Road from PDR

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ECS Release A SDPS/CSMS Critical Design Review
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Topics

- **Release A Mission and Functional Scope**
- **Ir1 Mission and Functional Scope**
- **Technical Baseline (Major Changes Since PDR)**

Release A
Mission and Functional Scope

Support TRMM Operations

- **Ingest, Archive and Distribute TSDIS Products**
  - **GSFC DAAC - VIRS data**
  - **MSFC DAAC - PR, TMI, GV and Combined Products**
  - **Distribution/Ingest capacity for TSDIS reprocessing**
- **Ingest L0 from SDPF**
  - **LaRC DAAC - CERES**
  - **MSFC DAAC - LIS**
- **Produce, Archive and distribute CERES/LIS Data**
- **Obtain needed ancillary data**
  - **TSDIS : NMC, GPCP Satellite-derived Monthly Rainfall, GPCC Global Precipitation, SSM/I**
  - **CERES : VIRS, ISCPP,SAGE II, TOMS Ozone, TMI Water Vapor, NESDIS (Vegetation Index, Snow/Ice Cover, Aerosols, Ozone)**
- **Continued support for I&T of CERES/LIS Science Software Updates**

Ingest, archive, and provide user access to selected V0 migrated data

Release A
Mission and Functional Scope (Cont)

Support Early Testing in support of AM-1/Landsat 7

- **Support science software I&T for AM-1**
  - **GSFC : MODIS**
  - **EDC : ASTER, MODIS**
  - **LaRC : CERES, MISR, MOPPIT**
- **Support early interface testing**
  - **Landsat 7 data ingest at EDC**
  - **EDOS/ETS L0 data ingest at GSFC and LaRC**
  - **Ancillary data ingest**
  - **EOC data transfer**

Provide communication infrastructure at each site

Provide system management component at each site and management coordination node at SMC

Interim Release 1
Mission and Functional Scope

Support early interface testing for TRMM

- **Data ingest testing of SDPF L0 data**
  - **CERES @ LaRC**
  - **LIS @ MSFC)**
- **Data ingest testing of TSDIS data**
  - **VIRS @ GSFC**
  - **PR, TMI, Combined Products & GV @ MSFC**
- **Data ingest testing of ancillary data**
  - **NMC data (Via DAO), TOMS Ozone @ GSFC**
  - **ISCCP, SAGE II, NESDIS data @ LaRC**
  - **SSM/I, GPCP Satellite-derived Monthly Rainfall, GPCC Global Precipitation @ MSFC**
- **Data transfer testing to TSDIS**
  - **lower level TSDIS products for reprocessing**
  - **Ancillary products (SSM/I, GPCP Satellite-derived Monthly Rainfall, GPCC Global Precipitation, NMC data)**

Interim Release 1
Mission and Functional Scope (Cont)

- **Support science software I&T for AM-1 & TRMM**
  - **GSFC : MODIS**
  - **EDC : ASTER**
  - **LaRC : CERES, MISR, MOPPIT**
  - **MSFC: LIS**

Technical Baseline (All Releases)

CDR Technical Baseline Frozen June 21, 1995 (210-TP-001-003, available on EDHS)

- **Refined AHWGP inputs along with inputs for some later missions**
  - **SeaWinds, DFA, MR**
  - **Continue to use SPSO data for Others (SAGE III, ACRIM)**
  - **Added Landsat 7 and TSDIS storage requirements**
  - **DAO First Look Analysis process added**
- **Requirements Baseline: June 1994 F&PRS updated by 2 contract modifications (17 and 22). Certain CCRs are also assumed.**
  - **CCR 505-01-41-050 (Elimination of DARS and Quick look from FOS)**
  - **CCR 505-01-41-064 (Elimination of all DARs except for ASTER)**
  - **CCR 505-01-41-073 (ECS Mission Capacity Revision)**
  - **CCR 505-01-41-075* (Expedited Data)**
  - **CCR 505-01-41-083 (ASTER DBMS for lookup table)**

*** CCR Incorporated as Contract Modification # 26 after Baseline Freeze Date**

Major Changes since PDR Affecting Release A

Primarily affects Release A

- **Increase in volume of V0 migration data products (PDR estimates for some products based on compressed data volumes)**

Primarily affects Release B (Release A look ahead or early test support)

- **Minor increase in MODIS processing requirements**
- **MISR processing requirements rephasing (lower initial slope)**
- **Growth in MODIS processing at EDC; reduction at GSFC**
- **Minor reduction in MODIS data volumes**
- **Refined user characterization data (Update to Relative Product Access Frequency information)**

