

EOS Science Networks Performance Report

This is a summary of EOS QA SCF performance testing for the 1st quarter of 2008 -- comparing the performance against the requirements from BAH, including Terra, TRMM, QuikScat, Aqua, Aura, ICESat, and GEOS 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 with better performance from GSFC-ENPL.
- Otherwise, very stable performance.
 - ALL Nodes rated “Good” or “Excellent”!
 - GPA 3.71 (same as last quarter)
- 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: ↑:

LaTIS → UAH-GHRC: Good → **Excellent**

LaRC ASDC DAAC → JRC (Italy): Good → **Excellent**

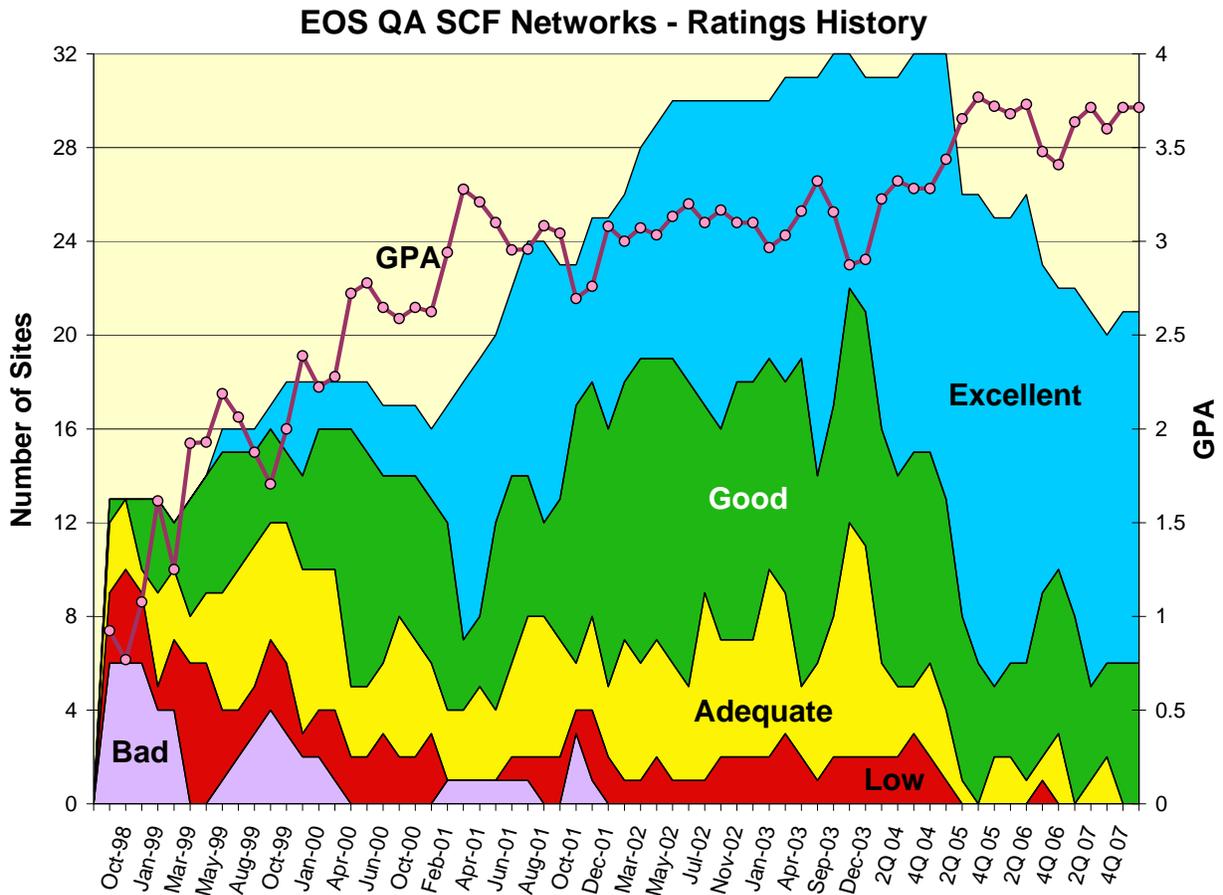
Downgrades: ↓:

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

LaTIS → Colo State: Excellent → **Good**

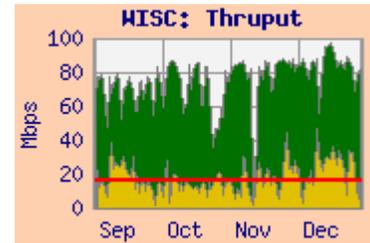
Ratings History:

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 U Washington (5/07) 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.



