

Global Processing and Products from MERIS Full Resolution Data for the Coastal Zone

User Consultation Meeting 3

Processing

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Lisbon, Portugal



CoastColour

Coastcolour Processing Requirements

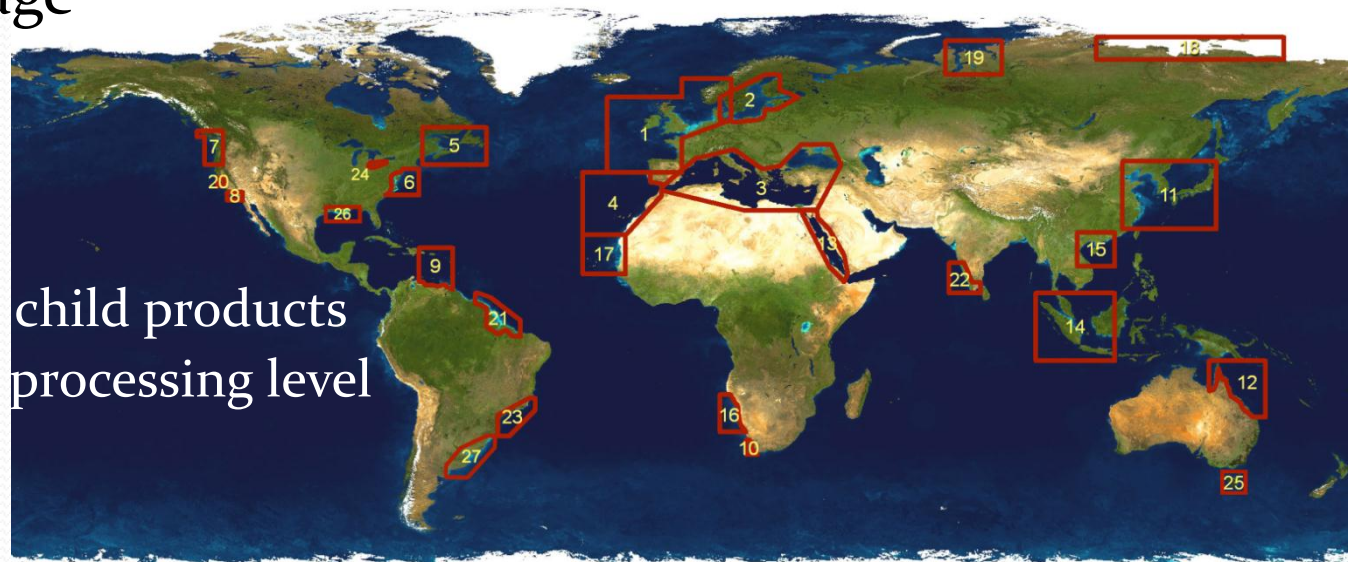
- Temporal coverage
 - 6 years of data 2005 – 2010
 - Input data volume ~ 7.7TB/year = 45TB
 - Near real time service 10/11 – 03/2012

