 - JPL to LaRC TES flow (resolved in November)
- 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: ↑

JPL → LaRC: Bad → **Low**

Downgrades: ↓

GSFC → EDC: Almost Adequate → **Low**

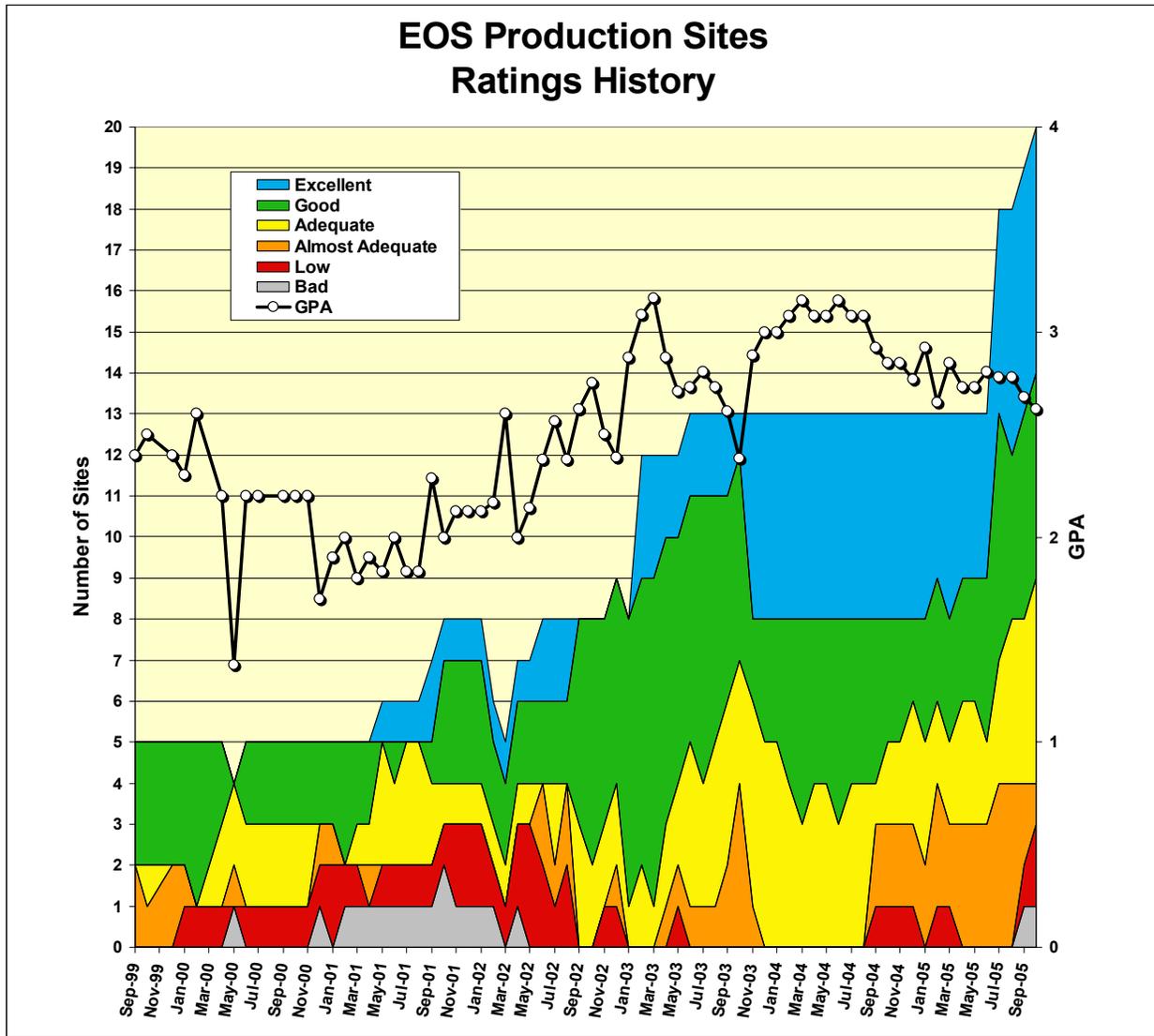
GSFC → JPL (PIP): Low → **Bad**

GSFC → JPL (EMSnet): Excellent → **Good**

GSFC → NSIDC: Good → **Adequate**

Testing Resumed:

