

EOS Science Networks Performance Report

This is a summary of EOS QA SCF performance testing for the 3rd quarter of 2007 -- comparing the performance against the requirements from BAH, including Terra, TRMM, QuikScat, Aqua, Aura, and ICESat requirements

Up to date graphical results can be found on the EOS network performance web site: http://ensight.eos.nasa.gov/active_net_measure.html. Or click on any of the individual site links below.

Highlights:

- Continued congestion from the EBnet router at GSFC to the “Doors”
 - Affects daily worst performance from GES-DAAC, MODIS, GSFC-PTH
 - Compare performance with GSFC-ENPL.
- Otherwise, very stable performance.
 - **GPA 3.60** (was 3.71 last month)
- UIUC, Ohio State, UWash: Test nodes down for this period
- User flow data is now reported for selected sites, including Integrated graphs. See below for a description of the integrated graphs. User flow for additional sites will be added in the future. **But note that user flow info from LaRC is not available.**
- The Internet2 Backbone has now been replaced, from the previous Abilene backbone, based on 10 gbps Qwest fibers, to the new Internet2 backbone, based on Level3 fibers. Multiple 10 gbps paths are available over this backbone – one of which is used for IP service, replacing Abilene. As nodes were switched, step changes in performance are often observed; sometimes more than once.
- The Nov '07 requirements are used as the basis for the ratings

Ratings:

Rating Categories:

Excellent : median of daily worst cases > 3 x requirement

Good : median of daily worst cases > requirement

Adequate : median of daily worst cases < requirement
and
median of daily medians > requirement

Low : median of daily medians < requirement.

Bad : median of daily medians < 1/3 of the requirement.

Ratings Changes:

Upgrades: ↑: None

Downgrades: ↓:

LaTIS → UAH-GHRC: Good → **Adequate**

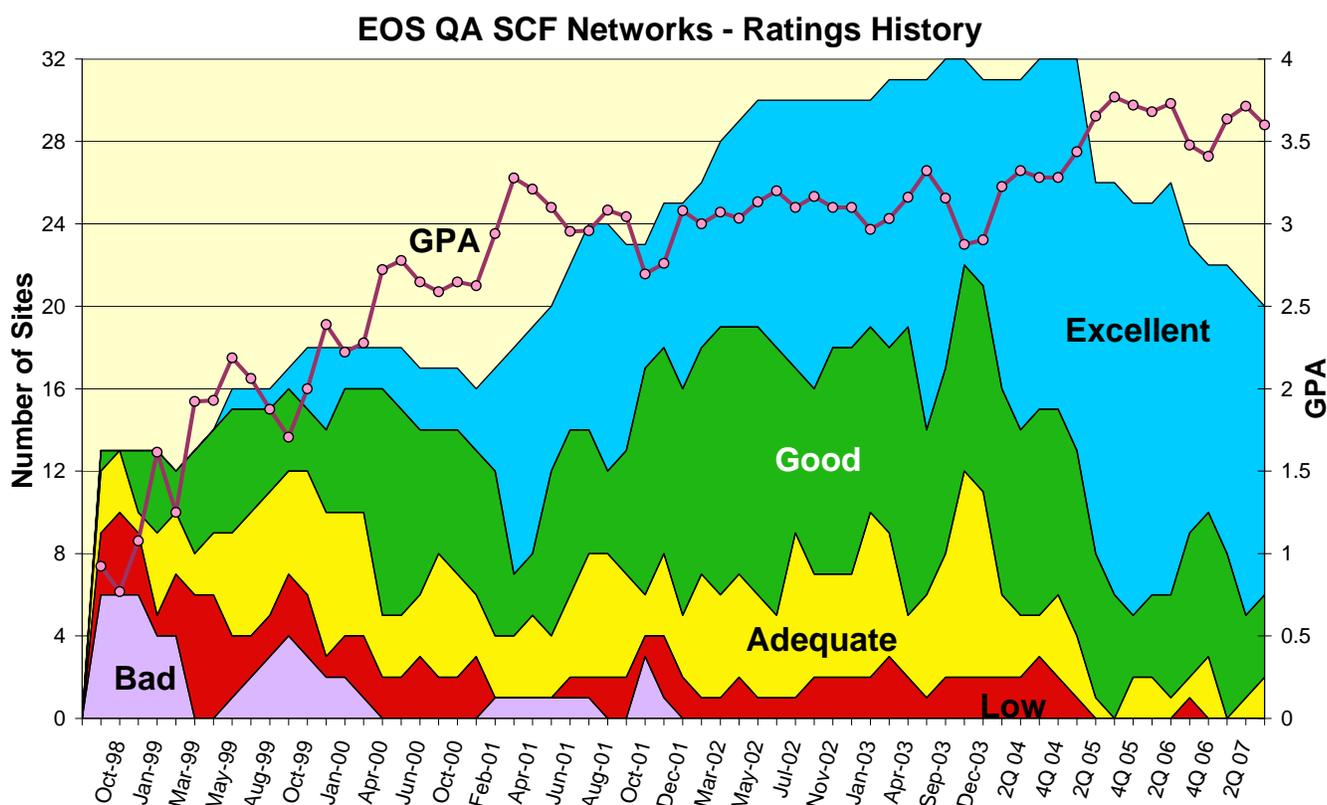
GSFC-ICESAT → Texas: Excellent → **Good**