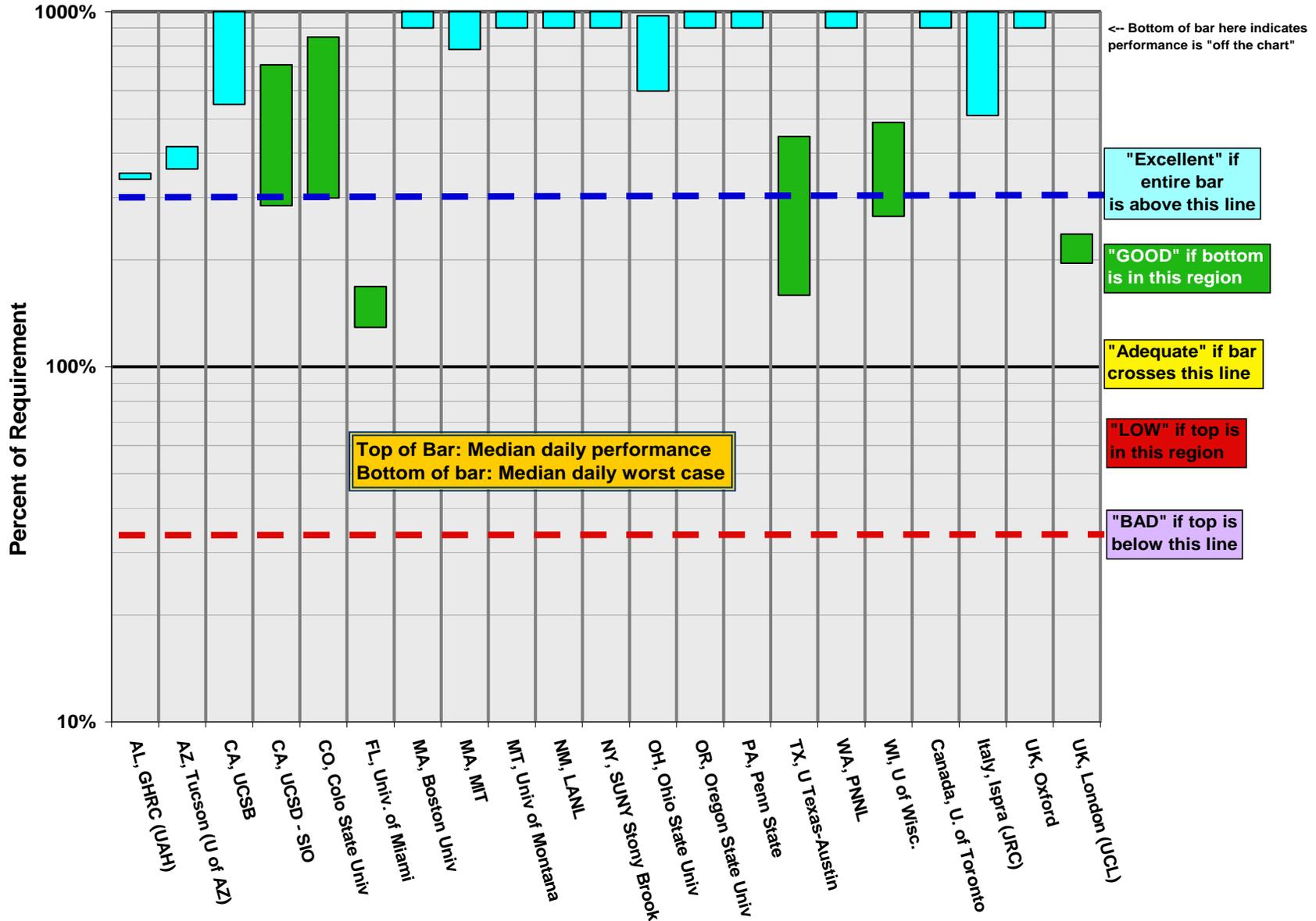
Note: User flow data is not available from LaRC, so sites with requirements from LaRC will not include integrated graphs.

