

EOS Science Networks Performance Report

This is a summary of EOS QA SCF performance testing for the 1st half of 2006 -- comparing the performance against the requirements from BAH, including Terra, TRMM, and QuikScat, Aqua, Aura, SAGE III, 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:

- Very stable performance.
- Since the SAGE II Mission was completed in March 2006, this will be the last report containing SAGE III nodes
- Testing was restored to PNNL – rating “**Excellent**”
- Testing has been discontinued to the University of Maryland, as of the end of May, due to campus security concerns.
- The Feb '06 requirements are used as the basis for the ratings
 - (Previously used April '05 requirements).

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:

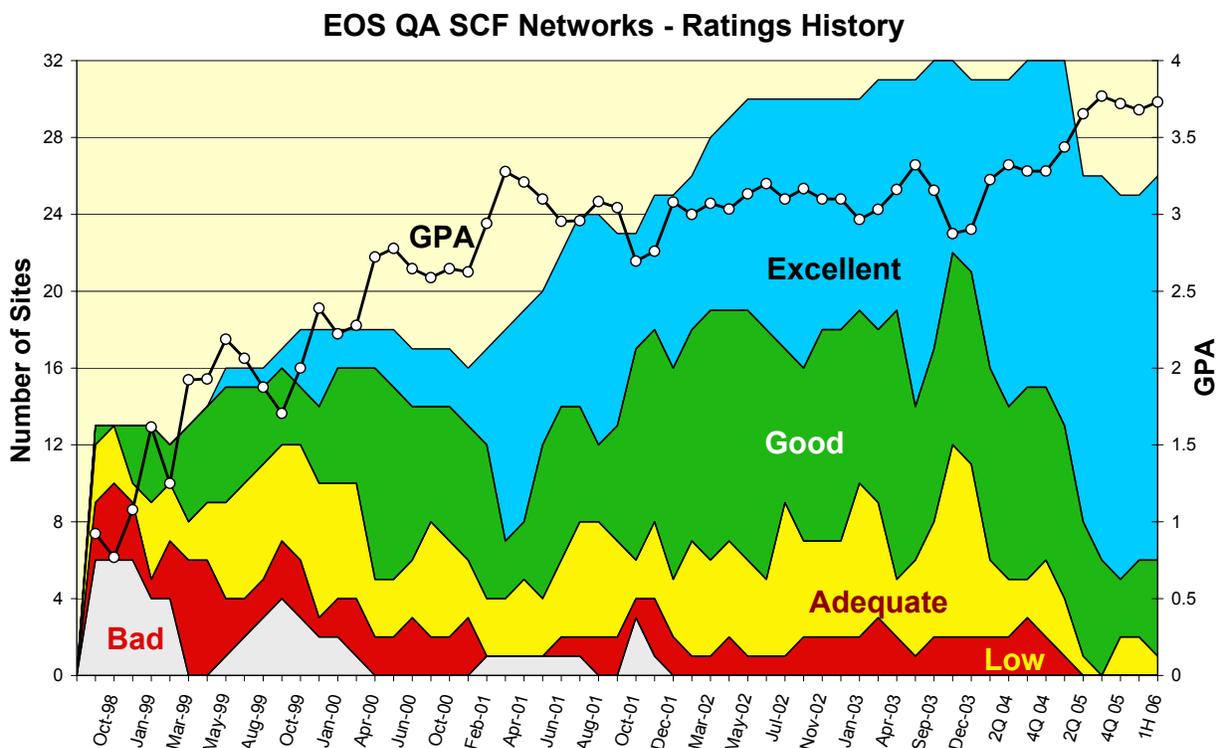
Upgrades: ↑
 UAH-NSSTC: Adequate → **Good**
 Washington: Adequate → **Good**

Downgrades: ↓
 Miami: Good → **Adequate**
 Texas: Excellent → **Good**

Testing restored:
 PNNL: **Excellent**

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 moving the data for SIPS sites to the "EOS Production sites" performance report (NCAR, KNMI, RSS. GSFC → JPL, NSSTC → NSIDC, and GSFC-SAFS → SAGE III MOC).

