

**General**

The purpose of this Appendix is to specify, at a summary level, many of the cost-driving capacity requirements for the ECS and to describe the assumptions and methodologies used to derive those capacities. Other capacity requirements, such as CPU main storage, RAID buffering and working storage, local (intra-DAAC) and wide area (inter-DAAC and DAAC-SCF) communications traffic, size and structure of higher levels of the "data pyramid," etc. are not directly tabulated in this Appendix. Some of these other requirements may be derived from engineering models using the same, more detailed, information which is summarized in the tables in this Appendix. Some of these other requirements (CPU main storage, in particular) will require engineering judgment and continued interaction with the investigators to determine.

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The numbers in these tables correspond to the instrument manifest and launch schedule as follows:

Mission	Instruments	Launch Date	
(Deleted)			CH09
			CH09, 40
Landsat 7	ETM+	May, 1998	CH09
EOS AM-1	ASTER, CERES, MISR, MODIS, MOPITT	June, 1998	CH09 CH46
(DELETED)			CH09, 29
METEOR	SAGE III	August, 1998	CH09
ADEOS II	SeaWind, AMSR	August, 1999	CH32, 46
Jason-1	MR, DFA	Late, 1999	CH32, 46

The following instrument manifest and launch schedule are part of the ECS design baseline but do not contribute to the required capacities:

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(DELETED)			CH09, 32
(DELETED)			CH09, 32
FOO	ACRIM	June, 1999	CH09
(DELETED)			CH09 CH29
EOS PM-1	AIRS, AMSU, CERES, AMSR, MODIS, MHS(NOAA)	December, 2000	CH09 CH29
Space Station	SAGE III	June, 2001	CH09
EOS CHEM-1	HIRDLS, MLS, ODUS, TES	December, 2002	CH09
LASER ALT	GLAS	July, 2002	CH09, 46

There is no ECS processing required for ETM+ on Landsat 7, for SeaWinds on ADEOS II, or for instruments on Jason-1. | CH09, 29, 40,46

In general, data for AM-1, METEOR, ADEOS II, and Jason-1 are derived from input from and interaction with the Ad Hoc Working Group on Production (AHWGP) as tabulated in the February, 1996 ECS Technical Baseline (version 3.01). Information for Landsat 7 is based on the Interface Requirement Documents. | CH29,32,46  
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CH29, 32  
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**Table C-1 — GB/Day Level 0 Data Ingested**

Daily Level 0 data volumes are computed from the average instrument data rates in the instrument manifest shown in Appendix D. Data is assumed to start flowing at launch for each supported mission. No communications protocol overhead has been added nor has any allowance been made for summary/quality header/trailer information which may be appended during production data processing in EDOS. The Level 1A and 1B data for ASTER from Japan to EDC is also included as a line in this table. The bulk of this data will arrive *via* media. | CH09  
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**Table C-2 — GB/Day EOS Level 1-4 Products Generated**

The contribution to this table from AM-1, METEOR, ADEOS II, and Radar ALT is based on the algorithm activation plan developed by the AHWGP. Although the AHWGP plan is at a quarterly resolution, this table is at a yearly resolution and values for a given year are the maximum of the AHWGP values for any quarter in that year. | CH09  
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Note that the Level 1 ASTER products (produced in Japan) are not included here, but as a separate line in Table C-1. | CH09

**Table C-3 — TB Non-EOS Data in ECS Archive (Cumulative)**

This table includes data migrated into ECS from EOSDIS Version 0, and the Level 0R archive for Landsat 7. The volumes of migrated Version 0 data are derived from the Version 0 Data Migration Plan. Information for Landsat 7 is based on Interface Requirement Documents with the respective Projects. This table also includes the receipt for ECS archival of about 10 GB/day of non-standard products or research results produced at SCFs. | CH09, 40  
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**Table C-4 — TB Total ECS Archive Capacity Required (Cumulative)**

This table summarizes and is derived from the same information used to develop tables C-1, C-2, and C-3. It factors in the requirement to store Level 0 data for a year for those instruments producing a Level 1A product and to archive Level 0 data | CH29  
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indefinitely for those instruments not producing a Level 1A product. It includes the cumulative storage required to hold all the Level 1 through Level 4 products produced by the complete instrument manifest, except for the ASTER Level 2 products produced on demand which do not require archival. | CH09

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In addition to the capacity to archive the accumulated 1x standard product production output, this table includes capacity to archive reprocessed data as well as the data made obsolete by reprocessing while approval for its deletion is pending. Six months of product storage is assumed starting one year after production initiation with another six months of storage added two years after production initiation. (This is derived from the assumption in DADS0412 that old versions of a product are deleted after six months.)

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For the EOS standard products the capacity requirements have been increased by five percent (5%) to account for storage of associated browse products.

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The EOC column in this table includes the additional ECS archive capacity required to carry the system for a year after the end-of-contract without purchasing additional equipment.

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No allowance is made in this table for storage overhead or inefficiency of media utilization. However, neither is any data compression assumed in this table.

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**Table C-5 — MFLOPS Executed for SSI&T and Standard Product Production**

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The values in this table are based on the "1x" estimates from the algorithm activation plan developed by the AHWGP. A cumulative phase-in of 0.3x two years before activation, 1.2x one year before activation, 2.2x one year after activation, and 4.0x two years after activation has been applied. (No allowance for CPU inefficiency has been applied.) Although the AHWGP plan is at a quarterly resolution, this table is at a yearly resolution and contains the maximum value for any quarter in that year.

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**Table C-5a — Total Manufacturer-rated MFLOPS for DAO (Deleted)**

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**Table C-6 — Number of Granules in Inventory (Cumulative)**

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The number of granules migrated from Version 0 is derived from the Version 0 Data Migration Plan and discussions with the DAACs. Information for Landsat 7 is based on the Interface Requirement Document with the Landsat Project. Data for AM-1, METEOR, ADEOS II, and Radar ALT are derived from the number of executions per day specified by the AHWGP.

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In accordance with the same assumptions made in table C-4 of the retention for six months (real time) of EOS products superseded by reprocessing, an additional inventory of six months of granules by the first year after production initiation is included in this table.

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Browse products associated with standard products are not counted in this table as separate granules.

**Table C-7 — through Table C-9 (Deleted)**

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**Table C-10 — Baseline Metadata Attributes, and  
Table C-11 — Product Specific Metadata Attributes**

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The estimated length of metadata attributes is given in the two Metadata Attributes tables (C-10 and C-11). The Metadata Attributes tables are preliminary and subject to change as additional information about EOS data products becomes available. The Baseline Metadata Attributes (Table C-10) are the minimum set of attributes necessary for the inventory purpose. The Product Specific Metadata Attributes (Table C-11) represent a set of attributes required to describe instruments and geophysical parameters. The volume of inventory metadata can be estimated by adding the lengths of the Baseline and Product Specific Metadata Attributes (2000 bytes) and multiplying by the number of granules in the inventory from Table C-6.

**Table C-12 through C-14 — (Deleted)****Table C-15 — Landsat 7 Volume Estimates Ingest & Archive, and  
Table C-16 — Landsat 7 Product Volume Distribution Estimates**

These tables, derived from the Landsat 7 Interface Requirements Document, give more detail about the ingest, archive, and distribution requirements for Landsat 7.