EOS QA SCF Sites Summary: Network Requirements vs. Measured Performance

1st Quarter 2008			Testing						
Destination	Team (s)	Requirement	Source Node	Median mbps	Median Daily Worst	Average User Flow	Rating re Current Requirements		Route Tested
		Nov-07					1 Q 2008	4Q07	
AL, GHRC (UAH)	CERES, AMSR-E	6.9	LaTIS	24.7	23.7		Excellent	G	NISN / MAX / Internet2 / SOX
AZ, Tucson (U of AZ)	MODIS	2.6	EROS LPDAAC	11.7	10.1	0.30	Excellent	E	StarLight (Chicago) / Internet2
CA, UCSB	MODIS	3.1	GDAAC	46.6	17.1	0.21	Excellent	E	MAX / Internet2 / CENIC
CA, UCSD - SIO	ICESAT, CERES	7.1	GSFC-ICESAT	50.4	20.2		GOOD	E	NISN / MAX / Internet2 / CENIC
CO, Colo State Univ	CERES	2.1	LaTIS	18.2	6.4		GOOD	E	NISN / MAX / Internet2 / FRGP
FL, Univ. of Miami	MODIS, MISR	18.8	MTVS1	31.7	24.3	12.3	GOOD	G	MAX / Internet2 / SOX
MA, Boston Univ	MODIS, MISR	3.0	EROS LPDAAC	75.0	49.0	0.30	Excellent	E	StarLight (Chicago) / Internet2 / NOX
MA, MIT	ICESAT	7.0	GSFC-ICESAT	82.1	54.8		Excellent	E	NISN / MAX / Internet2 / NOX
MT, Univ of Montana	MODIS	0.8	EROS LPDAAC	26.6	18.3	0.02	Excellent	E	StarLight (Chicago) / Internet2 / PNW
NM, LANL	MISR	1.0	LaRC DAAC	59.8	47.1		Excellent	E	NISN / MAX / Internet2
NY, SUNY Stony Brook	CERES	0.6	LaTIS	46.7	32.5		Excellent	E	NISN / MAX / Internet2 / NYSERnet
OH, Ohio State Univ	ICESAT	6.3	GSFC-ICESAT	61.5	37.7		Excellent	E	NISN / MAX / Internet2 / OARnet
OR, Oregon State Univ	CERES, MODIS	7.6	LaTIS	126.4	90.0		Excellent	E	NISN / MAX / Internet2 / PNW
PA, Penn State	MISR	2.6	LaRC DAAC	154.6	53.5		Excellent	E	NISN / MAX / 3ROX
TX, U Texas-Austin	ICESAT	11.1	GSFC-ICESAT	49.3	17.6	0.27	GOOD	G	NISN / MAX / Internet2
WA, PNNL	MISR	1.4	LaRC PTH	90.8	90.7		Excellent	E	NISN / MAX / ESNet
WI, U of Wisc.	MODIS, CERES, AIRS	16.5	GDAAC	80.3	43.7	15.7	GOOD	G	MAX / Internet2 / MREN
Canada, U. of Toronto	MOPITT	0.6	LaRC DAAC	29.4	23.1		Excellent	E	NISN / StarLight (Chicago) / CA*net4
Italy, Ispra (JRC)	MISR	0.5	LaRC DAAC	8.7	2.6		Excellent	G	NISN / Chicago / CA*net / Géant (NY) / GARR
UK, Oxford	HIRDLS	0.5	GSFC-PTH	19.7	8.5	0.18	Excellent	E	Internet2 / Géant (DC) / JANet
UK, London (JCL)	MISR, MODIS	1.0	LaRC PTH	2.4	2.0		GOOD	G	NISN / Teleglobe (SFO) / JANet
	*Rating Criteria:						Rating	Current Nov-07	Last Report
	Excellent	Median Daily Worst >= 3 *Requirement					Excellent	15	15
	GOOD	Median Daily Worst >= Requirement					GOOD	6	6
	Adequate	Median Daily Worst < Requirement <= Median Daily Median					Adequate	0	0
	LOW	Median Daily Median < Requirement					LOW	0	0
	BAD	Median Daily Median < Requirement / 3					BAD	0	0
							Total	21	21
							GPA	3.71	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)

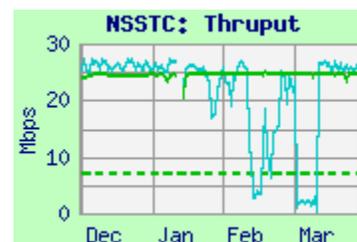
Teams: CERES, AMSR

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

Rating: ↑ Good → **Excellent**
Domain: nsstc.uah.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC LaTIS	24.8	24.7	23.7	NISN / MAX / I2 / SOX
GSFC-CNE	27.8	24.7	19.5	MAX / I2 / SOX