EOS QA SCF Sites: Network Requirements vs. Measured Performance

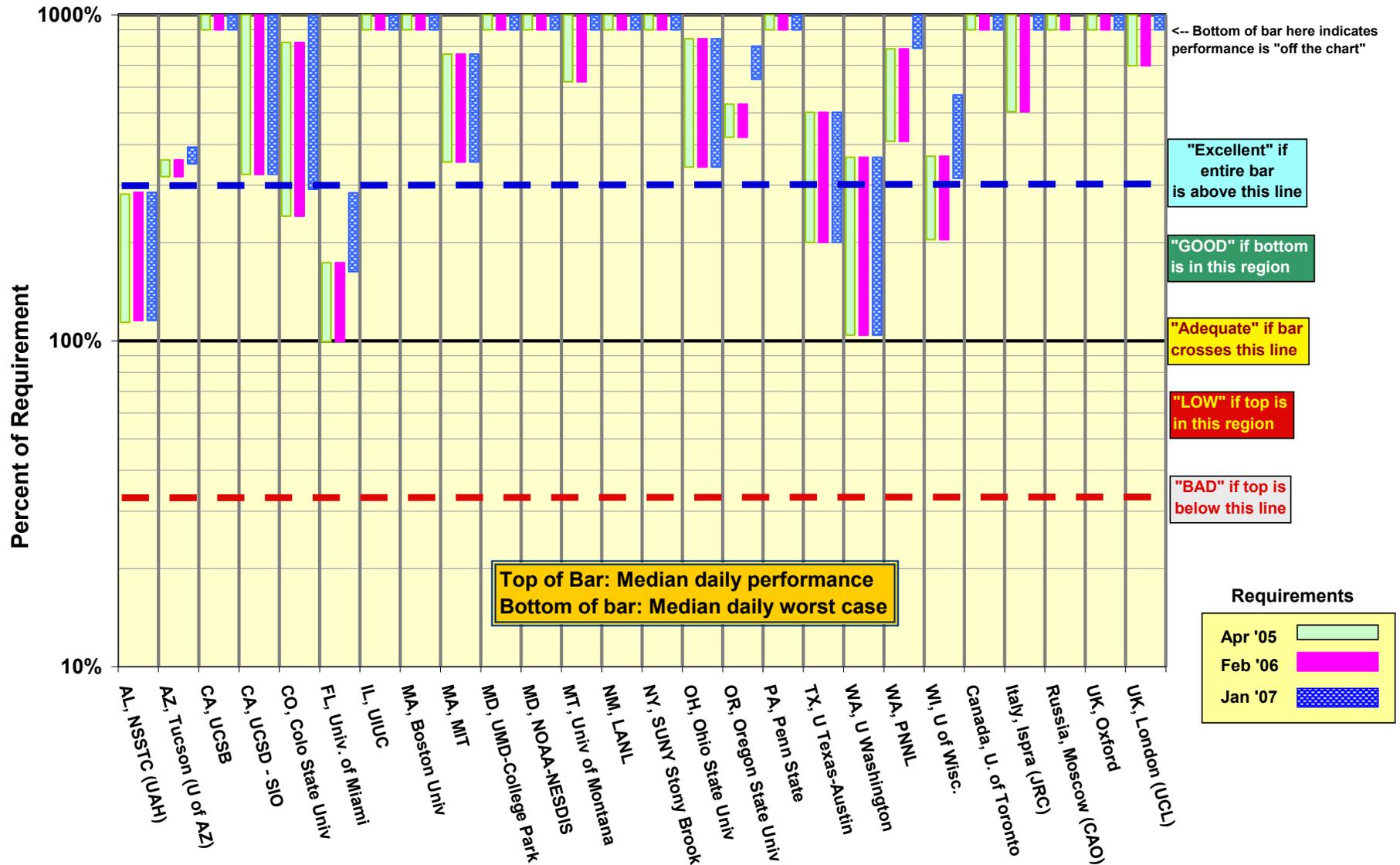
1st Half 2006		Requirements (mbps)			Testing						
Destination	Team (s)	Previous:	Current:	Future:	Source Node	Median mbps	Median Daily Worst	Rating re Current Requirements		Rating re	Route Tested
		Apr-05	Feb-06	Jan-07				1H 2006	4Q05	Jan-07	
AL, NSSTC (UAH)	CERES, AMSR-E	7.1	7.0	7.0	LaTIS	20.1	8.1	GOOD	A	GOOD	NISN + FDDI
AZ, Tucson (U of AZ)	MODIS	2.8	2.8	2.6	EROS LPDAAC	10.1	9.0	Excellent	E	Excellent	Abilene via vBNS+ / DC
CA, UCSB	MODIS	3.1	3.1	2.2	GDAAC	108.7	67.7	Excellent	E	Excellent	Abilene via MAX
CA, UCSD - SIO	ICESAT, CERES	7.1	7.1	7.1	GSFC-ICESAT	82.1	23.0	Excellent	E	Excellent	Abilene via NISN / MAX
CO, Colo State Univ	CERES	2.1	2.1	1.8	LaTIS	17.7	5.2	GOOD	G	GOOD	NISN -> Abilene via Chicago
FL, Univ. of Miami	MODIS, MISR	18.8	18.8	11.5	GDAAC	32.7	18.7	Adequate	G	GOOD	Abilene via MAX
IL, UIUC	MISR	1.1	1.1	0.6	LaRC DAAC	24.5	16.7	Excellent	E	Excellent	Abilene via NISN / MAX
MA, Boston Univ	MODIS, MISR	3.0	3.0	2.0	EROS LPDAAC	73.6	43.5	Excellent	E	Excellent	Abilene via vBNS+ / DC
MA, MIT	ICESAT	7.0	7.0	7.0	GSFC-ICESAT	53.1	24.8	Excellent	E	Excellent	Abilene via NISN / MAX
MD, UMD-College Park	MODIS	2.0	2.0	2.0	GSFC-MAX	456.8	403.3	Excellent	E	Excellent	Direct Fiber
MD, NOAA-NESDIS	CERES, AMSR-E	1.5	1.5	1.5	NSIDC	26.2	20.7	Excellent	E	Excellent	FRGP / Abilene / MAX
MT, Univ of Montana	MODIS	0.8	0.8	0.5	EROS LPDAAC	14.4	5.1	Excellent	E	Excellent	vBNS+ / DC / Abilene
NM, LANL	MISR	1.0	1.0	0.5	LaRC DAAC	16.5	10.7	Excellent	E	Excellent	NISN -> ESNet via CA
NY, SUNY Stony Brook	CERES	0.6	0.6	0.5	LaTIS	42.1	32.5	Excellent	E	Excellent	NISN / MAX / Abilene / NYSERnet