GSFC-DAAC → WISC: Excellent → **Good**

Testing Down: UIUC (since 9/06), Ohio State (since 3/07), U Wash (since 5/07)

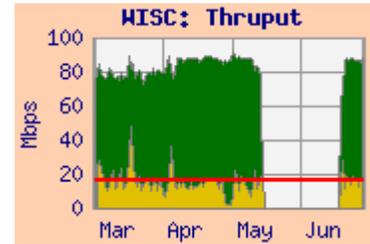
Ratings History:

The chart below shows the number of sites in each classification since the testing started in 1998. Note that these ratings do NOT relate to absolute performance -- they are relative to the EOS requirements. The GPA is calculated based on Excellent: 4, Good: 3, Adequate: 2, Low: 1, Bad: 0



Note that there are fewer sites included in this chart since 1Q'05 due to stopping of testing to Ohio State (3/07) and UIUC (4Q06), discontinuation of tests to NOAA and UMD (3Q06), discontinuation of tests to SAGE III Nodes (2Q06), and moving the reporting for SIPS sites to the "EOS Production sites" performance report (2Q05).

Integrated Charts: Integrated charts are now included for selected sites with the site details. These charts are “Area” charts, with a pink background. A sample Integrated chart is shown here. The yellow area at the bottom represents the daily average of the user flow from the source facility (e.g., GSFC, in this example) to the destination facility (e.g., Wisconsin, in this example) obtained from routers via “netflow”. The green area is stacked on top of the user flow, and represents the “adjusted” daily average iperf thruput between the source-destination pair most closely corresponding to the requirement. This iperf measurement essentially shows the circuit capacity remaining with the user flows active. The adjustments are made to compensate for various systematic effects, and are best considered as an approximation. The red line is the requirement for the flow from the source to destination facilities. Note that during the gap in thruput measurements (from mid May to mid June, in this example) no user flow measurements are recorded either.



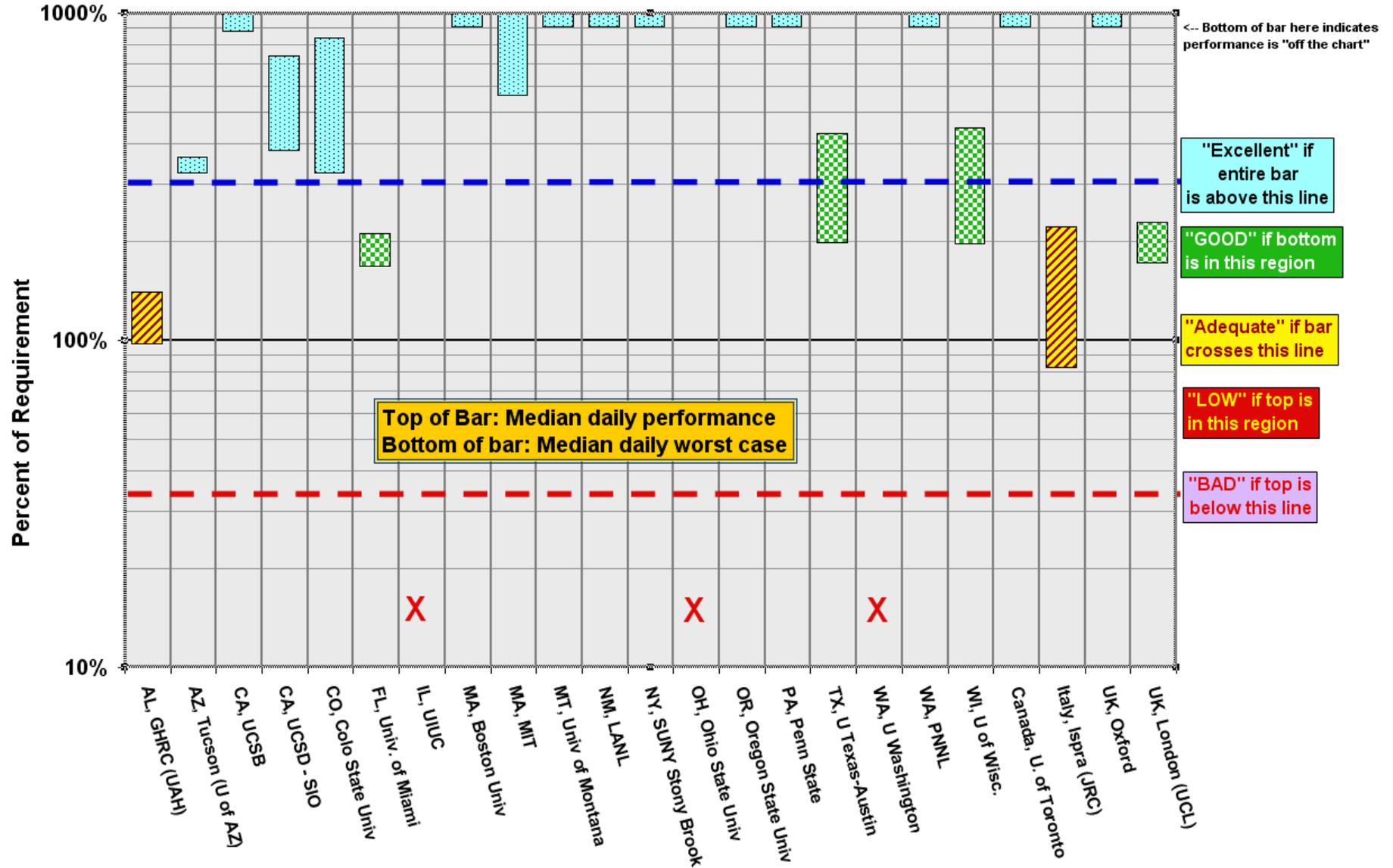
Note: User flow data is not available from LaRC, so sites with requirements from LaRC will not include integrated graphs.