GSFC → NOAA: **Excellent**

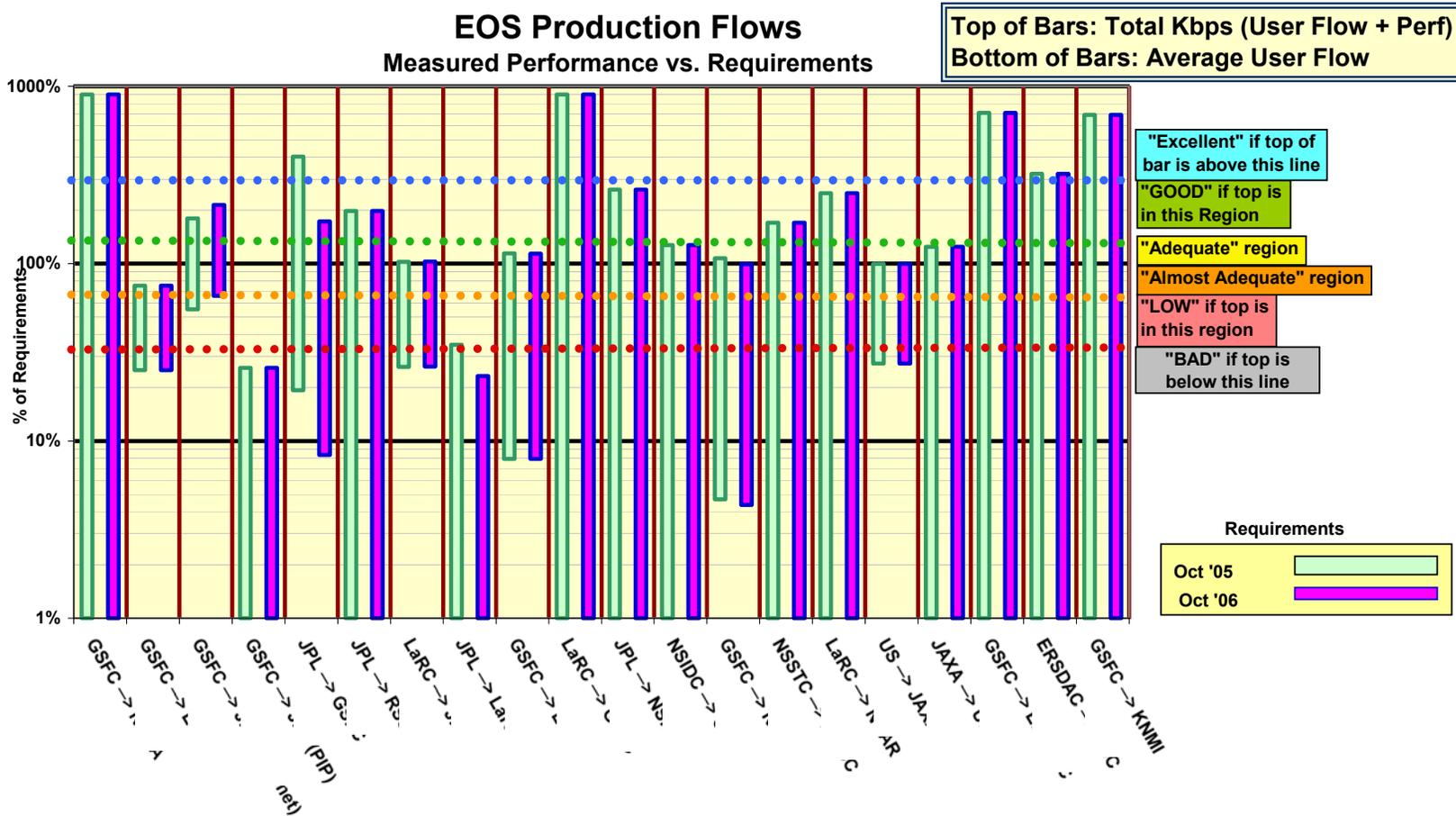


The chart above shows the number of sites in each classification since EMSnet testing started in September 1999. Note that these ratings do NOT relate to absolute performance -- they are relative to the EOS requirements.

