Day in the Life of ECS

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17 Jan 96

Day in the Life of ECS

Activities

Operations periods

Modelling data

Day in the Life of ECS

Activities

17 Jan 96

Day in the Life of ECS

Date:	**Monday, 19-Jul-99 (Epoch k)**
Activities:	**Ingest, production, and archive of ECS and Version 0 migrated data (see following schedule charts)**
	Hard media data distribution and ingest
	Electronic data distribution
	ECS site and system maintenance activities
	Science SW maintenance activities

Day in the Life of ECS

ID	Name	1997 Q1	1997 Q2	1997 Q3	1997 Q4	1998 Q1	1998 Q2	1998 Q3	1998 Q4	1999 Q1	1999 Q2	1999 Q3	1999 Q4	2000 Q1	2000 Q2	2000 Q3	2000 Q4	2001 Q1	2001 Q2	2001 Q3	2001 Q4
63	B: SMC operations					3/6									3/31						
64	B: V0 data migration & distribution					3/6									3/31						
66	B: TRMM operations					3/6									3/31						
67	B: TRMM - LIS product generation					3/6									3/31						
68	B: TRMM - LIS reprocessing						9/1								3/31						
69	B: TRMM - PR, ... ingest, archive & distribution					3/6									3/31						
70	B: TRMM - CERES product generation					3/6									3/31						
71	B: TRMM - CERES reprocessing						9/1								3/31						
72	B: TRMM - VIRS ingest, archive & distribution					3/6									3/31						
73	B: LANDSAT-7 operations						5/31								3/31						
74	B: RADARSAT, ERS-1, ERS-2, JERS ECS operations					3/6									3/31						

Day in the Life of ECS

ID	Name	1997 Q1	1997 Q2	1997 Q3	1997 Q4	1998 Q1	1998 Q2	1998 Q3	1998 Q4	1999 Q1	1999 Q2	1999 Q3	1999 Q4	2000 Q1	2000 Q2	2000 Q3	2000 Q4	2001 Q1	2001 Q2	2001 Q3	2001 Q4
75	B: AM1 operations					6/30									3/31						
76	B: AM-1 - S/C operations					6/30									3/31						
77	B: AM-1 - ASTER product generation					6/30									3/31						
78	B: AM-1 - CERES product generation					6/30									3/31						
79	B: BM-1 - MISR product generation					6/30									3/31						
80	B: AM-1 - MODIS product generation					6/30									3/31						
81	B: AM-1 - MOPITT product generation					6/30									3/31						
82	B: AM-1 - ASTER reprocessing									6/30					3/31						
83	B: AM-1 - CERES reprocessing									6/30					3/31						
84	B: BM-1 - MISR reprocessing									6/30					3/31						
85	B: AM-1 - MODIS reprocessing									6/30					3/31						
86	B: AM-1 - MOPITT reprocessing									6/30					3/31						
87	B: FOO/Color operations					7/31									3/31						
88	B: FOO - Color product generation					7/31									3/31						
89	B: FOO - Color reprocessing									7/31					3/31						