Impact of changes are minimal to Release A design presented at PDR

Requirement Changes since PDR

Modification

- **Expedited replaces quick look**
- **EBnet (Consolidation of ESN and ECOM) in process**

Migration

- **Ir1 to Release A**
  - **PDPS Planning & Scheduling - Use prototype for Ir1**
- **Release A to B**
  - **V1 Client (Reuse of V0 client to reduce development schedule risk)**
  - **"Virtual IMS"/Local Data Access Service (Needs V1 Client)**
  - **Data dictionary services (Use V0 "valids" concept in Release A)**
  - **COTS Licence Administration (Limited COTS distributed to science users in Rel A)**
- **Release B to A**
  - **Trouble ticketing services (Better support for problem tracking in Rel A)**

Release A Supported Missions

Platform	Instruments	Source of Sizing Estimates
TRMM (Operational)	CERES, LIS	AHWGP
	VIRS, PR, TMI	TRMM IRD *
Landsat 7 (Early test)	ETM	Landsat IRD
AM-1 (Early test, S/W I&T)	ASTER, CERES, LIS, MISR, MODIS	AHWGP

Note: Technical baseline does not reflect ~ 20% volume increase of post baseline freeze CCR

Guidelines for Sizing Release A

Processing

- Provide CERES and LIS processing for 1 year beyond TRMM launch
  - .3 X processing capacity at Ir1 (Jan, 96)
  - Additional .9 X processing capacity at TRMM launch-1 yr (Aug, 96)
- Provide .3 X processing capacity for AM-1 Science Software I&T as part of Ir1 (Jan, 96) *