Network Requirements vs. Measured Performance

October 2005		Requirements (kbps)		Testing							
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
		Oct-05	Oct-06						Oct-05	Prev	Oct-06
GSFC → ASF	QuikScat, Radarsat	n/a	n/a	GSFC-CSAFS → ASF	1	1322	1323	1322	n/a	n/a	n/a
ASF → JPL	QuikScat, Radarsat	n/a	n/a	ASF → JPL-SEAPAC	77	1316	1393		n/a	n/a	n/a
GSFC → NOAA	QuikScat	189	0	GSFC-CSAFS → NESDIS	n/a	6980	6980		Excellent	n/a	Excellent
GSFC → EDC	MODIS, LandSat	285361	285361	GDAAC → EDC DAAC	71657	201530	273187	214038	LOW	AA	LOW
GSFC → JPL (EMSnet)	ASTER, QuikScat, MLS, etc.	3144	2634	GSFC-CSAFS → JPL-SEAPAC	1735	5408	7143	5657	GOOD	E	GOOD
GSFC → JPL (PIP)	AIRS, ISTs	15757	15757	GDAAC → JPL-AIRS	0	4061	4061	4061	BAD	L	BAD
JPL → GSFC	AMSR-E, MISR, etc.	3181	7387	JPL-PODAAC → GDAAC	615	12181	12796		Excellent	E	GOOD
JPL → RSS	AMSR-E	2488	2488	JPL-PODAAC → RSS	n/a	4938	4938		GOOD	G	GOOD
LaRC → JPL	TES, MISR	39553	39553	LDAAC → JPL-TES	10375	38904	49279	40588	Adequate	A	Adequate
JPL → LaRC	TES	35073	52626	JPL-TES → LDAAC (ftp)	n/a	12193	12193		LOW	B	BAD
GSFC → LaRC	CERES, MISR, MOPITT	58456	58594	GDAAC → LDAAC	4641	65200	69841	66771	Adequate	A	Adequate
LaRC → GSFC	MODIS, TES	3159	3160	LDAAC → GDAAC	8	51388	51396	51388	Excellent	E	Excellent
JPL → NSIDC	AMSR-E	1342	1342	JPL-PODAAC → NSIDC SIDADS	n/a	3514	3514		GOOD	G	GOOD
NSIDC → GSFC	MODIS, ICESAT, QuikScat	13317	13317	NSIDC DAAC → GDAAC	n/a	16964	16964		Adequate	A	Adequate
GSFC → NSIDC	MODIS, ICESAT, QuikScat	84105	90813	GDAAC → NSIDC-DAAC	3947	90197	94144	90352	Adequate	G	Adequate
NSSTC → NSIDC	MODIS, ICESAT, QuikScat	7497	7497	NSSTC → NSIDC DAAC	n/a	12756	12756		GOOD	G	GOOD
LaRC → NCAR	HIRDLS	5395	5395	LDAAC → NCAR	n/a	13468	13468		GOOD	G	GOOD
US → JAXA	QuikScat, TRMM, AMSR	1431	1431	GSFC-CSAFS → JAXA	391	1281	1672	1430	AA	AA	AA
JAXA → US	AMSR-E	1282	1282	JAXA → JPL-SEAPAC	0	1592	1592		Adequate	A	Adequate
GSFC → ERSDAC	ASTER	12450	12450	ENPL-PTH → ERSDAC	n/a	88359	88359		Excellent	E	Excellent
ERSDAC → EDC	ASTER	26832	26832	ERSDAC → EDC PTH	n/a	86169	86169		Excellent	E	Excellent
GSFC → KNMI	OMI	3282	3282	GSFC-MAX → OMI-PDR	n/a	22664	22664		Excellent	E	Excellent
Notes: Flow Requirements (from BAH) include TRMM, Terra, Aqua, Aura, ICESAT								Ratings Summary			
								Oct-05	Req	Oct-06	
								Score	Prev	Score	
*Criteria:	Excellent	Total Kbps > Requirement * 3			Excellent			6	6	5	
	GOOD	1.3 * Requirement <= Total Kbps < Requirement			GOOD			5	5	6	
	Adequate	Requirement < Total Kbps < Requirement * 1.3			Adequate			5	4	5	
	Almost Adequate	Requirement / 1.3 < Total Kbps < Requirement			Almost Adequate			1	2	1	
	LOW	Requirement / 3 < Total Kbps < Requirement / 1.3			LOW			2	1	1	
	BAD	Total Kbps < Requirement / 3			BAD			1	1	2	
								Total	20	19	20
								GPA	2.63	2.68	2.53