Requirements:

Source Node	FY	Mbps	Rating
LaRC LaTIS	'06 - '08	7.0	Excellent

Comments: Performance from LaTIS was very stable, above 3x the requirement, so the rating improves to "Excellent". Dips from GSFC were due to node problems at GSFC

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

2) AZ, Tucson (U of AZ):

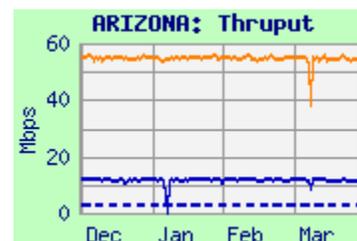
Team: MODIS

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	13.5	11.7	10.1	StarLight / I2
GSFC	57.3	54.7	49.5	MAX / I2

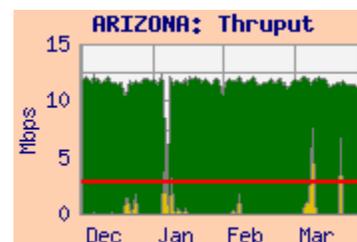


Requirements:

Source Node	FY	Mbps	Rating
EROS LPDAAC	'03 - '08	2.8	Excellent

Comments: The ratings are based on the MODIS flow from EROS – performance was very stable this quarter from both sources, rating "Excellent".

The average user flow from EROS was 300 kbps (lower than 650 kbps last quarter) – about 11% of the stated requirement.



3) CA, UCSB :

Teams: MODIS
Domain: ucsb.edu

Web page: <http://ensight.eos.nasa.gov/Missions/terra/UCSB.shtml>

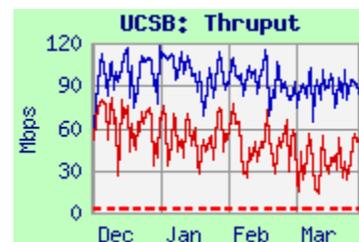
Ratings: GSFC: Continued **Excellent**
EROS: Continued **Excellent**

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-DAAC	79.6	46.6	17.1	MAX / I2 / CENIC
EROS-LPDAAC	113.8	93.6	64.0	StarLight / I2 / CENIC

Requirements:

Source Node	FY	mbps	Rating
GSFC-DAAC	'04 - '08	3.1	Excellent
EROS-LPDAAC	'04 - '08	2.2	Excellent



Comments: The requirements are split between EROS and GSFC. 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. The rating remains "Excellent" from both sites. The user flow from GSFC averages 0.2 mbps, but occasionally 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>

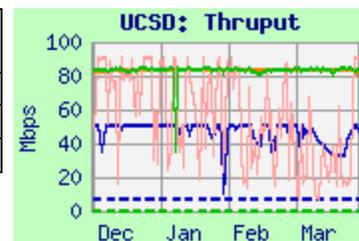
Ratings: ICESAT: ↓ Excellent → **Good**
LaTIS: Continued **Excellent**

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	50.7	50.4	20.2	NISN / MAX / I2 / CENIC
LaTIS	86.1	83.8	78.4	NISN / MAX / I2 / CENIC
GSFC-PTH	91.3	44.3	9.6	MAX / I2 / CENIC

Requirements:

Source Node	FY	mbps	Rating
GSFC-ICESAT	'05 - '08	7.0	Good
LaTIS	'02 - '08	0.26	Excellent



Comments: The daily minimum from GSFC-ICESAT dropped slightly below 3 x the requirement dropping the rating to "Good". Performance from GSFC-PTH is a bit better on average, but more noisy, due to the EBnet to Doors congestion.