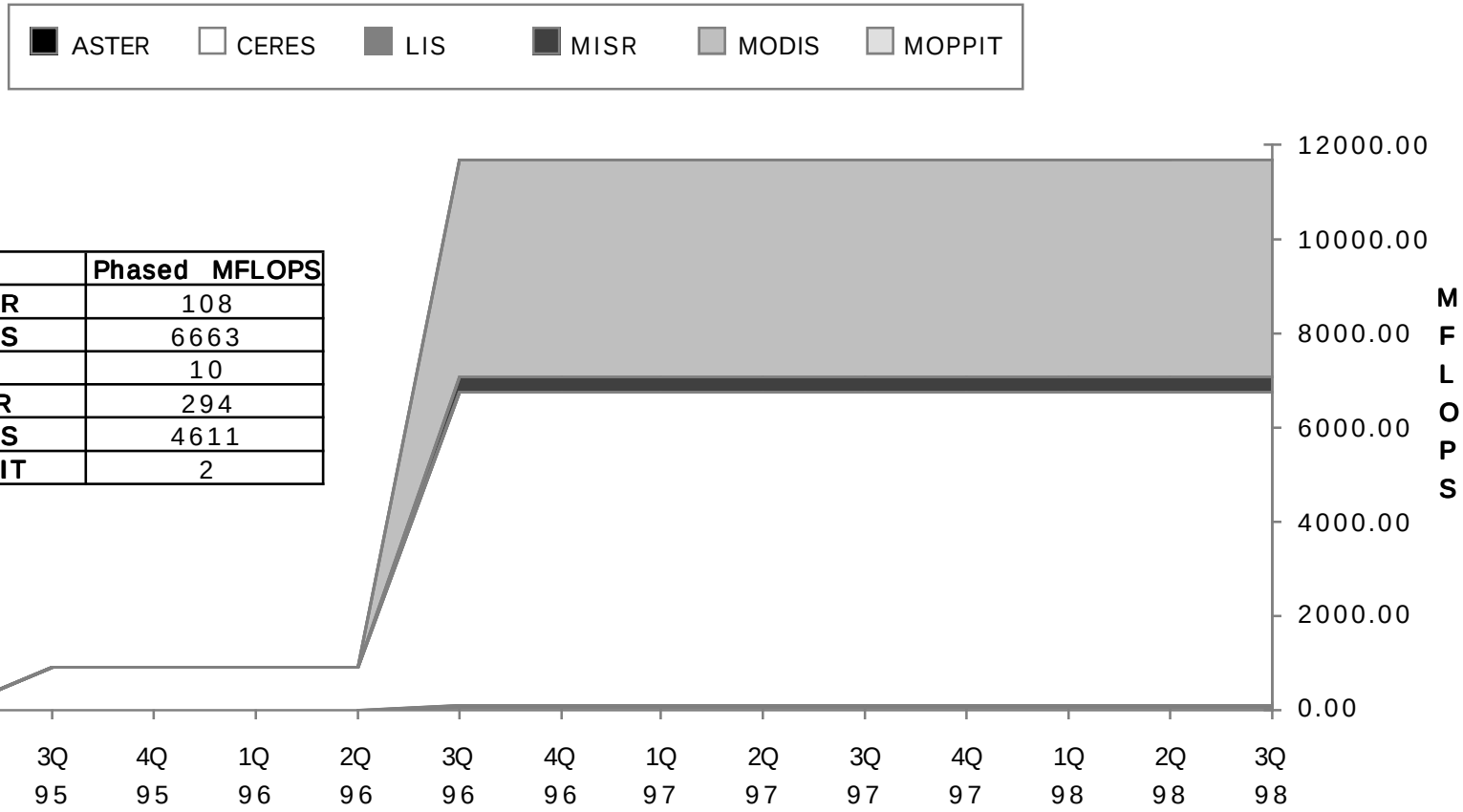
Archive

- Provide TRMM archive capacity for 1 year beyond TRMM launch **
- Provide V0 migration capacity for planned migration at 3 operational sites up to Release B start

* Additional .9 X capacity for AM-1 processing at launch - 1 yr (June,97) delivered at part of Release B

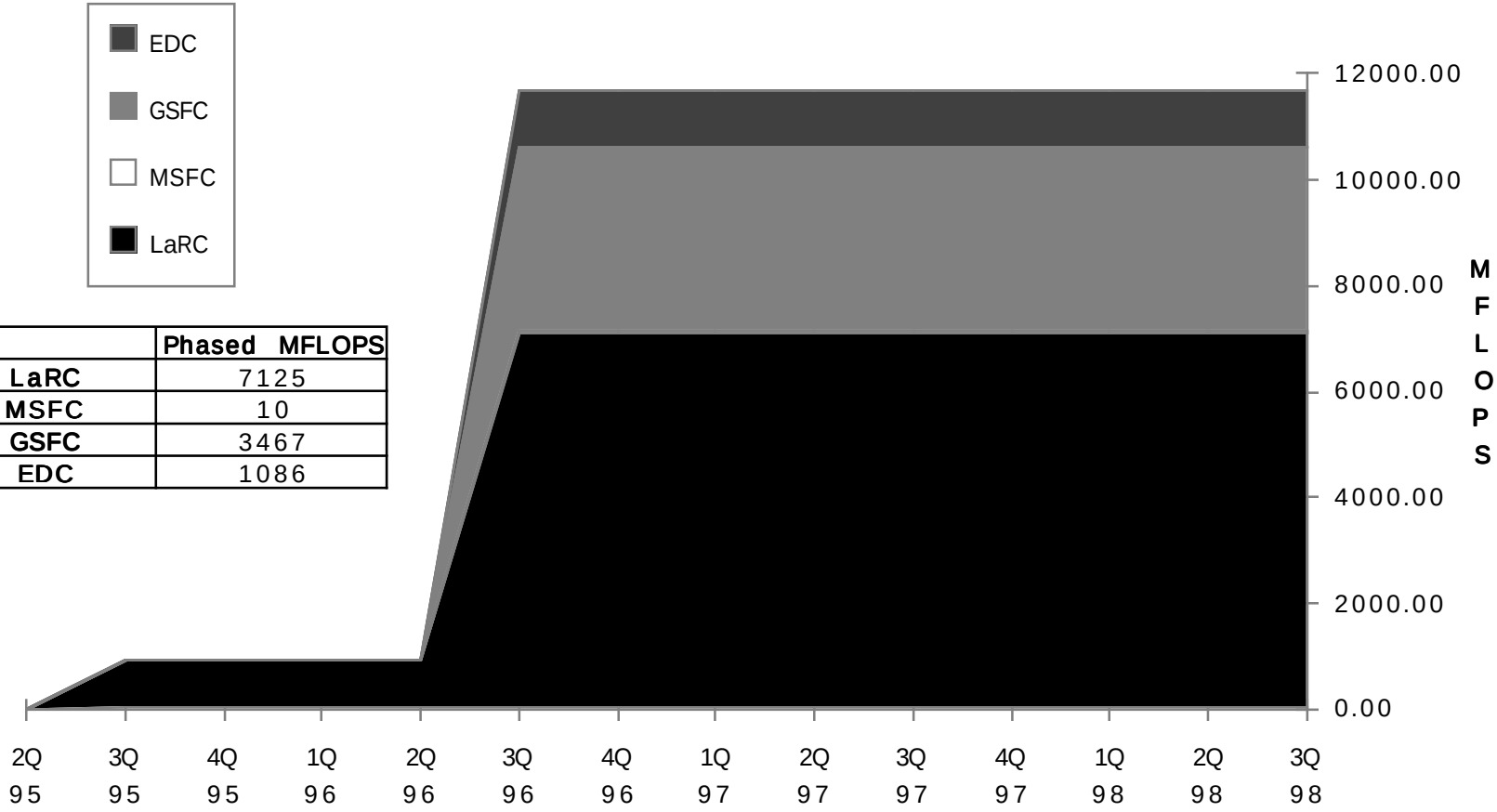
** Responds to PDR issue of Release A archive sized for only 44 days after TRMM launch