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 (October '05 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 MRTG 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) ASFRating: **N/A**Web Page: http://ensight.eos.nasa.gov/Networks/emsnet/ASF_EMS.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
	Best	Median	Worst			
GSFC-CSAFS → ASF	1.39	1.32	1.04	0.001	1.32	1.32
ASF → NESDIS	1.40	1.40	0.81			
ASF → LASP	1.36	1.35	0.32			
ASF → GSFC-CSAFS	1.40	1.39	0.63			
ASF → JPL-SEAPAC	1.37	1.32	1.02			

Comments: Thruput test results were stable this month to and from all destinations; the 1.3 to 1.4 mbps outbound total is as expected for a single T1 (1.54 mbps) circuit, as is the 1.3 mbps inbound. [Testing to NOAA resumed \(to a replacement host\) -- performance as expected.](#) [Testing was also initiated to LASP, also with reasonable results.](#) Previously, testing was to NSIDC-SIDADS, as a proxy for LASP. Performance to NSIDC-SIDADS had dropped to under 200 kbps with the NSIDC switch from EMSnet to PIP in February. But the nominal results to LASP suggest a local problem at NSIDC – perhaps Ethernet mismatch.

Since the requirement from ADEOS has been deleted, the remaining ASF requirements are very low, and are mostly based on estimated ECS interDAAC queries, not production flows. These flow estimates are not considered reliable enough to use as a basis for testing, so the rating is "N/A".

2) EDC:Rating: **↓ Almost Adequate → Low**Web Page: <http://ensight.eos.nasa.gov/Networks/emsnet/EDC.shtml>

Test Results:

Source → Dest	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
	Best	Median	Worst			
GSFC-DAAC → EDC LPDAAC	227.1	201.5	113.7	71.7	273.2	214.0
GSFC-PTH → EDC PTH	188.6	145.2	116.7			
ERSDAC → EDC	88.8	86.2	24.8	(via APAN / Abilene / vBNS+)		
EDC DAAC → GSFC DAAC	130.0	118.1	81.2			
EDC PTH → GSFC PTH	280.4	201.9	9.9			

Requirements:

Source → Dest	Date	mbps	Rating
GSFC → EDC	FY '05	285.4	Low
ERSDAC → EDC	FY '05	26.8	Excellent

Comments:

This month there were problems between GSFC-PTH and EDC-PTH, in both directions (under investigation), so the rating is based on testing between from GDAAC to EDC LPDAAC. The PTH hosts are outside the EDC firewalls, and therefore normally have higher thuput – but not this month.

The rating is based on the "Integrated" measurement, and as usual is lower than the sum of the MRTG and iperf. The user flow this month dropped a bit, and had only a small contribution to the integrated measurement. This 214 mbps value is more than 30% below the requirement, so the rating drops to Low". Hopefully when the PTH problem is fixed the rating will improve again.

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.

3) JPL:**3.1) JPL ↔ GSFC**

Ratings: JPL → GSFC: Continued **Excellent**
 GSFC → JPL: PIP: ↓ Low → **Bad**
 EMSnet: Continued **Excellent**

Web Pages:

http://ensight.eos.nasa.gov/Networks/emsnet/JPL_SEAPAC.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-SEAPAC	EMS	7.7	5.4	0.6	1.7	7.1	5.6
GSFC-PTH → JPL-PODAAC	EMS	6.2	5.8	3.4	1.7	7.5	5.9
JPL-PODAAC → GSFC DAAC	EMS	12.3	12.2	5.4	0.7	12.9	
GSFC-DAAC → JPL-AIRS	PIP	19.2	4.1	1.3			
GSFC-PTH → JPL-AIRS	PIP	17.0	4.3	0.7			
GSFC-CNE → JPL-AIRS	SIP	20.0	18.8	12.4			

Requirements:

Source → Dest	Date	Mbps	Rating
GSFC → JPL via EMSnet	Oct '05	1.27	Good
GSFC → JPL via PIP	Oct '05	15.76	Low
JPL → GSFC combined	Oct '05	3.14	Excellent

Comments:

GSFC → JPL: The GSFC to JPL flows are still divided between EMSnet (to PODAAC, SEAPAC, [MLS](#), JAXA, and ASF destinations) and PIP (AIRS) – the requirements are therefore correspondingly divided. However, since most traceroutes are blocked, it is not clear that the flows are actually taking their intended routes. Hopefully, in December, all the above flows will move to PIP, and the EMSnet circuit to JPL will be removed.