EOS QA SCF Sites: Network Requirements vs. Measured Performance

3 rd Quarter 2007		Testing							
Destination	Team (s)	Requirement	Source Node	Median mbps	Median Daily Worst	Average User Flow	Rating re Current Requirements		Route Tested
		Nov-07					3 Q 2007	2Q07	
AL, GHRC (UAH)	CERES, AMSR-E	6.9	LaTIS	9.8	6.8		Adequate	G	Internet2 via NISN / MAX
AZ, Tucson (U of AZ)	MODIS	2.6	EROS LPDAAC	10.2	9.1	0.04	Excellent	E	Internet2 via Chicago
CA, UCSB	MODIS	3.1	GDAAC	80.7	27.3	0.15	Excellent	E	Internet2 via MAX
CA, UCSD - SIO	ICESAT, CERES	7.1	GSFC-ICESAT	52.5	26.9	0.0	Excellent	E	Internet2 via NISN / MAX
CO, Colo State Univ	CERES	2.1	LaTIS	18.1	6.9		Excellent	E	Internet2 via NISN / MAX
FL, Univ. of Miami	MODIS, MISR	18.8	GDAAC	39.8	31.6	7.9	GOOD	G	Internet2 via MAX
IL, UIUC	MISR	1.1	LaRC DAAC	n/a	n/a		n/a	n/a	Internet2 via NISN / MAX
MA, Boston Univ	MODIS, MISR	3.0	EROS LPDAAC	92.4	63.8	1.1	Excellent	E	Internet2 via Chicago
MA, MIT	ICESAT	7.0	GSFC-ICESAT	74.5	38.9		Excellent	E	Internet2 via NISN / MAX
MT, Univ of Montana	MODIS	0.8	EROS LPDAAC	27.7	22.7	0.07	Excellent	E	Internet2 via Chicago
NM, LANL	MISR	1.0	LaRC DAAC	37.1	31.4		Excellent	E	NISN -> ESNNet via CA
NY, SUNY Stony Brook	CERES	0.6	LaTIS	46.0	29.8		Excellent	E	Internet2 via NISN / MAX
OH, Ohio State Univ	ICESAT	6.3	GSFC-ICESAT	n/a	n/a		n/a	n/a	Internet2 via NISN / MAX
OR, Oregon State Univ	CERES, MODIS	7.6	LaTIS	133.1	80.3		Excellent	E	Internet2 via NISN / MAX
PA, Penn State	MISR	2.6	LaRC DAAC	195.0	120.6		Excellent	E	Internet2 via NISN / MAX
TX, U Texas-Austin	ICESAT	11.1	GSFC-ICESAT	47.5	21.9		GOOD	E	Internet2 via NISN / MAX
WA, U Washington	ICESAT	2.4	GSFC-ICESAT	n/a	n/a		n/a	G	Internet2 via NISN / MAX
WA, PNNL	MISR	1.4	LaRC PTH	91.0	91.0		Excellent	E	NISN -> ESNNet via CA
WI, U of Wisc.	MODIS, CERES, AIRS	16.5	GDAAC	73.4	32.3	21.1	GOOD	E	Internet2 via MAX
Canada, U. of Toronto	MOPITT	0.6	LaRC DAAC	17.2	9.2		Excellent	E	NISN-CA*net4
Italy, Ispra (JRC)	MISR	0.5	LaRC DAAC	1.2	0.4		Adequate	A	NISN - Chi - CA*net - Géant (NY) - GARR
UK, Oxford	HIRDLS	0.5	GSFC-PTH	34.1	13.4	0.15	Excellent	E	Internet2->Géant (DC) -> JAnet
UK, London (UCL)	MISR, MODIS	1.0	LaRC DAAC	2.4	1.8		GOOD	G	NISN - Sprint (SFO) - JAnet
*Rating Criteria:							Rating		
								Current Nov-07	Last Report
Excellent	Median Daily Worst >= 3 *Requirement						Excellent	14	16
GOOD	Median Daily Worst >= Requirement						GOOD	4	4
Adequate	Median Daily Worst < Requirement <= Median Daily Median						Adequate	2	1
LOW	Median Daily Median < Requirement						LOW	0	0
BAD	Median Daily Median < Requirement / 3						BAD	0	0
							Total	20	21
							GPA	3.60	3.71

EOS QA SCF Sites

Daily Median and Worst Performance as a percent of Requirements



Details on individual sites:

Each site listed below is the DESTINATION for all the results reported in that section. The first test listed is the one on which the rating is based -- it is from the source most relevant to the driving requirement. Other tests are also listed. The three values listed are derived from [nominally] 24 tests per day. For each day, a daily best, worst, and median is obtained. The values shown below are the medians of those values over the test period.