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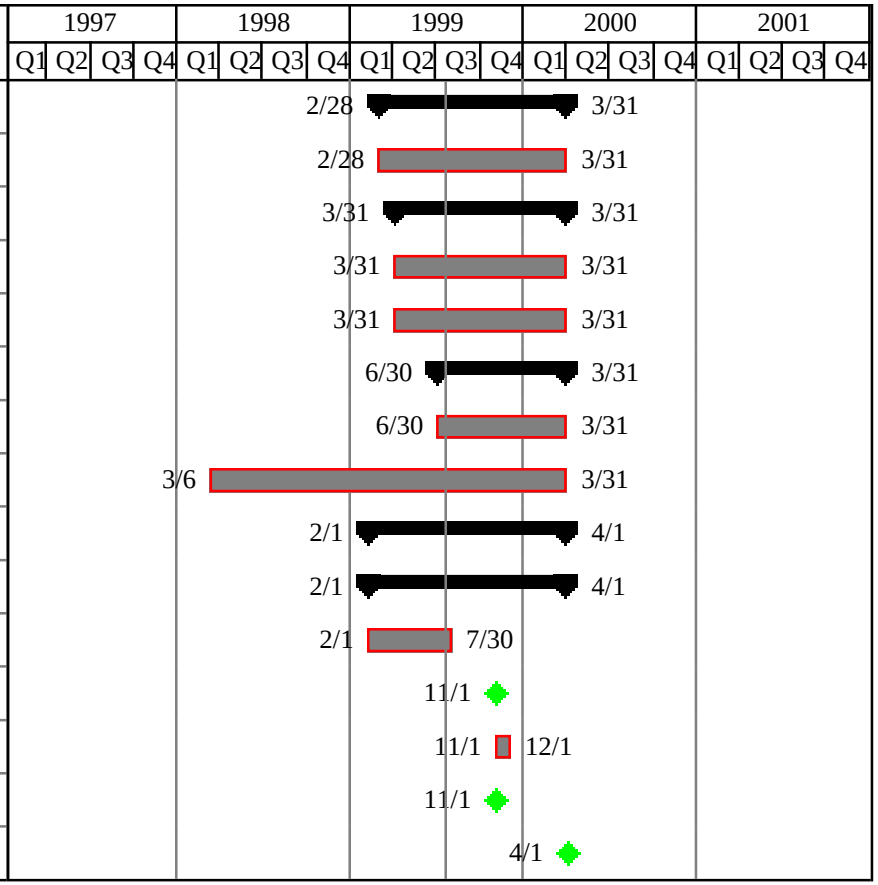
ID	Name
93	B: ADEOS-2 operations
94	B: ADEOS-2 - SWS product generation
95	B: RADAR ALT operations
96	B: RADAR ALT - DFA product generation
97	B: RADAR ALT - MR product generation
98	B: FOO/ACRIM operations
99	B: FOO - ACRIM product generation
100	B: ORNL data distribution
107	C: Release C
108	C: ECS development milestones
109	C: HW installations
110	C: Consent to Ship Review
111	C: ECS independent acceptance testing
112	C: Release Readiness Review
113	C: Operations transition (estimated)



Day in the Life of ECS

Mission	Launch	ASF	EDC	GSFC	JPL	LaRC	NSIDC	ORNL
TRMM	Aug-97			LIS VIRS*, PR*, TMI*, GV*		CERES		
Landsat-7	May-98		ETM+√					
AM1	Jun-98		ASTER MODIS	MODIS		CERES MISR MOPITT	MODIS	
FOO	Jul-98			COLOR				
METEOR	Aug-98					SAGE III		
ADEOS-2	Feb-99				SWS			
RADAR ALT	Mar-99				MR** DFA			
FOO	Jun-99					ACRIM		
Other		Other$ Version 0@ RAD'RS'T√ ERS-1√ ERS-2√ JERS	Other$ Version 0@	Other$ Version 0@ DAO/DAS	Other$ Version 0@	Other$ Version 0@	Other$ Version 0@	Other$ Version 0@