EMSNET: The 3.14 mbps requirement is revised from last month's 1.27 mbps, based on adding the [MLS SIPS flows](#), as derived from version 1.4 of the EOS Networks Handbook. The performance on this circuit has been stable since the NISN 6 to 8 mbps PVC change in late March. With the increased requirement, however, the rating drops to "Good". The CSFAS to SEAPAC "integrated" data is (like most other sites) just a bit higher than the iperf results alone, and lower than the sum of the median iperf and average MRTG. This again indicates that adding a small average user flow to the median iperf overstates the true situation.

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. The throughput via PIP appears bimodal, usually either about 1.5 mbps or 20 mbps – quite similar from the GDAAC and GSFC-PTH nodes. It has been much more stable from GSFC CNE (via SIP, usually 18-20 mbps). This extreme noisiness causes the median to be well below the requirement, resulting in an "Low" rating. From CNE, the median throughput is above the requirement, and would be rated "Adequate". However, since late October, the throughput from the CNE node degraded to match the others.

JPL → GSFC: The requirement from JPL to GSFC includes flows from JAXA and ASF which go via JPL, and includes GSFC and NOAA destinations. This requirement dropped substantially with the removal of ADEOS. The new 3.14 mbps requirement above now includes [MLS flows to GES DAAC for archiving](#) -- taken from version 1.4 of the EOS Networks Handbook. Since the combined 12.9 mbps throughput is more than 3 times that, the rating remains "Excellent". The MLS requirements increase in Jan 2006; the rating would drop to "Good":

3.2) JPL ↔ LaRC

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

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 DAAC → JPL-TES	41.1	38.9	6.3	10.4	49.3	40.6
LaRC DAAC → JPL-MISR	41.6	38.9	5.7			
LaRC PTH → JPL-PTH	N/A	N/A	N/A			
JPL-TES → LaRC DAAC (ftp)	12.5	12.2	4.5			

Requirements:

Source → Dest	Date	Mbps	Rating
LaRC DAAC → JPL-TES	Oct '05	29.8	Adequate
LaRC DAAC → JPL-MISR	Oct '05	18.5	Good
LaRC DAAC → JPL-Combined	Oct '05	39.5	Adequate
JPL → LaRC	Oct '05	35.1	Low

Comments:

LDAAC → JPL: Performance has been stable since this flow was switched to NISN PIP on 10 Feb; MRTG data became unavailable at that time -- the passive “flows” data is now being used instead. The LaRC-PTH to JPL-PTH testing also was disabled by this transition, since the LaRC-PTH node switched to PIP, while JPL-PTH remained on EMSnet, and thus did not have connectivity (This will hopefully be fixed in December). The “integrated” thruput is just above the requirement; the rating remains “Adequate”.

JPL → LDAAC: This requirement was identified in version 1.4 of the EOS Networks Handbook, and is for TES products produced at the TES SIPS at JPL, being returned to LaRC for archiving. Testing of this capability began via ftp pulls at LDAAC from TES. While this is known to be window limited, the measured thruput improved this month to just above 1/3 of the requirement, **improving the rating to “Low”**. Iperf testing began in November, and looks much better.

3.3) ERSDAC → JPL ASTER IST

Rating: n/a

Test Results:

Source → Dest	Medians of daily tests (mbps)		
	Best	Median	Worst
ERSDAC → JPL-ASTER-IST	87.9	69.7	19.4

Comments:

ERSDAC → JPL-ASTER-IST: This test was initiated in March, via APAN replacing the EBnet circuit. The typical 70 mbps must be well in excess of the requirements (IST requirements are generally 311 kbps).