OH, Ohio State Univ	ICESAT	6.3	6.3	6.3	GSFC-ICESAT	53.3	21.5	Excellent	E	Excellent	Abilene via NISN / MAX
OR, Oregon State Univ	CERES, MODIS	7.6	7.6	5.0	LaTIS	40.3	31.9	Excellent	E	Excellent	Abilene via NISN / MAX
PA, Penn State	MISR	2.6	2.6	1.9	LaRC DAAC	39.4	29.0	Excellent	E	Excellent	Abilene via NISN / MAX
TX, U Texas-Austin	ICESAT	11.1	11.1	11.1	GSFC-ICESAT	55.6	22.2	GOOD	E	GOOD	Abilene via NISN / MAX
WA, U Washington	ICESAT	11.7	11.7	11.7	GSFC-ICESAT	43.0	12.2	GOOD	A	GOOD	Abilene via NISN / MAX
WA, PNNL	MISR	1.4	1.4	0.7	LaRC PTH	11.3	5.9	Excellent	n/a	Excellent	NISN -> ESNet via CA
WI, U of Wisc.	MODIS, CERES, AIRS	16.5	16.5	10.7	GDAAC	60.7	33.7	GOOD	G	Excellent	Abilene via MAX
Canada, U. of Toronto	MOPIIT	0.6	0.6	0.1	LaRC DAAC	23.8	15.2	Excellent	E	Excellent	NISN-CA*net4
Italy, Ispra (JRC)	MISR	0.5	0.5	0.2	LaRC DAAC	8.3	2.6	Excellent	E	Excellent	NISN-UUNET-Milan
Russia, Moscow (CAO)	SAGE III	0.03	0.03		CAO->LaRC-N	0.52	0.37	Excellent	E	n/a	NISN -> Moscow
UK, Oxford	HIRDLS	0.5	0.5	0.5	GSFC-MAX	11.0	5.3	Excellent	E	Excellent	Abilene->Geant (NY) -> JAnet
UK, London (UCL)	MISR, MODIS	1.0	1.0	0.5	LaRC DAAC	10.9	7.2	Excellent	E	Excellent	NISN - MAX - Abilene->Geant (NY) -> JAnet
*Rating Criteria:								Rating	Current	Last	Future:
									Feb-06	Report	Jan-07
Excellent	Median of Daily worst hours >= 3 *Requirement							Excellent	20	20	20
GOOD	Median of Daily worst hours >= Requirement							GOOD	5	3	5
Adequate	Median of Daily worst hours < Requirement <= Median of Daily Medians							Adequate	1	2	0
LOW	Requirement > Median of Daily Medians							LOW	0	0	0
BAD	Requirement > 3 * Median of Daily Medians							BAD	0	0	0
								Total	26	25	25
								GPA	3.73	3.72	3.80