* Data archive & distribution only

√ Data distribution & selected data archive

@ Data migration, archive & distribution

** RADAR ALT/MR is TBD

$ Other data ingest, archive & distribution

Day in the Life of ECS

Operations Periods

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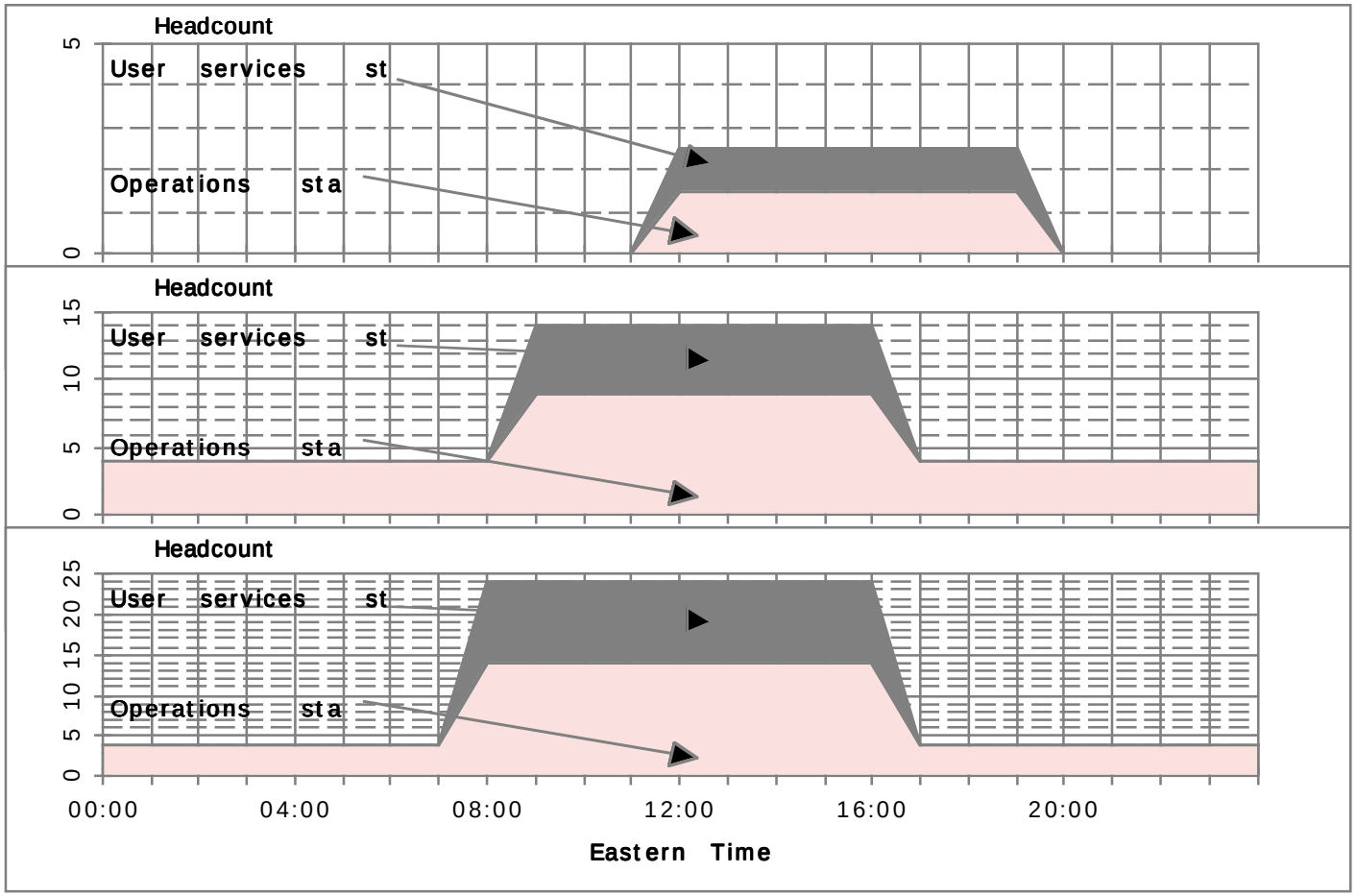
Day in the Life of ECS
Operations Periods

Hours of Operations

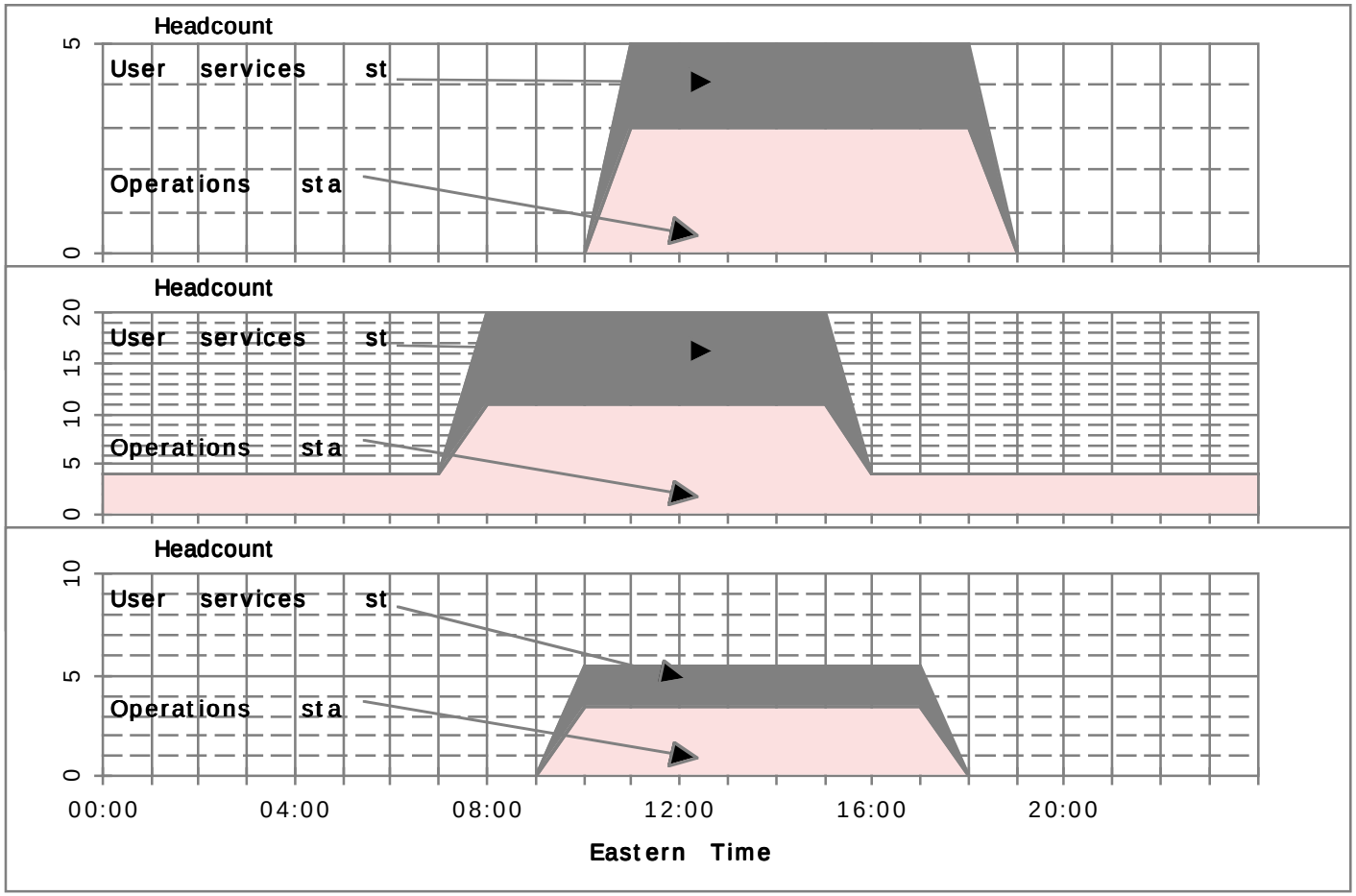
- ASF 5 days/week, 8 hours/day
- EDC 7 days/week, 24 hours/day
- GSFC 7 days/week, 24 hours/day
- JPL 5 days/week, 8 hours/day
- LaRC 7 days/week, 24 hours/day
- NSIDC 7 days/week, 8 hours/day
- ORNL 5 days/week, 8 hours/day
- SMC 7 days/week, 24 hours/day