4) NSIDC:

Ratings: GSFC → NSIDC: ↓ Good → **Adequate**
 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	91.0	90.2	55.9	3.9	94.1	90.4
GSFC-PTH → NSIDC-DAAC	91.9	90.9	59.9			
NSIDC DAAC → GSFC-DAAC	17.0	17.0	13.9			

Requirements:

Source → Dest	Date	Mbps	Rating
GSFC → NSIDC	Oct '05	84.1	Good
NSIDC → GSFC	Dec '04	13.3	Adequate

Comments:

GSFC → NSIDC: This flow was switched from EMSnet to NISN PIP on 8 February -- as a result of this switch, the MRTG data became unavailable -- the passive "flows" data is now being used instead. The rating is based on testing from GDAAC to the NSIDC DAAC. The iperf and integrated thruput values were stable this month. The requirement, however, varies from month to month, based on planned ICESAT reprocessing. This month the reprocessing **IS** included. So the thruput remains above the requirement, but no longer with a 30% margin, so the rating drops to "Adequate"

NSIDC → GSFC: Performance from NSIDC to GSFC was stable this month, and the median remains slightly below 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	3.5	2.3	1.34	Good
GSFC-ISIPS → NSIDC (iperf)	90.4	90.0	53.7		
GSFC-ISIPS → NSIDC (ftp)	24.0	23.9	19.9		
NSIDC → GSFC-ISIPS (iperf)	16.1	15.7	14.5		
NSSTC → NSIDC DAAC	12.9	12.8	0.4	7.5	Good
ASF → LASP	1.36	1.35	0.32	0.73	Good

Comments:

JPL → NSIDC-SIDADS: This flow switched from EMSnet to PIP on Feb 8, and thruput dropped from 6.1 mbps previously. Thruput remains below 3 x the requirement, so the rating remains "Good".

GSFC-ISIPS ↔ NSIDC: Performance from ISIPS to NSIDC was fixed on 8 February, after having problems since July '04. Performance is at nominal levels for the circuit capacity. Testing from NSIDC to ISIPS is stable and gets thruput similar to NSIDC to GDAAC.

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

ASF → LASP: Began testing from ASF to LASP node – performance limited by ASF T1 circuit, rating "Good". Previous testing from ASF to NSIDC-SIDADS dropped to 160 kbps with the NSIDC switch to PIP in February (was 1.4 mbps prior to that). Since tests to LASP are OK, and to SIDADS poor, problem appears to be at SIDADS, perhaps an Ethernet mismatch.

5) GSFC ↔ LaRC:

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

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

Test Results:

Source → Dest	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
	Best	Median	Worst			
GDAAC → LDAAC	76.7	65.2	29.1	4.6	69.8	66.8
GSFC-NISN → LaTIS	76.9	61.4	9.9			
GSFC-PTH → LaRC-PTH	77.8	65.7	26.9			
LDAAC → GDAAC	52.3	51.4	32.0	0.008	51.4	51.4

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 thrupt, compared to the combined requirement. MRTG and LaTIS user flow data are also no longer available (but the ECS user flow data is used for the "User Flow" above).

So the GSFC → LaRC ECS DAAC thrupt is now above the combined requirement, but by less than 30%, so the combined rating remains "Adequate".

LaRC → GSFC: Performance remained stable with the switch to PIP in Feb '05. The requirement jumped from 6.8 mbps to 31.7 mbps in Oct '03, to incorporate the backhaul of all LaRC science outflow via GSFC. However, the backhaul portion of the requirement has been removed. The thrupt remains more than 3 x the 3.2 mbps requirement, so the rating continues as "Excellent".

6) NOAA NESDIS:

Rating: **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	7.2	7.0	4.6
JPL → NOAA	4.8	4.8	4.4
ASF → NOAA	1.4	1.4	0.8

Requirements:

Source → Dest	FY	Mbps	Rating
GSFC-CSAFS → NESDIS	'05	0.19	Excellent

Comments: The NOAA EMSnet test host was removed on 23 June; a replacement has been implemented on October 19. All flows have now been moved to use the MAX connection. The dominant flow to NOAA is Quikscat data, from GSFC CSAFS. Thrupt was much higher than the requirement, rating "Excellent". Testing to this new node from JAXA is planned to start in November.