Note: All requirements and thruput values are now in mbps (previously kbps)

EOS QA SCF Sites

Daily Median and Worst Performance as a percent of Requirements

(This looks GREAT!)



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, NSSTC (UAH) (aka GHCC)

Teams: CERES, AMSR

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

Rating: ↑ Adequate → **Good**

Domain: nsstc.uah.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC LaTIS	22.1	20.1	8.1	NISN SIP
GSFC	25.5	24.3	20.8	NISN SIP

Requirements:

Source Node	Date	Mbps	Rating
LaRC LaTIS	Apr '05	7.1	Good
LaRC LaTIS	Feb '06	7.0	Good

Comments: Performance was poor for most of February (median 10 mbps from LaRC, 13 from GSFC), but recovered in March, and improved again at the end of March, due to apparent NISN PVC changes. The median daily worst from LaTIS is now above the requirement, so the rating improves to "Good".

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	13.5	10.1	9.0	Abilene via vBNS+ / DC
GSFC	58.5	56.5	52.3	Abilene via MAX

Requirements:

Source Node	FY	Mbps	Rating
EROS LPDAAC	'03 - '06	2.8	Excellent

Comments: The ratings are based on the MODIS flow from EROS -- performance dropped from a median of 25 mbps at the beginning of April, but this is still sufficient to keep the rating "Excellent". Testing from GSFC was stable.

3) CA, UCSB :

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

Teams: MODIS

Domain: ucsb.edu

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

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-DAAC	114.1	108.7	67.7	Abilene via NISN / MAX
EROS-LPDAAC	93.8	86.8	60.9	Abilene via vBNS+ / DC

Requirements:

Source Node	FY	mbps	Rating
GSFC-DAAC	'04 - '06	3.1	Excellent
EROS-LPDAAC	'04 - '06	2.2	Excellent

Comments: The requirements are split between EROS and GSFC. Performance from both GSFC and EROS has been stable since April '05 . The rating remains "Excellent" from both sites.