Operations staffing for Monday, 19-Jul-99, shown on following charts

Day in the Life of ECS
Operations Staffing



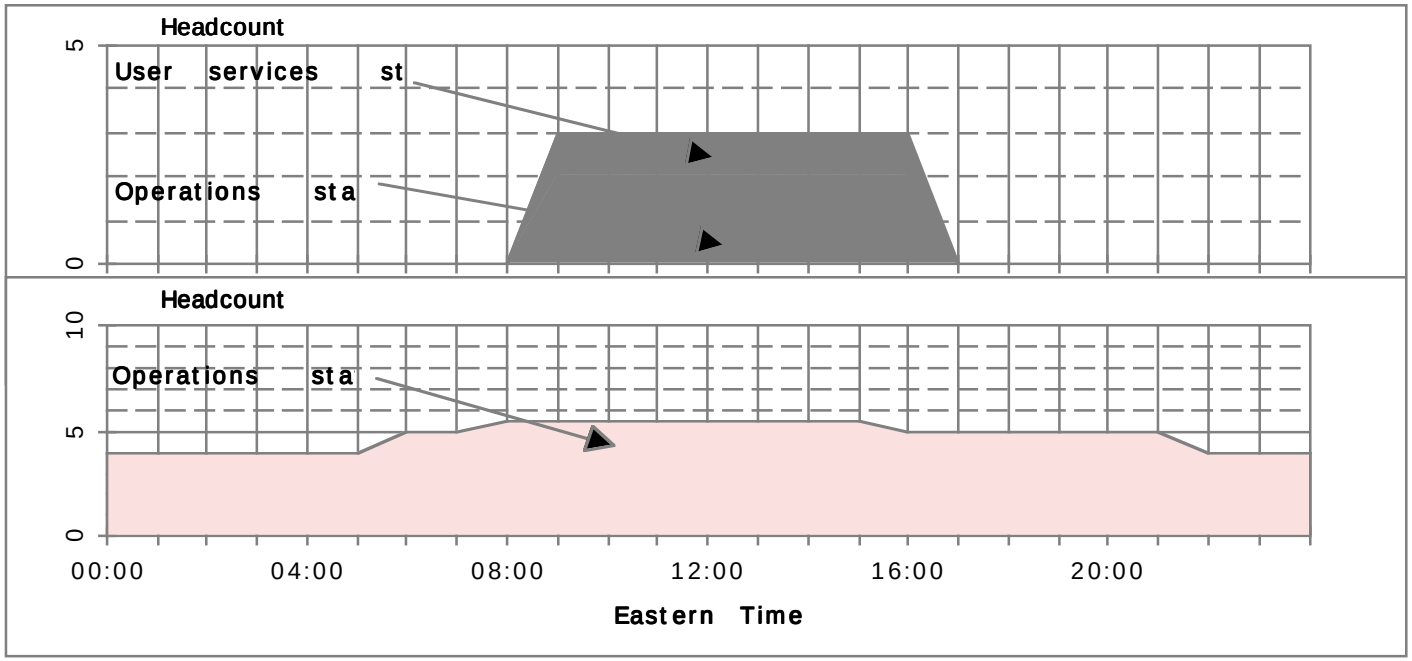
Day in the Life of ECS
Operations Staffing