1) AL, GHRC (UAH) (aka NSSTC)

Teams: CERES, AMSR

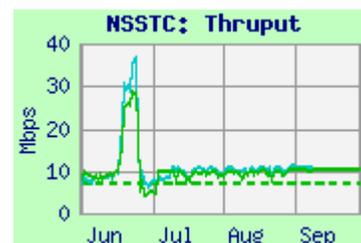
Web Page: <http://ensight.eos.nasa.gov/Missions/terra/NSSTC.shtml>

Rating: ↓ Good → **Adequate**

Domain: nsstc.uah.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC LaTIS	10.2	9.8	6.8	Internet2 via NISN
GSFC-CNE	10.8	10.2	6.7	Internet2 via MAX



Requirements:

Source Node	Date	Mbps	Rating
LaRC LaTIS	'06 – '07	7.0	Adequate

Comments: Performance from both sources dropped in March, due to packet loss problem (fixed in November); the rating drops to “Adequate”.

Note: Testing between NSSTC and NSIDC for AMSR-E (AQUA) is included in the “Production Sites” report.

2) AZ, Tucson (U of AZ):

Teams: MODIS

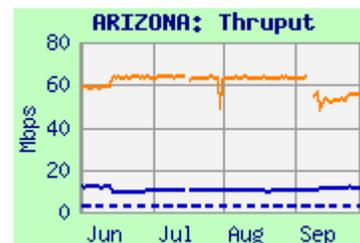
Web Page: <http://ensight.eos.nasa.gov/Missions/terra/ARIZONA.shtml>

Rating: Continued **Excellent**

Domain: arizona.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
EROS LPDAAC	11.9	10.2	9.1	Internet2 via Chicago
GSFC	64.6	63.3	58.5	Internet2 via MAX

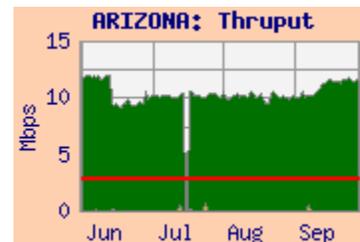


Requirements:

Source Node	FY	Mbps	Rating
EROS LPDAAC	'03 - '07	2.8	Excellent

Comments: The ratings are based on the MODIS flow from EROS – performance was stable this quarter from EROS, rating "Excellent". Performance was also stable from GSFC.

The average user flow from EROS was only approximately 40 kbps – less than 2% of the stated requirement.



3) CA, UCSB :

Teams: MODIS

Domain: ucsb.edu

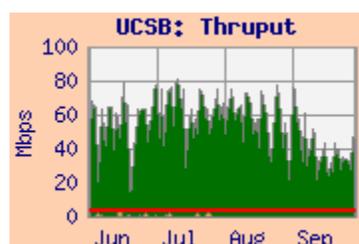
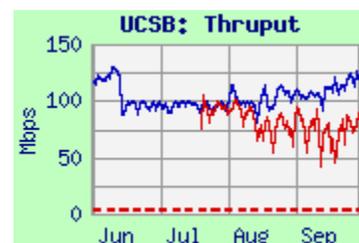
Web page: <http://ensight.eos.nasa.gov/Missions/terra/UCSB.shtml>Ratings: GSFC: Continued **Excellent**
EROS: Continued **Excellent****Test Results:**

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-DAAC	111.7	98.9	78.4	Internet2 via MAX
EROS-LPDAAC	111.3	80.7	27.3	Internet2 via Chicago

Requirements:

Source Node	FY	mbps	Rating
GSFC-DAAC	'04 - '07	3.1	Excellent
EROS-LPDAAC	'04 - '07	2.2	Excellent

Comments: The requirements are split between EROS and GSFC. Testing from GSFC was switched [back] to GDAAC in July. Performance from GSFC was noisy due to the congested EBnet to Doors Gig-E, while performance from EROS has been mostly stable since April '05, with an increase in December '06. The rating remains "Excellent" from both sites. The new Integrated graph shows that the user flow from GSFC averages 150 kbps, but often peaks at approximately the level of the requirement.

**4) CA, UCSD (SIO):**

Teams: CERES, ICESAT

Domain: ucsd.edu

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/UCSD.shtml>Ratings: ICESAT: Continued **Excellent**
LaTIS: Continued **Excellent****Test Results:**

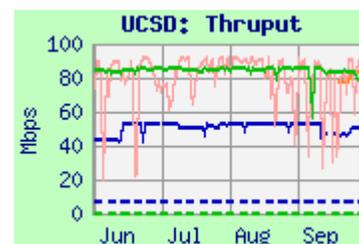
Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	52.6	52.5	26.9	Internet2 via NISN / MAX
LaTIS	87.0	85.1	79.5	Internet2 via NISN / MAX
GSFC-PTH	91.5	85.5	16.8	Internet2 via MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC-ICESAT	'05 - '07	7.0	Excellent
LaTIS	'02 - '07	0.26	Excellent

Comments: The daily minimum from GSFC remains above 3 x the requirement keeping the rating "Excellent". Performance from GSFC-PTH is a bit better on average, but more noisy, due to the EBnet to Doors congestion.