4) CA, UCSD (SIO) :

Ratings: ICESAT: Continued **Excellent**
 LaTIS: Continued **Excellent**

Teams: CERES, ICESAT

Domain: ucsd.edu

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

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	96.8	82.1	23.0	Abilene via NISN / MAX
LaTIS	43.8	39.6	32.0	Abilene via NISN / MAX
GSFC-MAX	91.3	90.9	70.9	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC	'05 – '06	7.0	Excellent
LaTIS	'02 - '06	0.26	Excellent

Comments: The test host at UCSD had Ethernet duplex mismatch problems for most of January and early February, with performance under 1 mbps. After that was fixed, performance was at the levels above.

The GSFC rating is based on testing from the ICESAT SCF at GSFC. Retuning the tests in February improved thruput from a median of 50 mbps previously. The daily worst from ICESAT is considerably worse than from GSFC-MAX, indicating congestion at GSFC. But it remains slightly above 3 x the requirement, so the rating remains "Excellent".

Performance from LaTIS has been otherwise stable since April '05. The CERES requirements are much lower than ICESAT, so the LaTIS rating continues as "Excellent".

5) CO, Colo State Univ.:Rating: Continued **Good**

Teams: CERES

Domain: colostate.edu

Web page: http://ensight.eos.nasa.gov/Missions/terra/COLO_ST.shtml

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaTIS	22.8	17.7	5.2	Abilene via NISN / Chicago
GSFC	35.3	27.8	9.0	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
LaTIS	'04 - '06	2.15	Good

Comments: Performance improved from both LaTIS and GSFC in November '05 – had been averaging 15 mbps from GSFC, and 12 from LaTIS since the Colo State test host was upgraded in August '05. Performance from both sources is noisy, but the daily worst remained between the '05 requirement and 3 x the requirement, so the rating stayed “Good”.

6) FL, Univ. of Miami:Rating: GSFC:Continued **Adequate**

Teams: MODIS, MISR

LaRC: Continued **Excellent**

Domain: rsmas.miami.edu

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

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-DAAC	39.5	32.7	18.7	Abilene via MAX
GSFC-MAX	41.1	34.3	21.3	Abilene via MAX
LaRC DAAC	24.6	19.9	12.0	Abilene via NISN / MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC	'04 - '06	18.8	Adequate
LaRC DAAC	'04 - '06	1.1	Excellent

Comments: Thruput from all sites dropped dramatically in Aug '05 – Medians from GSFC were 133 mbps from GSFC and 38 mbps from LaRC. In this period the daily worst value from GDAAC has dropped [very slightly] below the requirement, so the rating remains “Adequate” from GSFC. It remains “Excellent” from LaRC, due to the much lower requirement.

Along with the thruput decrease, 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>Rating: Continued **Excellent**

Domain: uiuc.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	26.9	24.5	16.7	Abilene via NISN / Chicago
GSFC	155.6	46.3	37.9	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'04 - '06	1.13	Excellent

Comments: Performance from all sources dropped (medians were 37 mbps from LaRC, and 218 mbps from GSFC) after the test node was restored in February, but the rating remains "Excellent".

8) MA, Boston Univ:

Domain: bu.edu

Teams: MODIS, MISR

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	92.5	73.6	43.5	Abilene via vBNS+ / DC
GSFC	91.8	91.6	87.3	Abilene via MAX
LaRC DAAC	45.7	40.9	28.1	Abilene via NISN / MAX

Requirements:

Source Node	FY	mbps	Rating
EROS DAAC	'04 - '06	3.0	Excellent
LaRC DAAC	'04 - '06	1.2	Excellent

Comments: Performance from all sites was very stable this period. The rating from both sites remains "Excellent".

9) MA, MIT:

Teams: ICESAT

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

Domain: mit.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	68.9	53.1	24.8	Abilene via NISN / MAX
GSFC-MAX	91.2	86.6	66.6	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC	'04, '05 – '06	6.7, 7.0	Excellent

Comments: Performance from GSFC ICESAT to MIT is still subject to congestion inside GSFC, about as much as previously. The daily worst remains above 3 x the requirement, the rating remains "Excellent". From GSFC-MAX there is less congestion apparent.