Release A Processing Requirements by Instrument



	Phased MFLOPS
ASTER	108
CERES	6663
LIS	10
MISR	294
MODIS	4611
MOPPIT	2

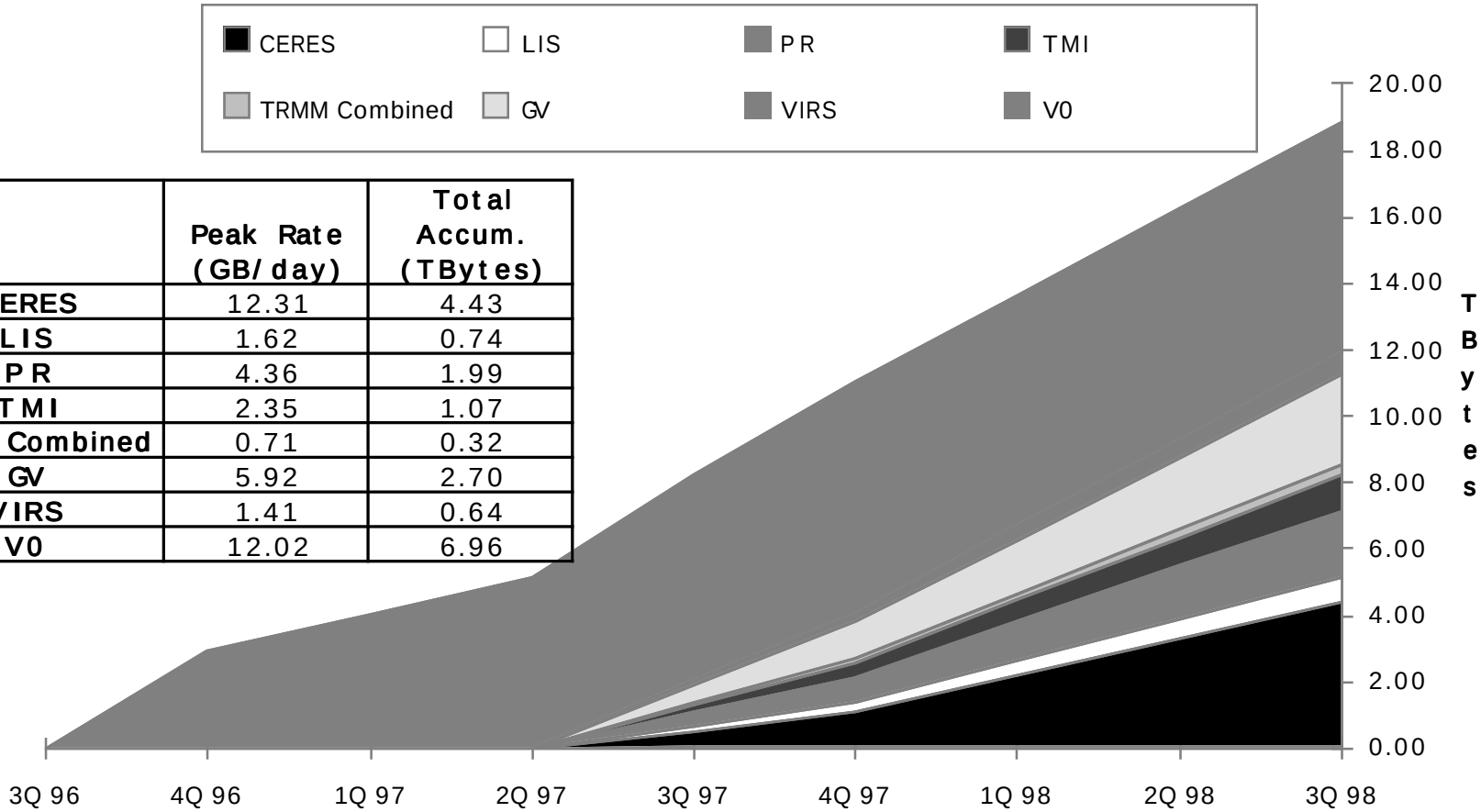
Release A Processing Requirements by DAAC