Performance from LaTIS was similar to the previous period. The LaTIS rating also continues as "Excellent".



5) CO, Colo State Univ.:

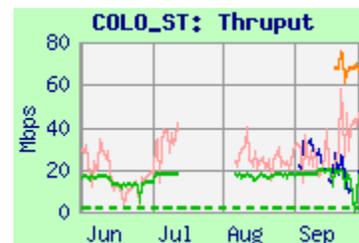
Teams: CERES

Web page: http://ensight.eos.nasa.gov/Missions/terra/COLO_ST.shtmlRating: Continued **Excellent**

Domain: colostate.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaTIS	18.3	18.1	6.9	Internet2 via NISN /MAX
GSFC-ICESAT	44.4	21.0	2.2	Internet2 via NISN /MAX
GSFC-PTH	45.3	27.3	8.0	Internet2 via MAX
GSFC-ENPL	79.7	67.6	29.1	Internet2 via MAX



Requirements:

Source Node	FY	mbps	Rating
LaTIS	'04 - '07	2.15	Excellent

Comments: Performance from both sources **dropped off in mid June** (recovered in July), related to the [Internet2 reconfiguration – The Internet2 Denver node removed; replaced by one at Salt Lake City](#).

Performance from both sources is noisy, but the daily worst from LaTIS remained above 3 x the requirement, so the rating continues “Excellent”. Testing was added from ICESAT at GSFC September, due to user flows. Testing was also added from ENPL-PTH at GSFC (outside most campus firewalls); it shows that the true capacity of the network is significantly higher than seen from either the CNE or EBnet nodes.

6) FL, Univ. of Miami:

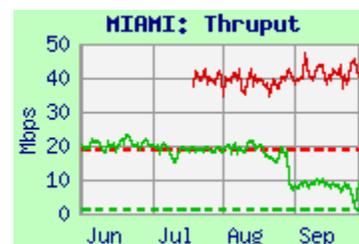
Teams: MODIS, MISR

Domain: rsmas.miami.edu

Web page: <http://ensight.eos.nasa.gov/Missions/terra/MIAMI.shtml>Rating: GSFC:Continued **Good**LaRC: Continued **Excellent**

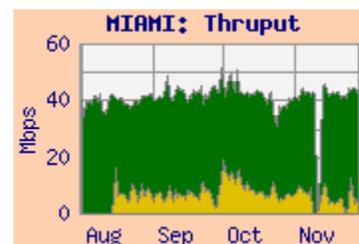
Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-DAAC	46.6	39.8	31.6	Internet2 via MAX
LaRC DAAC	23.1	17.8	12.1	Internet2 via NISN / ATL



Requirements:

Source Node	FY	mbps	Rating
GSFC	'04 - '07	18.8	Good
LaRC DAAC	'04 - '07	1.1	Excellent



Comments: Testing from GSFC was switched to GDAAC in July, thruput from was mostly stable. **Thruput from LaRC dropped in September** (recovered in November). The rating remains “Good” from GSFC, and “Excellent” from LaRC, due to the much lower requirement.

The integrated graph shows that user flow from GSFC averaged about 7.9 mbps for this period, close to 50% of the requirement.

Note: Thruput was about 133 mbps from GSFC and 38 mbps from LaRC until Aug '05; an increase in packet loss was observed at the same time. Since this loss is observed from all sources, the problem appears to be in or near Miami.

7) IL, UIUC:

Teams: MISR

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/UIUC.shtml>

Test Results: None

Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'04 - '06	1.13	n/a

Comments: The UIUC test host has been down since September '06, so testing has been temporarily discontinued. The POC reports the test host may be restored in the future.

Rating: n/a
Domain: uiuc.edu

8) MA, Boston Univ:

Teams: MODIS, MISR

Domain: bu.edu

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/BU.shtml>

Test Results:

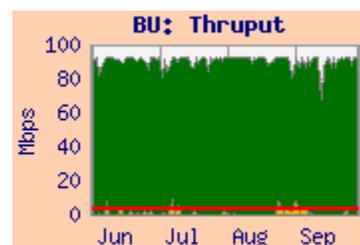
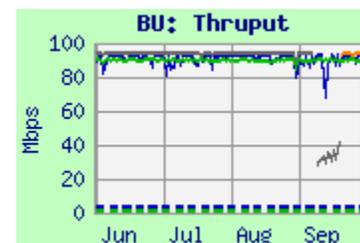
Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
EROS DAAC	92.9	92.4	63.8	Internet2 via Chicago
GSFC ENPL	93.8	93.8	84.1	Internet2 via MAX
LaRC DAAC	91.9	89.9	85.0	Internet2 via NISN / MAX

Requirements:

Source Node	FY	mbps	Rating
EROS DAAC	'04 - '07	3.0	Excellent
LaRC DAAC	'04 - '07	1.2	Excellent

Comments: Performance from all sources was very stable this period. The user flow from EROS averaged about 1.1 mbps for this period (37% of the requirement). The rating from both sources remains "Excellent".