10) MD, NOAA-NESDIS (Camp Springs)Rating: Continued **Excellent**

Teams: CERES, AMSR-E

Domain: nesdis.noaa.gov

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

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
NSIDC	26.3	26.2	20.7	FRGP / Abilene / MAX
LaTIS	31.9	31.2	15.6	NISN / MAX
GSFC-MODIS	32.9	32.4	30.7	Peering at MAX

Requirements (QA only):

Source Node	FY	mbps	Rating
NSIDC	'02 – '06	1.52	Excellent
LaTIS	'02 – '06	0.21	Excellent

Comments: Performance from LaTIS improved in April '05 with the NISN – Abilene routing via MAX. The performance from other sources has been stable since it improved around mid August '04, due to upgrades at NOAA. The rating remains "Excellent" from both NSIDC and LaTIS.

11) MD, Univ. of Maryland:Rating: Continued **Excellent**

Teams: MODIS

Domain: umd.edu

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

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-MAX	459.4	456.8	403.3	Direct Fiber OC-12 / MAX / SCF
EROS LPDAAC	114.1	98.4	68.5	VBNS+ / Abilene / MAX / SCF
NSIDC	45.5	45.0	31.4	Abilene / MAX / SCF

Requirements (QA only):

Source Node	FY	mbps	Rating
GSFC DAAC	'02 – '06	2.0	Excellent

Comments: The UMD test node was replaced in mid May '05 – performance improved to the above levels at that time, and has been very stable. These performance levels continue to rate as "Excellent".

Note: At the end of May 2006, this testing has been discontinued, due to security issues on the UMD campus.

12) MT, Univ of Montana:Rating: Continued **Excellent**

Teams: MODIS

Domain: ntsg.umt.edu

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	18.7	14.4	5.1	VBNS+ / DC / Abilene
GSFC	38.8	23.9	8.7	MAX / Abilene
NSIDC	39.5	26.9	9.3	CU / FRG / Abilene

Requirements:

Source Node	FY	mbps	Rating
EROS LPDAAC	'04 - '06	0.82	Excellent

Comments: Stable performance, with a strong diurnal cycle from all sources – the daily best and median values didn't change much, but daily worst values dropped about about 25% this period. With the low requirements, however, the rating continues as "Excellent".

13) NM, LANL:Rating: Continued **Excellent**

Teams: MISR

Domain: lanl.gov

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

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	16.6	16.5	10.7	NISN SIP / MAE-W (Ames) / ESnet
GSFC	51.9	47.6	21.3	MAX / ESnet

Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'03-'06	1.03	Excellent

Comments: Performance was stable from both sources, except for reduced thruput (about half of the above) for most of April. The rating remains "Excellent"

14) NY, SUNY-SB:Rating: Continued **Excellent**

Teams: CERES, MODIS

Domain: sunysb.edu

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

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaTIS	46.3	42.1	32.5	NISN / MAX / Abilene / NYSERnet
GSFC	77.7	52.9	32.3	MAX / Abilene / NYSERnet

Requirements:

Source Node	FY	mbps	Rating
LaTIS	'02-'06	0.57	Excellent

Comments: Performance from both sites increased to the above values in April '05, when the routing from LaRC was changed to go via MAX, the SUNY test host was replaced, and test parameters adjusted. With the low requirement, the rating remains "Excellent".

15) OH, Ohio State Univ:Rating: Continued **Excellent**

Teams: ICESAT

Domain: ohio-state.edu

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

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	70.5	53.3	21.5	Abilene via NISN / MAX
GSFC-MAX	53.9	53.0	42.9	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC	'04, '05-'06	6.0, 6.3	Excellent

Comments: The congestion at ICESAT is still somewhat apparent. The daily worst from ICESAT remains more than 3 x the requirement, so the rating remains "Excellent". Without this congestion, the daily worst from GSFC-MAX is twice as high – although the daily median and maximum are similar..