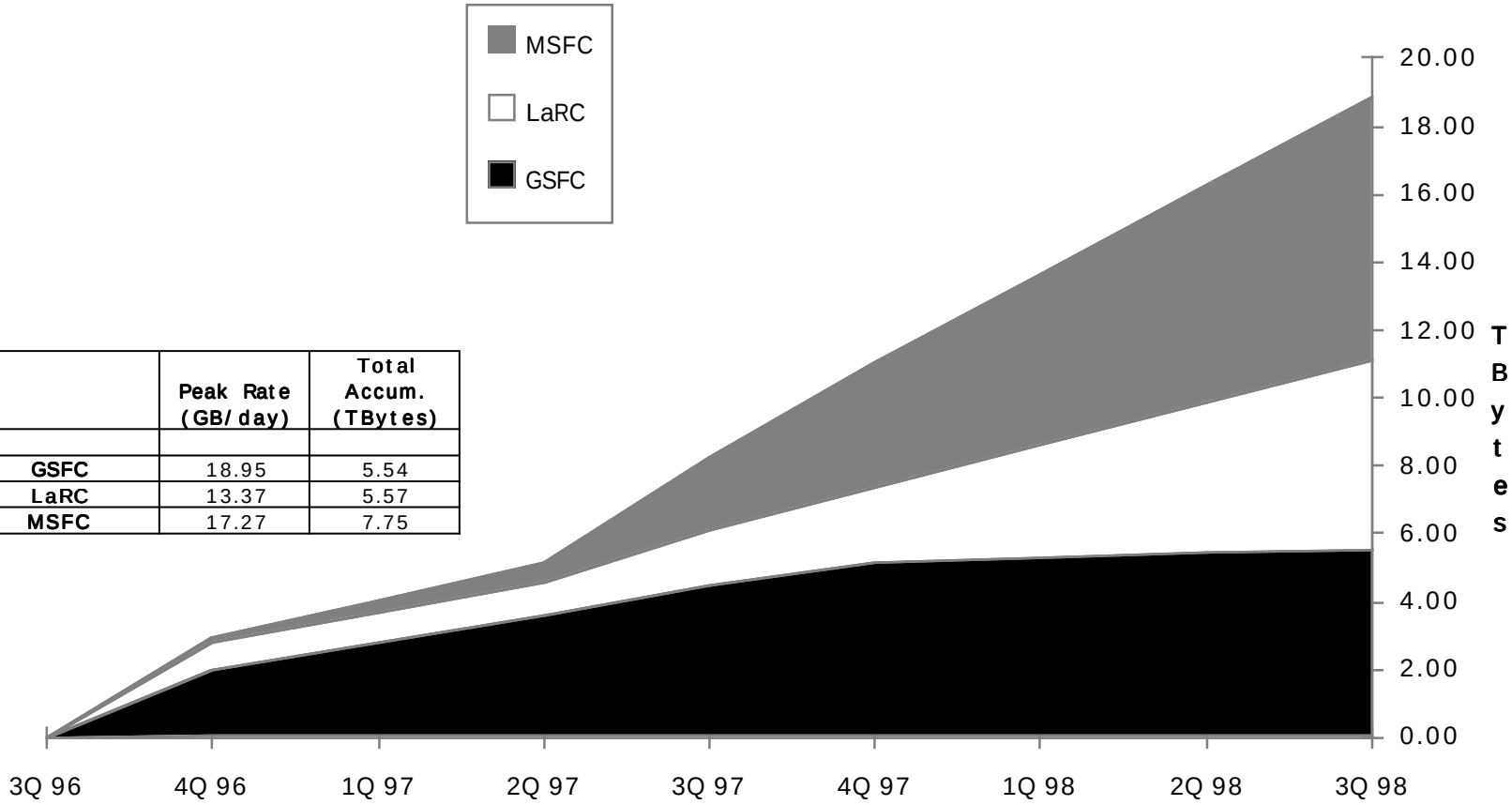
	Phased MFLOPS
LaRC	7125
MSFC	10
GSFC	3467
EDC	1086

Release A Archive Requirements by Instrument

	Peak Rate (GB/day)	Total Accum. (TBytes)
CERES	12.31	4.43
LIS	1.62	0.74
PR	4.36	1.99
TMI	2.35	1.07
TRMM Combined	0.71	0.32
GV	5.92	2.70
VIRS	1.41	0.64
V0	12.02	6.96



Release A Archive Requirements by DAAC



	Peak Rate (GB/day)	Total Accum. (TBytes)
GSFC	18.95	5.54
LaRC	13.37	5.57
MSFC	17.27	7.75