Ratings: EROS: Continued **Excellent**
LaRC: Continued **Excellent**

**9) MA, MIT:**

Teams: ICESAT

Web Page: <http://ensight.eos.nasa.gov/Missions/icesat/MIT.shtml>

Test Results:

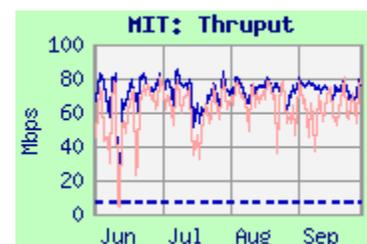
Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	84.1	74.5	38.9	Internet2 via NISN / MAX
GSFC-PTH	85.8	66.0	26.2	Internet2 via MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC	'05 - '07	7.0	Excellent

Comments: Diurnal congestion inside GSFC is no longer a problem; performance from GSFC ICESAT to MIT is much more stable (Best:worst ratio is now only 2.2:1 from ICESAT). The median daily worst is now comfortably above 3 x the requirement; the rating remains "Excellent". From GSFC-PTH the peak performance is similar, but the median and worst are lower, due to the EBnet to Doors congestion.

Rating: Continued **Excellent**
Domain: mit.edu



10) MT, Univ of Montana:

Teams: MODIS

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/MONT.shtml>Rating: Continued **Excellent**

Domain: ntsg.umt.edu

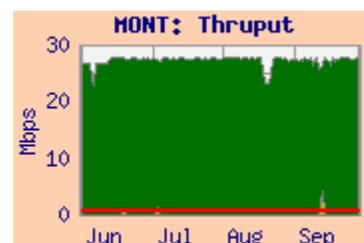
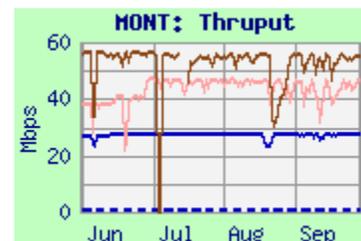
Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
EROS LPDAAC	27.9	27.7	22.7	Chicago / Internet2
GSFC	46.9	46.0	27.2	MAX / Internet2
NSIDC	55.6	54.5	21.6	CU / FRGP / Internet2

Requirements:

Source Node	FY	mbps	Rating
EROS LPDAAC	'04 - '07	0.82	Excellent

Comments: Performance was very stable this period -- the diurnal cycle is much weaker now (Daily Max:Min ratio from EROS is now only 1.2:1 – was about 9:1 until November '06). With the very low requirement, the rating remains "Excellent". The integrated graph shows the daily average user flow from EROS peaking at about 5 mbps, with a long term average of only 70 kbps – 9% of the requirement.

**11) NM, LANL:**

Teams: MISR

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/LANL.shtml>Rating: Continued **Excellent**

Domain: lanl.gov

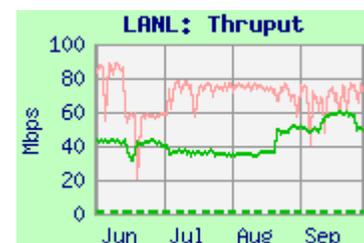
Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	44.2	37.1	31.4	NISN SIP / Chi / ESnet
GSFC-PTH	77.7	73.2	33.6	MAX / ESnet

Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'03-'07	1.03	Excellent

Comments: Performance from LaRC was basically stable this period. With the low requirement, the rating remains "Excellent". Performance from GSFC was also mostly stable this period.



12) NY, SUNY-SB:

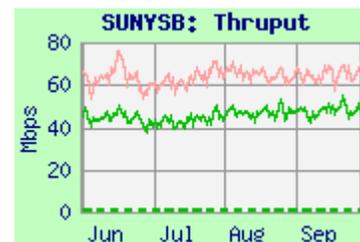
Teams: CERES, MODIS

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/SUNYSB.shtml>Rating: Continued **Excellent**

Domain: sunysb.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaTIS	58.8	46.0	29.8	NISN / NYSErnet
GSFC	77.5	64.0	37.9	MAX / Internet2 / NYSErnet



Requirements:

Source Node	FY	mbps	Rating
LaTIS	'02-'07	0.57	Excellent

Comments: Performance from LaTIS improved at the end of March due to NISN fixing the routing to NYSErnet (was through Internet2 via SFO). Due to the very low requirement, the rating remains "Excellent". Performance from GSFC was stable this period.

13) OH, Ohio State Univ:

Teams: ICESAT

Web Page: http://ensight.eos.nasa.gov/Missions/icesat/OHIO_STATE.shtml

Rating: n/a

Domain: ohio-state.edu

Test Results: None

Requirements:

Source Node	FY	mbps	Rating
GSFC	'05-'07	6.3	n/a

Comments: The Ohio State test host has been down since March '07, so testing has been temporarily discontinued. Testing was restored in December.