16) OR, Oregon State Univ:Ratings: LaTIS: Continued **Excellent**GSFC: Continued **Excellent**

Domain: oce.orst.edu

Teams: CERES, MODIS

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

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaTIS	44.2	40.3	31.9	Abilene via NISN / Chicago
JPL	80.3	65.8	19.9	Abilene via CalRen
GSFC	55.5	46.8	14.4	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
LaTIS	'04 - '06	7.5	Excellent
GDAAC	'02 - '06	0.25	Excellent

Comments: Performance from all sources experienced continued noisiness and was similar to the previous period; the rating remains "Excellent".

17) PA: Penn State Univ:Rating: Continued **Excellent**

Teams: MISR

Domain: psu.edu

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

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	44.9	39.4	29.0	Abilene via NISN / MAX
GSFC	184.3	177.7	155.7	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'03-'06	2.6	Excellent

Comments: Performance from LDAAC has been stable since April '05 when it improved with the NISN – Abilene routing via MAX; the rating remains “Excellent”. Performance from GSFC improved to the above levels in September '04.

18) TX: Univ. of Texas - Austin:Rating: ↓ Excellent → **Good**

Teams: ICESAT

Domain: utexas.edu

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

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	70.8	55.6	22.2	Abilene via NISN / MAX
GSFC-MAX	92.3	89.0	80.6	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC	'03, 05-'06	10.7, 11.1	Good

Comments: Congestion near ICESAT pushed the daily worst thruput below 3 x the requirement, dropping the rating to “Good”. The rating would be “Excellent from GSFC-MAX.”

19) WA, Univ Washington:

Teams: ICESAT

Web Page: <http://ensight.eos.nasa.gov/Missions/icesat/UW.shtml>Rating: ↑ Adequate → **Good**

Domain: washington.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	65.3	43.0	12.2	Abilene via NISN/MAX
GSFC-MAX	69.2	54.7	11.9	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC	'04, '05-'06	11.3, 11.7	Good

Comments: Like other ICESAT sites, congestion from the ICESAT test node is still present, but there is also strong diurnal congestion close to Washington. The daily worst from ICESAT is now a bit above the requirement; improving the rating to "Good".

20) WA, PNNL:

Teams: MISR

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

Domain: pnl.gov

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC-PTH	12.0	11.3	5.9	NISN / MAX / ESnet
GSFC-MAX	399.0	376.1	329.0	MAX / ESnet

Requirements:

Source Node	FY	mbps	Rating
LaRC	'04-'06	1.4	Excellent

Comments: Testing to PNNL resumed in May after being down since Nov. '04. Performance from LaRC was very stable; rating "Excellent". Performance from GSFC-MAX is **OUTSTANDING!**

21) WI, Univ. of Wisconsin:

Teams: MODIS, CERES, AIRS

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

Domain: ssec.wisc.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
G-DAAC	76.6	60.7	33.7	MAX / Abilene / Chi / MREN
LaTIS	27.5	26.1	21.6	NISN / Chicago / MREN
GSFC-MAX	70.1	50.5	28.6	MAX / Abilene / Chi / MREN

Requirements:

Source Node	FY	mbps	Rating
GSFC	'04 - '06	16.5	Good
LaRC Combined	'04, '05-'06	7.5, 7.9	Good

Comments: Performance from LaTIS was a bit noisy but long term stable; the rating from LaRC remains "Good". Performance from GDAAC was stable; the rating also remains "Good".

22) 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 → Test Node	26.8	23.8	15.2	NISN / Chicago / CA*net4
GSFC → Test Node	53.9	37.4	11.8	MAX / Abilene / Chicago / CA*net4

Requirements:

Source Node	FY	kbps	Rating
LaRC DAAC	'02 - '06	100	Excellent
GSFC EOC	'02 - '06	512	Excellent

Comments: Flows to the Toronto IST node were switched from the dedicated NISN T1 to CA*net4 in late October '04. Performance from both LDAAC (source of QA data), and from GSFC (source for IST) was stable. The ratings, based on testing to the Toronto test node, remain "Excellent".