Day in the Life of ECS
Operations Staffing

ORNL

SMC



Day in the Life of ECS

Modelling Data

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Day in the Life of ECS
Day_in_the_Life_Models

Three Day_in_the_Life_Models developed:

- **Day_in_the_Life_Product_Generation**
- **Day_in_the_Life_User_Access**
- **Day_in_the_Life_Hard_Media**

Day_in_the_Life_Models are not the same as the ECS Modelling groups static and dynamic models. Day_in_the_Life_Models have much less granularity and use probability calculations to simulate the "Day in the Life of ECS." Day_in_the_Life_Models do use the same data sources, however.

All Day_in_the_Life_Models implemented via Excel spreadsheets and use its RAND() function to vary from control parameters and to calculate probabilities.

All Day_in_the_Life_Models use a 2 minute time step.

All Day_in_the_Life_Models referenced to Eastern Time.

Day in the Life of ECS

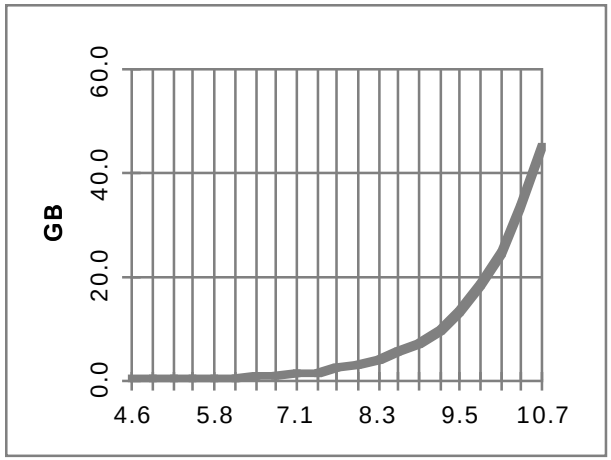
Day_in_the_Life_Product_Generation Aproach

PGE backlog	**Daily PGE count based on AHWGP data from Aug-95 with supplemental data from SPSO data. A PGE is assumed to be in “backlog” status if the necessary data products have been ingested. The number of PGEs to be “backlogged” for each ingest is determined by dividing the number of daily PGEs by the number of ingests (+ or - 25%)**
PGE completion	**PGE execution time determined by dividing the number of hours of operations by the number of PGEs to be executed. Time to execute is adjusted by the assumed excess spare capacity within 1X (33%).**
Archive writes	**Daily number of archive writes taken from AHWGP data or SPSO data base. Archive writes per PGE determined by dividing daily archive writes by daily PGE executions. Archive writes occur upon completion of PGEs. An additional allocation of 10% for “ad hoc” writes added.**

Day in the Life of ECS
Day_in_the_Life_Hard_Media Approach

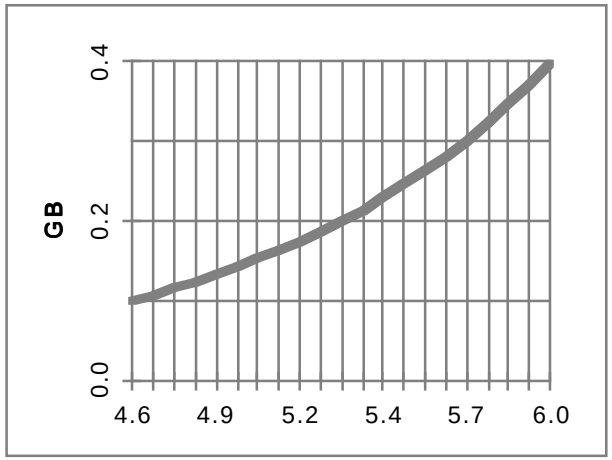
Hard media — **10 minutes per piece of media assumed and 50% utilization of staff for routine data distribution. An e^x distribution used to estimate the number of bytes in each order and to calculate the average number of orders per day. A minimum order of 100 MB assumed. Half of the orders are assumed to go onto 500 MB media and half onto 4 GB media. Examples:**