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

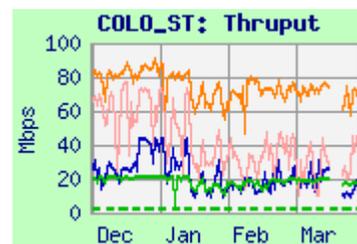
5) CO, Colo State Univ.:

Teams: CERES

Web page: http://ensight.eos.nasa.gov/Missions/terra/COLO_ST.shtmlRating: ↓ Excellent → **Good**
Domain: colostate.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaTIS	20.2	18.2	6.4	NISN / MAX / I2 / FRGP
GSFC-ICESAT	40.4	16.8	4.5	NISN / MAX / I2 / FRGP
GSFC-PTH	61.6	33.4	13.0	MAX / I2 / FRGP
GSFC-ENPL	82.6	72.1	46.7	MAX / I2 / FRGP



Requirements:

Source Node	FY	mbps	Rating
LaTIS	'04 - '08	2.15	Good

Comments: Performance from all sources remains noisy, but the daily worst from LaTIS dropped slightly below 3 x the requirement, so the rating drops to “Good”. Testing from GSFC-PTH and GSFC-ICESAT had higher peaks but was very noisy due to GSFC campus congestion. Testing from GSFC-ENPL-PTH is outside most campus firewalls, and shows that the true capacity of the network is higher than seen from either the CNE or EBnet nodes.

6) FL, Univ. of Miami:

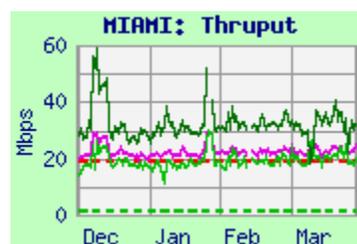
Teams: MODIS, MISR

Domain: rsmas.miami.edu

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

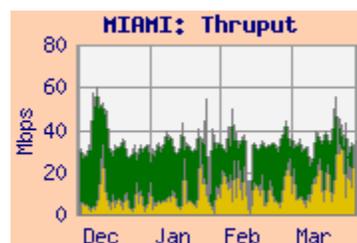
Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-MTVS1	43.6	31.7	24.3	MAX / I2 / SOX
GSFC-ENPL	27.5	22.1	18.2	MAX / I2 / SOX
LaRC DAAC	31.3	18.7	11.6	NISN / MAX / I2 / SOX



Requirements:

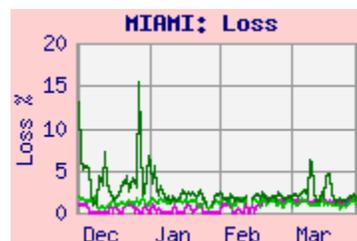
Source Node	FY	mbps	Rating
GSFC	'04 - '08	18.8	Good
LaRC DAAC	'04 - '08	1.1	Excellent



Comments: Testing from GSFC was switched to MODIS (MTVS1) in December; thruput was mostly stable. 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 increased to 12.3 mbps for this period, close to the requirement without contingency.

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) MA, Boston Univ:

Teams: MODIS, MISR

Domain: bu.edu

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

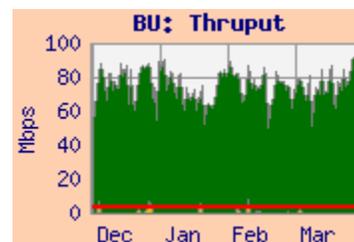
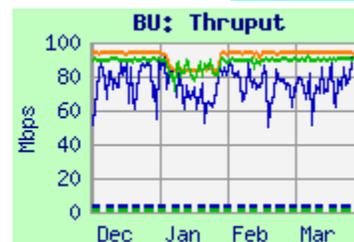
Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
EROS DAAC	91.8	75.0	49.0	StarLight / I2 / NOX
GSFC ENPL	93.7	93.7	79.1	MAX / I2 / NOX
LaRC DAAC	92.0	89.6	78.0	NISN / MAX / I2 / NOX

Requirements:

Source Node	FY	mbps	Rating
EROS DAAC	'04 - '08	3.0	Excellent
LaRC DAAC	'04 - '08	1.2	Excellent

Comments: Performance from all sources was stable for this period. The user flow from EROS averaged about 300 kbps for this period (10% of the requirement). The rating from both sources remains "Excellent".