14) OR, Oregon State Univ:

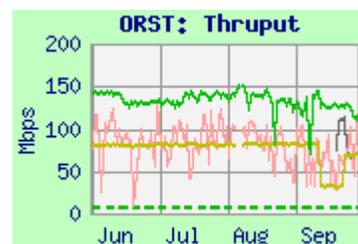
Teams: CERES, MODIS

Domain: oce.orst.edu

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/ORST.shtml>Ratings: LaTIS: Continued **Excellent**GSFC: Continued **Excellent**

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaTIS	144.3	133.1	80.3	Internet2 via NISN / MAX
JPL	83.5	81.1	71.4	Internet2 via CalRen
GSFC-PTH	159.4	83.0	15.1	Internet2 via MAX



Requirements:

Source Node	FY	mbps	Rating
LaTIS	'04 - '07	7.5	Excellent
GDAAC	'02 - '07	0.25	Excellent

Comments: Thruput from LaTIS was mostly stable for this period, well above the requirement. Thruput from GSFC is noisy due to EBnet to Doors congestion. Thruput from JPL is limited by the Fast-E interface on the test node. The ratings from both LaTIS and GSFC remain "Excellent".

15) PA: Penn State Univ:

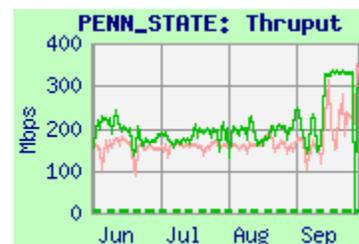
Team: MISR

Web Page: http://ensight.eos.nasa.gov/Missions/terra/PENN_STATE.shtmlRating: Continued **Excellent**

Domain: psu.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	254.6	195.0	120.6	Internet2 via NISN / MAX
GSFC-PTH	204.0	159.4	87.3	Internet2 via MAX



Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'03-'07	2.6	Excellent

Comments: Performance from both sites improved in September with retuning. The EBnet-Doors congestion at GSFC became a factor in October '06 – thruput from GSFC averaged about 300 mbps before that. The rating remains “Excellent”.

16) TX: Univ. of Texas - Austin:

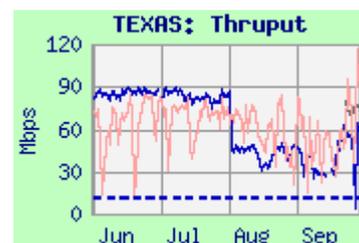
Team: ICESAT

Web Page: <http://ensight.eos.nasa.gov/Missions/icesat/TEXAS.shtml>Rating: ↓ Excellent → **Good**

Domain: utexas.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	60.8	47.5	21.9	Internet2 via NISN / MAX
GSFC-PTH	85.8	66.2	12.2	Internet2 via MAX



Requirements:

Source Node	FY	mbps	Rating
GSFC-ICESAT	05-'07	11.1	Excellent

Comments: Performance from ICESAT dropped in August, and the daily worst thruput is now below 3 x the requirement; so the rating drops to “Good”. There is now more congestion from GSFC-PTH – on the EBnet to Doors GigE, resulting in a lower daily worst, even though the daily best is higher. Testing was added from the ENPL node in September, outside of most of the congested campus infrastructure. It is higher performing and less noisy.

17) WA, PNNL:

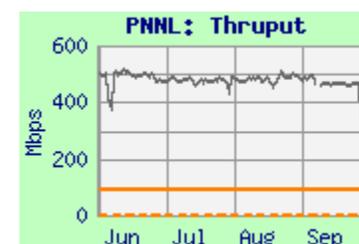
Team: MISR

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/PNNL.shtml>Ratings: LaRC: Continued **Excellent**

Domain: pnl.gov

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC-PTH	91.0	91.0	91.0	NISN / Chi / ESnet
GSFC-ENPL	499.9	475.3	443.5	MAX / ESnet



Requirements:

Source Node	FY	mbps	Rating
LaRC	'04-'07	1.4	Excellent

Comments: Performance from LaRC PTH has been extremely stable, limited by a 100 mbps Ethernet connection; the rating remains “Excellent”. Performance from GSFC-ENPL is **OUTSTANDING!**

18) WA, Univ Washington:

Team: ICESAT

Web Page: <http://ensight.eos.nasa.gov/Missions/icesat/UW.shtml>Rating: **X** Discontinued

Domain: washington.edu

Requirements:

Source Node	FY	mbps	Rating
GSFC-ICESAT	'05-'07	11.7	n/a

Comments: . Testing was stopped in May on request from the UW sysadmin. It will not be included in future editions of this report.

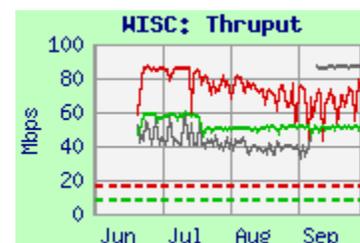
19) WI, Univ. of Wisconsin:

Teams: MODIS, CERES, AIRS Domain: ssec.wisc.edu

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/WISC.shtml>Ratings: GSFC: **↓** Excellent **→** **Good**LARC: Continued **Excellent**

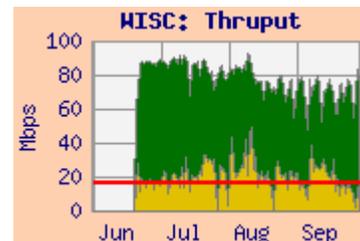
Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-DAAC	88.5	73.4	32.3	MAX / Internet2 / Chi / MREN
LaTIS	54.5	51.0	40.4	NISN / Chicago / MREN
GSFC-ENPL	70.3	41.4	30.3	MAX / Internet2 / Chi / MREN