GSFC



Note different scales on X and Y axes

NSIDC



Day in the Life of ECS

Day_in_the_Life_Product_Generation & Day_in_the_Life_Hard_Media

		Daily Averages				
DAAC	Mission & Instrument	PGEs per day	Files archived per day	Processing/ Reprocessing Ingests per day	L1-L4 Volume (MB)	Hard Media Volume (MB)
ASF	RADARSAT		1,610.000	24/0	72,000	7,200
EDC	AM1/ASTER	645.000	1,289.000	1/24	50,075	5,008
	AM1/MODIS	1,384.074	849.574	24/24	126,945	12,695
	L-7/ETM+		300.000	24/24	139,400	13,940
	DAAC Total	*2,029.074*	*4,048.574*	*73/48*	*388,421*	*38,842*
GSFC	TRMM/GV		279.000	1/2	81,125	8,112
	TRMM/PR		121.167	1/2	9,579	958
	TRMM/TMI		52.067	1/2	1,768	177
	TRMM/VIRS		33.067	1/2	1,931	193
	TRMM/LIS	2.100	16.100	1/2	1,363	136
	AM1/MODIS	4,805.740	4,408.740	24/24	354,087	35,409
	DAO/DAS	5.000	17.000	1/7	2,632	263
	FOO/COLOR	69.000	165.000	24/24	1,701	170
	DAAC Total	*4,881.840*	*5,092.141*	*54/64*	*454,186*	*45,419*
JPL	ADEOS-2/SWS	30.400	50.600	2/0	4,347	435
	RADAR ALT/DFA+MR	4.000	4.000	4/0	183	18
	DAAC Total	*34.400*	*54.600*	*6/0*	*4,530*	*453*

Key model control parameters derived from F&PRS, or AHWGP andr SPSO data as documented in Aug-95 technical baseline

Day in the Life of ECS

Day_in_the_Life_Product_Generation & Day_in_the_Life_Hard_Media

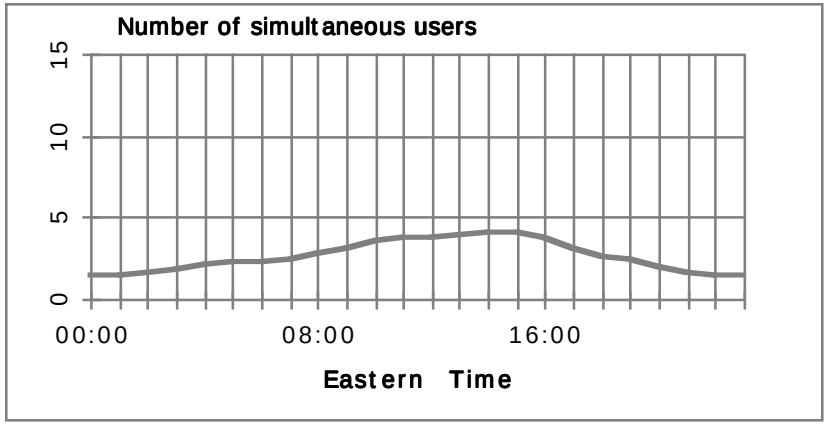
		Daily Averages				
DAAC	Mission & Instrument	PGEs per day	Files archived per day	Processing/ Reprocessing Ingests per day	L1-L4 Volume (MB)	Hard Media Volume (MB)
LaRC	TRMM/ CERES	103.247	167.150	1/24	24,444	2,444
	AM1/ CERES	103.337	128.563	24/24	31,453	3,145
	AM1/ MISR	426.964	1,751.934	24/24	174,338	17,434
	AM1/ MOPITT	4.284	3.568	24/24	170	17
	METEOR/ SAGE	III30.000	150.000	1/0	18	2
	FOO/ ACRIM	15.000	15.000	1/0	46	5
	DAAC Total	*682.832*	*2,216.215*	*75/96*	*230,469*	*23,047*
NSIDC	AM1/ MODIS	811.420	869.920	24/24	3,974	397
ORNL	Metadata		125.000	24/0		
	Archive data		125.000	24/0		
	DAAC Total	*0.000*	*250.000*	*48/0*	*3,974*	*397*
All	*ECS Total*	*8,439.566*	*14,141.450*	*304/232*	*1,157,554*	*115,755*