**8) 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	89.5	82.1	54.8	NISN / MAX / I2 / NOX
GSFC-PTH	79.6	46.8	17.8	MAX / I2 / NOX

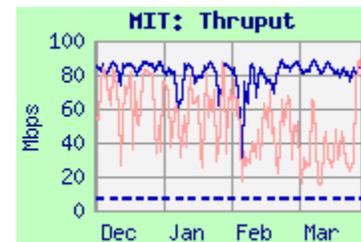
Requirements:

Source Node	FY	mbps	Rating
GSFC	'05 - '08	7.0	Excellent

Comments: Performance from GSFC ICESAT to MIT is stable (Best:worst ratio is only 1.6:1). The median daily worst is well 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

**9) MT, Univ of Montana:**

Teams: MODIS

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

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
EROS LPDAAC	27.8	26.6	18.3	StarLight / I2 / PNW
GSFC-PTH	46.8	38.3	15.2	MAX / I2 / PNW
NSIDC	55.4	53.0	17.3	CU / FRGP / I2 / PNW

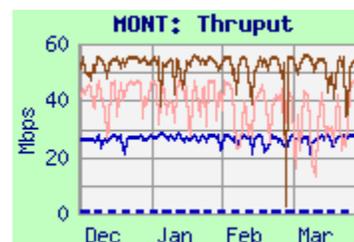
Requirement:

Source Node	FY	mbps	Rating
EROS LPDAAC	'04 - '08	0.82	Excellent

Comments: Performance was quite stable this period -- the diurnal cycle is much weaker now (Daily Max:Min ratio from EROS is now only 1.5:1 -- was about 9:1 until November '06). With the very low requirement, the rating remains "Excellent". The daily average user flow from EROS was only 17 kbps -- about 2% of the requirement.

Rating: Continued **Excellent**

Domain: ntsg.umt.edu



10) NM, LANL:

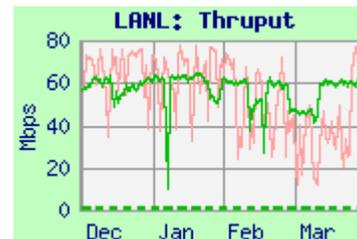
Teams: MISR

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	65.0	59.8	47.1	NISN / MAX / I2
GSFC-PTH	77.9	49.0	18.5	MAX / ESnet



Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'03-'08	1.03	Excellent

Comments: The route from LaRC switched in Sept '07 from NISN to ESnet to NISN to Internet2 -- performance from LaRC improved a bit at that time. With the low requirement, the rating remains "Excellent". From GSFC the route remained via MAX to ESnet; performance was noisy but mostly stable this period.

11) NY, SUNY-SB:

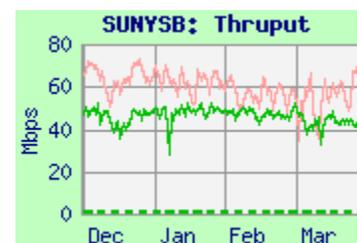
Teams: CERES, MODIS

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	59.6	46.7	32.5	NISN / MAX / I2 / NYSERnet
GSFC	75.0	58.3	38.2	MAX / I2 / NYSERnet



Requirements:

Source Node	FY	mbps	Rating
LaTIS	'02-'08	0.57	Excellent

Comments: Performance from LaTIS has been stable since March '07 (when NISN fixed their routing to NYSERnet). Due to the very low requirement, the rating remains "Excellent". Performance from GSFC was noisy but also stable this period.

12) OH, Ohio State Univ:

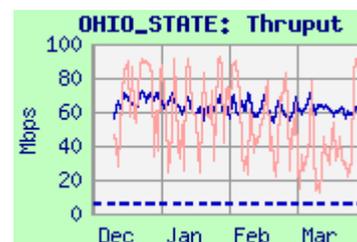
Teams: ICESAT

Web Page: http://ensight.eos.nasa.gov/Missions/icesat/OHIO_STATE.shtmlRating: **Excellent**

Domain: ohio-state.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	76.8	61.5	37.7	NISN / MAX / I2 / OARnet
GSFC-PTH	91.2	47.5	16.8	MAX / I2 / OARnet



Requirements:

Source Node	FY	mbps	Rating
GSFC-ICESAT	'05-'08	6.3	n/a

Comments: Performance from ICESAT was stable, rating "Excellent". Performance from GSFC-PTH was noisy due to congestion at GSFC.

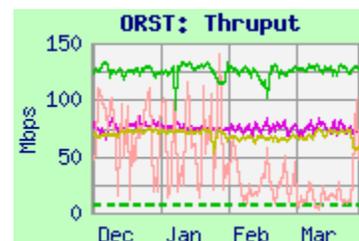
13) OR, Oregon State Univ:

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	133.4	126.4	90.0	NISN / MAX / I2 / PNW
JPL	74.2	68.6	52.3	CENIC / I2 / PNW
GSFC-PTH	108.7	24.5	6.4	MAX / I2 / PNW
GSFC-ENPL	105.9	74.7	46.4	MAX / I2 / PNW



Requirements:

Source Node	FY	mbps	Rating
LaTIS	'04 - '08	7.5	Excellent
GDAAC	'02 - '08	0.25	Excellent

Comments: Thruput from LaTIS was 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. A new test from GSFC-ENPL was added – it median and worst performance is higher since it is not subject to congestion at GSFC. The ratings from both LaTIS and GSFC remain "Excellent".