23) Russia, CAO (Moscow):Rating: Continued **Excellent**

Teams: SAGE III

Domain: mipt.ru

Web Pages: <http://ensight.eos.nasa.gov/Missions/sage/CAO.shtml>
http://ensight.eos.nasa.gov/Missions/sage/LARC_SAGE.shtml

Test Results:

Source → Dest	Medians of daily tests (kbps)			Route
	Best	Median	Worst	
CAO → LaRC	533	519	370	MIPT / TCnet / NISN SIP
CAO → LaRC	843	787	314	Commodity Internet
LaRC → CAO	562	378	318	NISN SIP / TCnet / MIPT
LaRC → CAO	2072	1961	686	Commodity Internet

Requirements:

Source → Dest	FY	kbps	Rating
CAO → LaRC	'02 – '06	26	Excellent
LaRC → CAO	'02 – '06	26	Excellent

Comments: Performance testing has been running since November '02, with dual routes. Performance on the NISN dedicated circuit to Moscow, then TCnet (NASA Russian ISP) tunnel to CAO ISP (MIPT) improved in December (was about 120 kbps from CAO to LaRC and 145 from LaRC to CAO previously), rating "Excellent".

The dual route configuration also allows testing via the commodity internet route. Performance via the internet route is much better, but is also more variable, and also would rate "Excellent".

Note: The SAGE III mission was completed in March '06, and the NISN dedicated service was terminated at that time. All testing has been stopped, and will not be included in further reports

24) Italy, EC - JRC:

Teams: MISR

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

Domain: jrc.it

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	10.4	8.3	2.6	NISN / UUnet / Milan
GSFC-NISN	11.2	8.4	3.1	NISN / UUnet / Milan

Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'02 – '06	0.52	Excellent

Comments: Performance improved from both sources in May '05, due to an apparent UUNet upgrade, and has been stable since then. The rating remains “Excellent”.

25) UK, London: (UCL SCF)

Teams: MODIS, MISR

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

Domain: ucl.ac.uk

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	12.8	10.9	7.2	NISN / MAX / Abilene / NY / GEANT / Janet ??
GSFC MAX	41.1	41.0	38.0	MAX / Abilene / NY / GEANT / JAnet

Requirements

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

Comments: The UCL Test node was down from late September '05 to early January '06. After it was restored, performance was significantly lower (medians had been 22 mbps from LaRC, and 59 mbps from GSFC). A new firewall installation at UCL could be the explanation.

Thruput from LaRC remains well above 3 x the requirement, however, so the rating remains “Excellent”.

Performance from GSFC is much higher than from LaRC.

26) UK, Oxford:Rating: Continued **Excellent**

Teams: HIRDLS

Domain: ox.ac.uk

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

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC	14.4	11.0	5.3	MAX / Abilene / NY / GEANT / JAnet

Requirements: (IST Only)

Source Node	FY	kbps	Rating
GSFC	'03 – '06	512	Excellent

Comments: The Oxford test node began having difficulty in August '05, and was down from mid October to early February '06. When it recovered the testing was re-tuned, and the thruput improved to the values above (previously was 4 mbps steady -- since May '03). This thruput produces a rating of "Excellent" compared to the IST requirement.

However, in early May, thruput dropped dramatically – current thruput is very noisy, from 50 -600 kbps, with high packet loss rate. This problem is believed to again be due to problems with the Oxford node – possibly Ethernet duplex mismatch.

Test Results to other EOS HIRDLS UK Sites (Requirements TBD):Web Page: http://ensight.eos.nasa.gov/Missions/aura/UK_RAL.shtml

Source → Dest	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC → RAL	32.7	22.9	8.1	MAX / Abilene / NY / GEANT / JAnet

Comments: Thruput to RAL remains noisy, but quite good, and about the same as the last report. .