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	1.51	1.28	0.80	0.39	1.67	1.430
JAXA-EOC → JPL-SEAPAC	1.60	1.59	0.74			
JAXA-EOC → GSFC-DAAC	1.46	1.44	0.50			

Requirements

Source → Dest	Date	mbps	Rating
GSFC → JAXA	FY '05, '06	1.431	Almost Adequate
JAXA → US	FY '04 - '06	1.28	Adequate

Comments:

US → JAXA: The requirements above were reduced in November '03, due to the removal of ADEOS flows. They have again been reduced in January '05 (were 2 mbps previously).

Performance has been stable since it recovered in January, very slightly below this requirement, so the rating remains "Almost Adequate".

JAXA → US: Performance remained consistent with the reduced ATM PVC. The requirement was reduced in November '03 due to the removal of ADEOS requirements, and increased again in Version 1.4 of the EOS Networks Handbook.

This month testing from JAXA to JPL has thrupt above the increased requirements and remains rated "Adequate".

Slnet 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 → JAXA	2.36	1.94	1.52	1.43	Good
JAXA → GSFC	3.61	1.03	0.60	1.28	Almost Adequate

Thruput from GSFC to JAXA is considerably better via this path than EMSnet; also peaks are better from JAXA to GSFC. But the circuit exhibits considerable noisiness.

Note: Beginning July 1 '05, JAXA upgraded their infrastructure, and thrupt was 20-30 mbps from GSFC to JAXA, and 10 mbps from JAXA to GSFC. But on 13 September, thrupt abruptly dropped to the above levels. This remains under investigation.

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)		
	Best	Median	Worst
GDAAC → ERSDAC	21.2	15.8	9.8
GSFC ENPL (Fast Ethernet) → ERSDAC	89.3	88.4	27.0

Requirements:

Source → Dest	FY	Kbps	Rating
GSFC → ERSDAC	'03 - '05	12.5	Excellent

Comments: Dataflow from GDAAC to ERSDAC was switched to APAN in late February, and the performance above is via that route. MRTG and user flow data are no longer available due to this change.

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: EDOS is also FastE connected, and gets the higher performance levels. [It is planned to begin testing from EDOS to ERSDAC in December.](#)

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	87.9	69.7	19.4
ERSDAC → EDC	88.8	86.2	24.8

Requirements:

Source → Dest	Date	mbps	Rating
ERSDAC → EDC	FY '05	26.8	Excellent

Comments:

ERSDAC → EDC: The results from this test (in support of the ERSDAC to EDC ASTER flow, replacing tapes) were stable this month. Thrupt improved to these present values in April '05 (median was 5.6 mbps in March), after an optical jumper was replaced in the Abilene to NGIX-E connection. The median thrupt is more than 3 x the requirement, so the rating is "Excellent"

ERSDAC → JPL-ASTER-IST: This test was initiated in March, 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/aura/KNMI_OMIPDR.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)			Requirement	Rating
	Best	Median	Worst		
LaRC → NCAR	17.1	13.5	7.9	5.4	Good
GDAAC → NCAR	93.1	93.0	92.9	5.1	Excellent
JPL → RSS	5.6	4.9	2.4	2.4	Good
GSFC → KNMI-OMIPDR	23.0	22.7	22.6	3.3	Excellent

Comments: These sites were previously reported in the QA/SCF report. But have been moved to this report since as SIPS, they are part of the EOS data production process. Note that they are not connected by EMSnet.

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 just below 3 x the requirement, so the rating is "Good". From GSFC median thruput is extremely steady at over 3 x the requirement, so that rating is "Excellent".

RSS: RSS (Santa Rosa, CA) is a SIPS for AMSR-E, receiving data from JPL, and sending its results to NSSTC (Huntsville, AL). The NISN dedicated circuit from JPL to RSS was upgraded on August 17 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 – it is now more that 30% above the requirement, the rating remains "Good".

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

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 OMIPDR backup server at KNMI is limited only by a Fast Ethernet connection at KNMI, and gets over 80 mbps steady! The results above are to the OMI PDR primary server, protected by a firewall, and are quite a bit lower. Thruput is still well above 3 x the requirement, rating "Excellent".