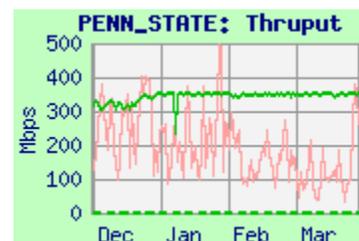
14) PA: Penn State Univ:

Team: MISR
 Web Page: http://ensight.eos.nasa.gov/Missions/terra/PENN_STATE.shtml

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

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	360.6	350.0	291.2	NISN / MAX / I2 / 3ROX
GSFC-PTH	350.1	154.6	53.5	MAX / I2 / 3ROX



Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'03-'08	2.6	Excellent

Comments: Performance from LaRC improved a bit in December – it is way above the requirement; the rating remains "Excellent". Thruput from GSFC is noisier due to the EBnet-Doors congestion.

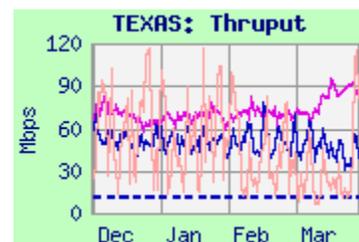
15) TX: Univ. of Texas - Austin:

Team: ICESAT
 Web Page: <http://ensight.eos.nasa.gov/Missions/icesat/TEXAS.shtml>

Rating: Continued **Good**
 Domain: utexas.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	86.6	49.3	17.6	NISN / MAX / I2 / TX
GSFC-ENPL	90.2	70.2	41.3	MAX / I2 / TX



Requirements:

Source Node	FY	mbps	Rating
GSFC-ICESAT	05-'08	11.1	Good

Comments: Performance from ICESAT was similar to last quarter; the daily worst thrupt remains below 3 x the requirement; so the rating remains "Good". Testing from GSFC-PTH is very noisy, but GSFC-ENPL is outside most of the congested GSFC campus infrastructure – so it is higher performing and less noisy. The average user flow this period was only 270 kbps, well below the requirement.

16) WA, PNNL:

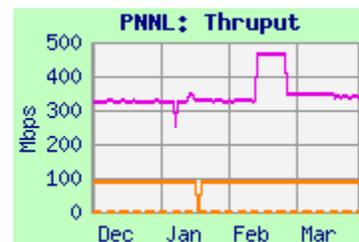
Team: MISR

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	90.8	90.8	90.7	NISN / MAX / ESnet
GSFC-ENPL	345.0	337.8	320.8	MAX / ESnet



Requirements:

Source Node	FY	mbps	Rating
LaRC	'04-'08	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!**

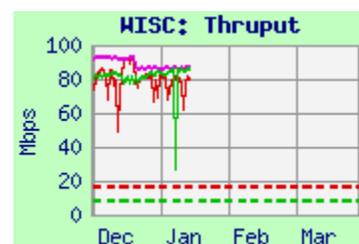
17) WI, Univ. of Wisconsin:

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

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

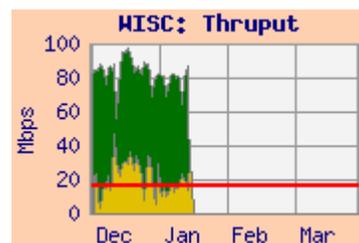
Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-DAAC	82.5	80.3	43.7	MAX / I2 / MREN
LaTIS	88.2	84.9	78.8	NISN / MAX / I2 / MREN
GSFC-ENPL	89.7	86.6	81.9	MAX / I2 / MREN



Requirements:

Source Node	FY	mbps	Rating
GSFC	'04 - '08	16.5	Good
LaRC Combined	'05 - '08	7.9	Excellent