Key model control parameters derived from F&PRS, or AHWGP andr SPSO data as documented in Aug-95 technical baseline

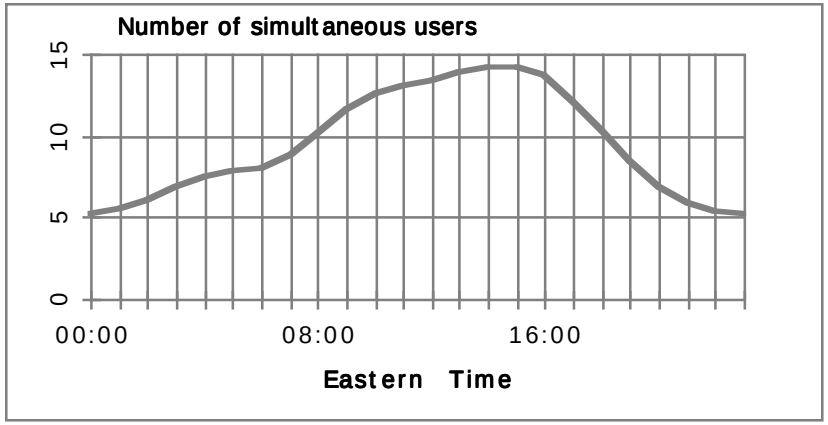
Day in the Life of ECS

Day_in_the_Life_User_Access

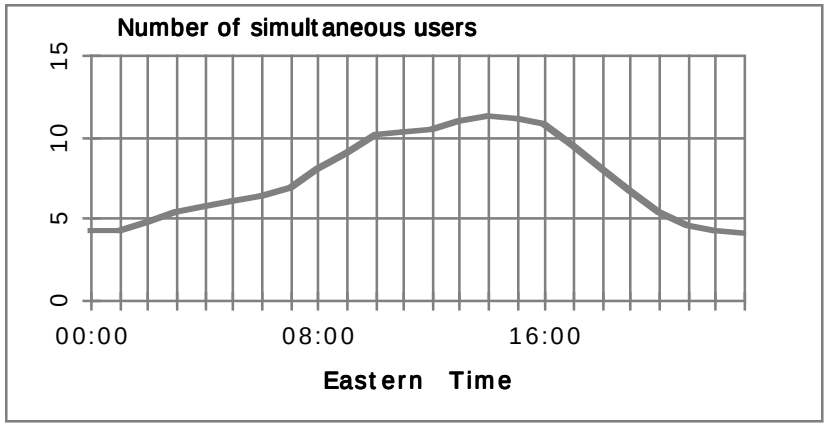
ASF (64 user accesses per day)



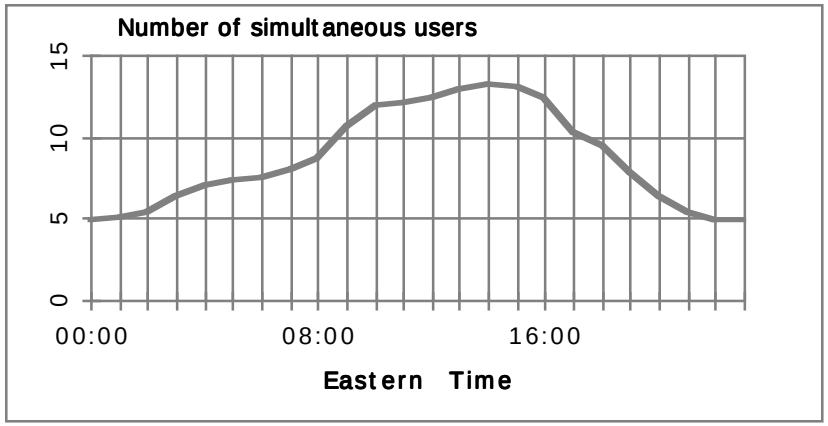
EDC (227 user access per day)



GSFC (176 user accesses per day)



JPL (208 user access per day)