Requirements:

Source Node	FY	mbps	Rating
GSFC	'04 - '07	16.5	Excellent
LaRC Combined	'05-'07	7.9	Excellent



Comments: Performance from GDAAC was somewhat less stable this month – the daily worst dropped below 3 x the requirement, dropping the rating back to “Good”. Thruput from LaTIS was stable this period; the rating from LaTIS also remains “Excellent”. The integrated graph shows that the average user flow from GSFC was about 21.1 mbps – **actually HIGHER than the requirement!**

20) Canada, Univ of Toronto:

Team: MOPITT

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/TORONTO.shtml>Rating: Continued **Excellent**

Domain: utoronto.ca

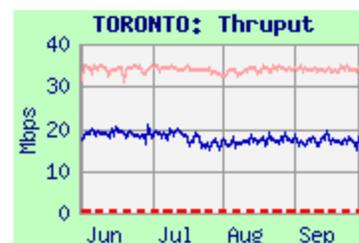
Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	22.2	17.2	9.2	NISN / Chicago / CA*net4
GSFC-PTH	36.4	34.0	29.7	MAX / Internet2 / Chicago / CA*net4

Requirements:

Source Node	FY	kbps	Rating
LaRC DAAC	'02 - '07	100	Excellent
GSFC EOC	'02 - '07	512	Excellent

Comments: Performance from both sources has been stable since December '06. The ratings from both sources remain “Excellent”. User flow from GSFC was about 160 kbps this quarter



21) Italy, EC - JRC:

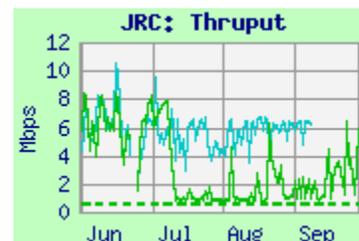
Team: MISR

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/JRC.shtml>Rating: Continued **Adequate**

Domain: jrc.it

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	6.3	1.2	0.4	NISN / UUnet / Milan
GSFC-NISN	6.8	5.9	1.7	NISN / UUnet / Milan



Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'02 – '07	0.52	Adequate

Comments: Routing to JRC was switched to Géant in mid July. But since NISN does not peer with Géant (peering is available at MAX), the route is via NISN to Chicago, then via CA*net, peering with Géant in NY. The daily median from LaRC remains well above the requirement, but the median daily worst is below the requirement, so the rating remains "Adequate". Testing improved in November with retuning.

22) UK, London: (UCL)

Teams: MODIS, MISR

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/UCLSCF.shtml>Rating: Continued **Good**

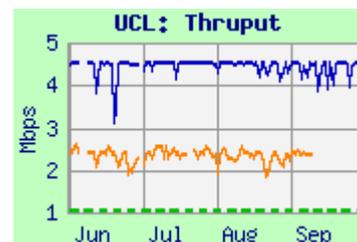
Domain: ucl.ac.uk

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	2.6	2.4	1.8	NISN / SFO / Sprintlink / JAnet
GSFC PTH	4.6	4.5	3.0	MAX / Internet2 / NY / Geant / JAnet

Requirements

Source Node	FY	mbps	Rating
LaRC DAAC	'02 – '06	1.03	Good



Comments: In September '06 the testing was modified due to a new firewall at UCL – now using ftp pulls by UCL instead of iperf from GSFC and LaRC. Results are much lower using this method – previous iperf thruput was 9.5 mbps from LaRC and 32 mbps from GSFC. The route from LaRC is via NISN, peering with Sprintlink on the west coast, unnecessarily increasing RTT and reducing thruput. Although stable, thruput from LaRC is slightly below 3 x the requirement, so the rating remains "Good".

23) UK, Oxford:

Team: HIRDLS

Web Page: <http://ensight.eos.nasa.gov/Missions/aura/OXFORD.shtml>

Rating: Continued **Excellent**

Domain: ox.ac.uk

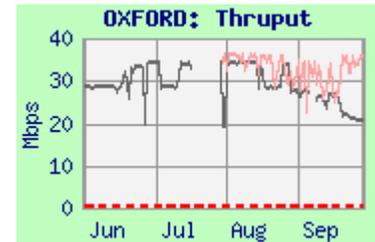
Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ENPL	28.9	28.4	21.4	MAX / Internet2 / Géant (DC) / JAnet

Requirements: (IST Only)

Source Node	FY	kbps	Rating
GSFC	'03 – '07	512	Excellent

Comments: Performance has been mostly stable since October '06. The rating remains "Excellent". User flow is now measured: it averaged 150 kbps for this period



23A) Rutherford Appleton Laboratory

Team: HIRDLS

Web Page: http://ensight.eos.nasa.gov/Missions/aura/UK_RAL.shtml

Rating: n/a
Domain: rl.ac.uk

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ENPL	30.8	27.3	9.5	MAX / Internet2 / Géant (DC) / JAnet

Comments: Thruput to RAL was mostly stable. There is no stated requirement to RAL, so there is no rating.