Comments: The Wisconsin test node went down in January (restored in April), so the measurements above are just for early January. Performance from GDAAC was similar to last quarter – somewhat noisy due to congestion at GSFC. The daily worst remained below 3 x the requirement, so the rating remains “Good”. Thruput from LaTIS was very stable; the rating from LaTIS remains “Excellent”. Testing from ENPL was also very stable. The integrated graph shows that the average user flow from GSFC was about 15.7 mbps – **very close to the requirement!**

18) Canada, Univ of Toronto:Rating: Continued **Excellent**

Team: MOPITT

Domain: utoronto.ca

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

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	30.3	29.4	23.1	NISN / StarLight / CA*net4
GSFC-PTH	31.1	30.1	18.8	MAX / I2 / NY / CA*net4

Requirements:

Source Node	FY	kbps	Rating
LaRC DAAC	'02 - '08	100	Excellent
GSFC EOC	'02 - '08	512	Excellent



Comments: Performance from both sources has been mostly stable since December '06, with congestion at GSFC causing some noisiness. The ratings from both sources remain "Excellent". The anomalies at the end of March cleared up in April. User flow from GSFC averaged about 80 kbps this quarter.

19) Italy, EC - JRC:Rating: ↑ Good → **Excellent**

Team: MISR

Domain: jrc.it

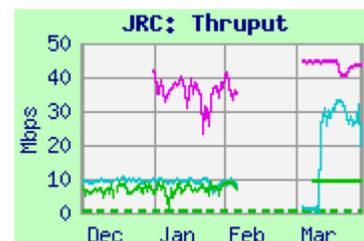
Web Page: <http://ensight.eos.nasa.gov/Missions/terra/JRC.shtml>

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	9.2	8.7	2.6	NISN / StarLight / Canarie / NY / Géant / Garr
GSFC-NISN	13.9	9.5	6.1	NISN / StarLight / Canarie / NY / Géant / Garr
GSFC-ENPL	44.5	38.9	12.6	MAX / I2 / Géant / Garr

Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'02 - '08	0.52	Excellent



Comments: Routing to JRC was switched to Géant in July '07. But since NISN does not peer with Géant (peering is available at MAX), the route is via NISN to Chicago, then via Canarie, peering with Géant in NY. The JRC test node was down for most of February, and was replaced by a new node in March.

Thruput from LaRC was quite stable this quarter; the median daily worst is now above 3 x the requirement, so the rating improves to "Excellent". This testing was retuned in June, with further improvement noted.

The route from GSFC campus via NISN is similar to that from LaRC. Performance was similar until it was returned and improved with the JRC node replacement.

A new test was added from GSFC-ENPL, which connects directly to MAX and Géant. It's performance is much higher.

20) UK, London: (UCL)

Teams: MODIS, MISR

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

Domain: ucl.ac.uk

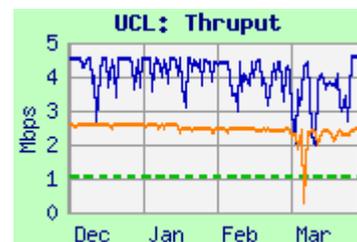
Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	2.5	2.4	2.0	NISN / PAIX (SFO) / Teleglobe / JAnet
GSFC PTH	4.5	4.1	2.4	MAX / I2 / Géant (DC) / JAnet

Requirements

Source Node	FY	mbps	Rating
LaRC DAAC	'02 – '08	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 Teleglobe 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”.

**21) UK, Oxford:**

Team: HIRDLS

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

Domain: ox.ac.uk

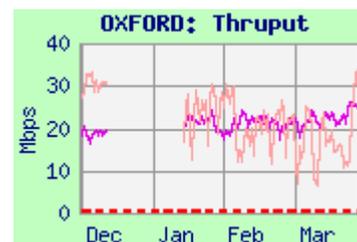
Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ENPL	25.7	21.5	13.5	MAX / I2 / Géant (DC) / JAnet

Requirements: (IST Only)

Source Node	FY	kbps	Rating
GSFC	'03 – '08	512	Excellent

Comments: Performance has been mostly stable since October '06. The rating remains “Excellent”. User flow is now measured; it averaged about 150 kbps for this period. A second test was added from GSFC-PTH –its performance is noisier but otherwise similar to GSFC-ENPL.

**21A) 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	30.6	21.5	10.9	MAX / I2 / Géant (DC) / JAnet

Comments: Thruput to RAL was somewhat variable. There is no stated requirement to RAL, so there is no rating. A second test was added from GSFC-PTH –its performance is also noisier but otherwise similar to GSFC-ENPL.