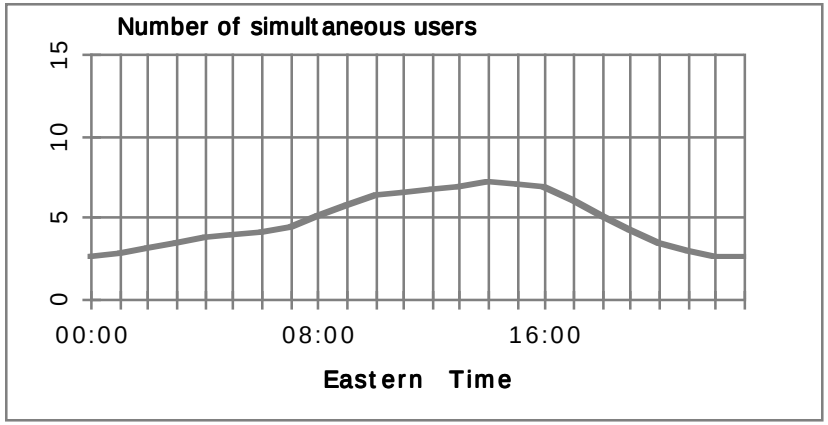


Daily average number of user accesses and time distribution from user modelling

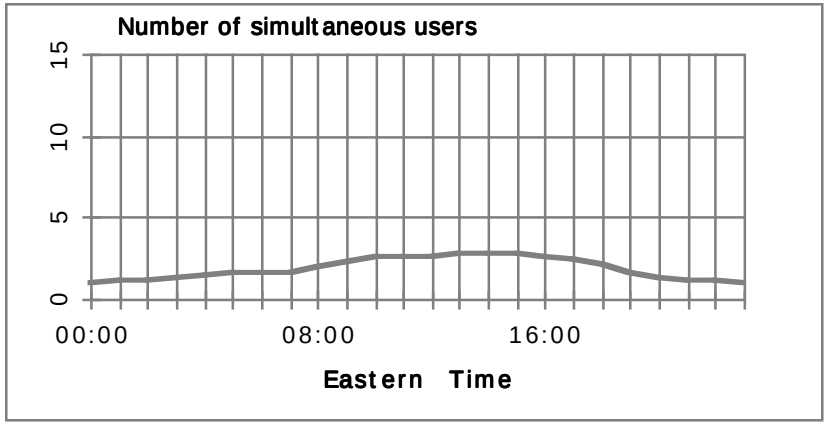
Day in the Life of ECS

Day_in_the_Life_User_Access

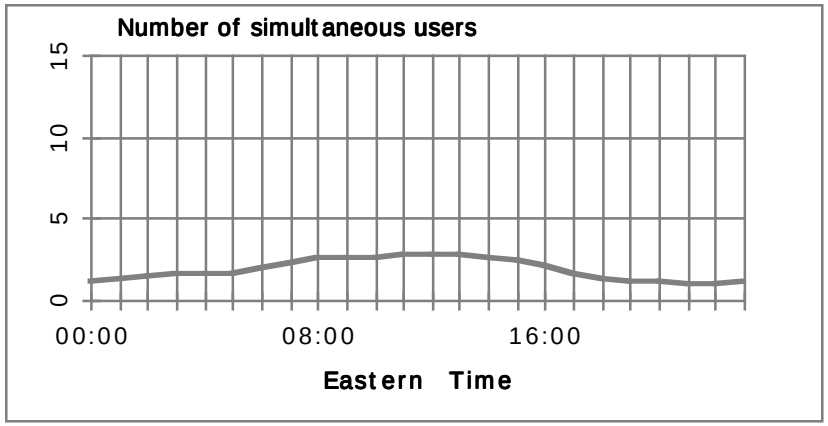
LaRC (112 user accesses per day)



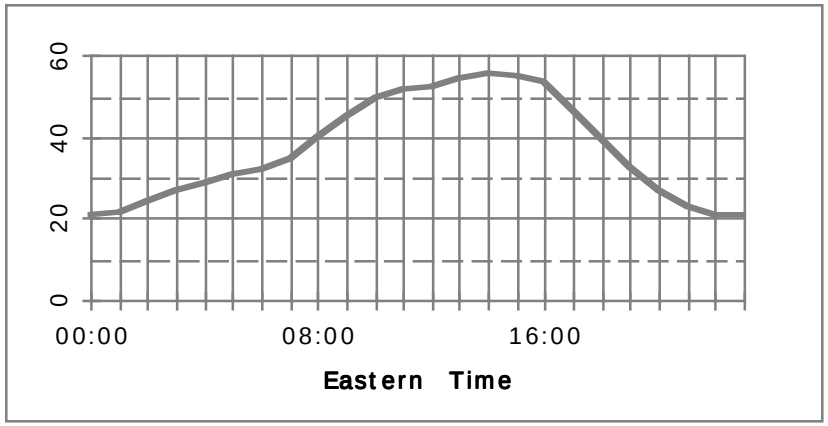
NSIDC (45 user access per day)



ORNL (45 user accesses per day)



Total (872 user accesses per day)



Daily average number of user accesses and time distribution from user modelling