- Spatial coverage

- 27 sites

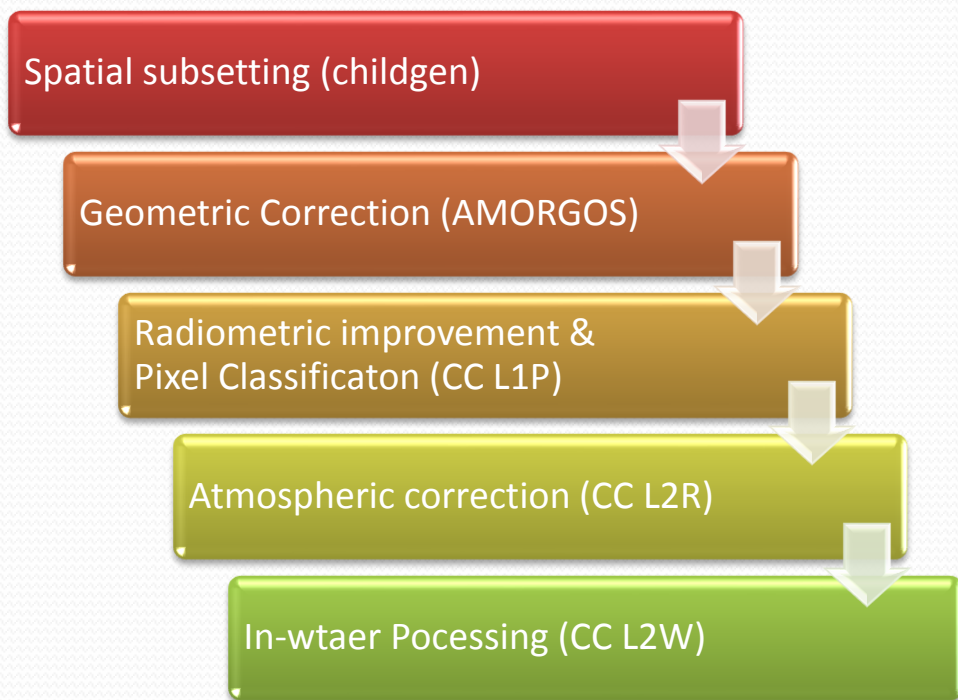
- Data Volume

- 75 000 FRS child products
- 33 Tbytes / processing level



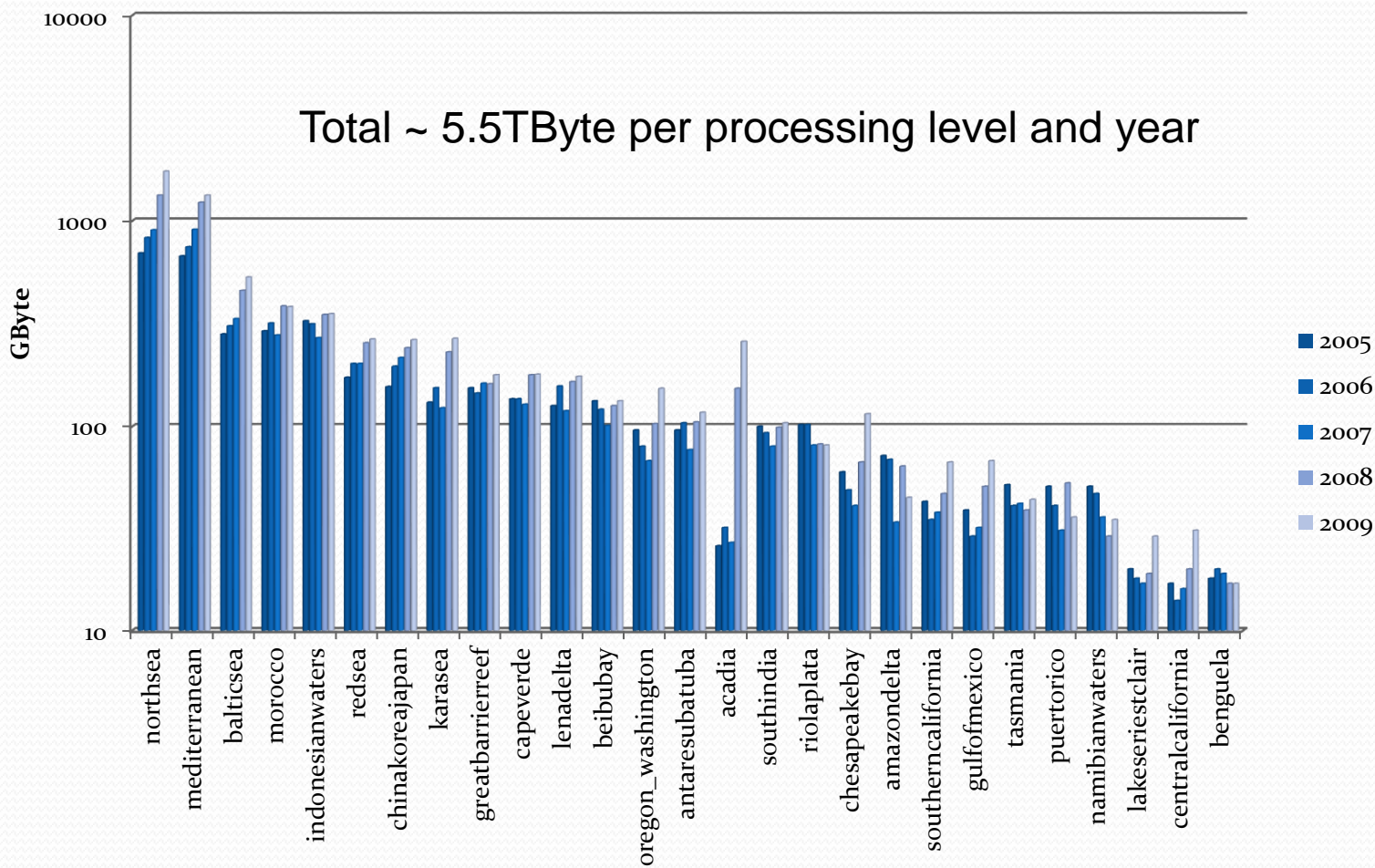
Background Image: Blue Marble © NASA

Processing Chain & Production Line



1. Processing
2. Formatting
3. Extraction
4. Validation
5. Renaming
6. Duplicate Removal
7. Move to FTP

Data Volume



Main Storage Hardware

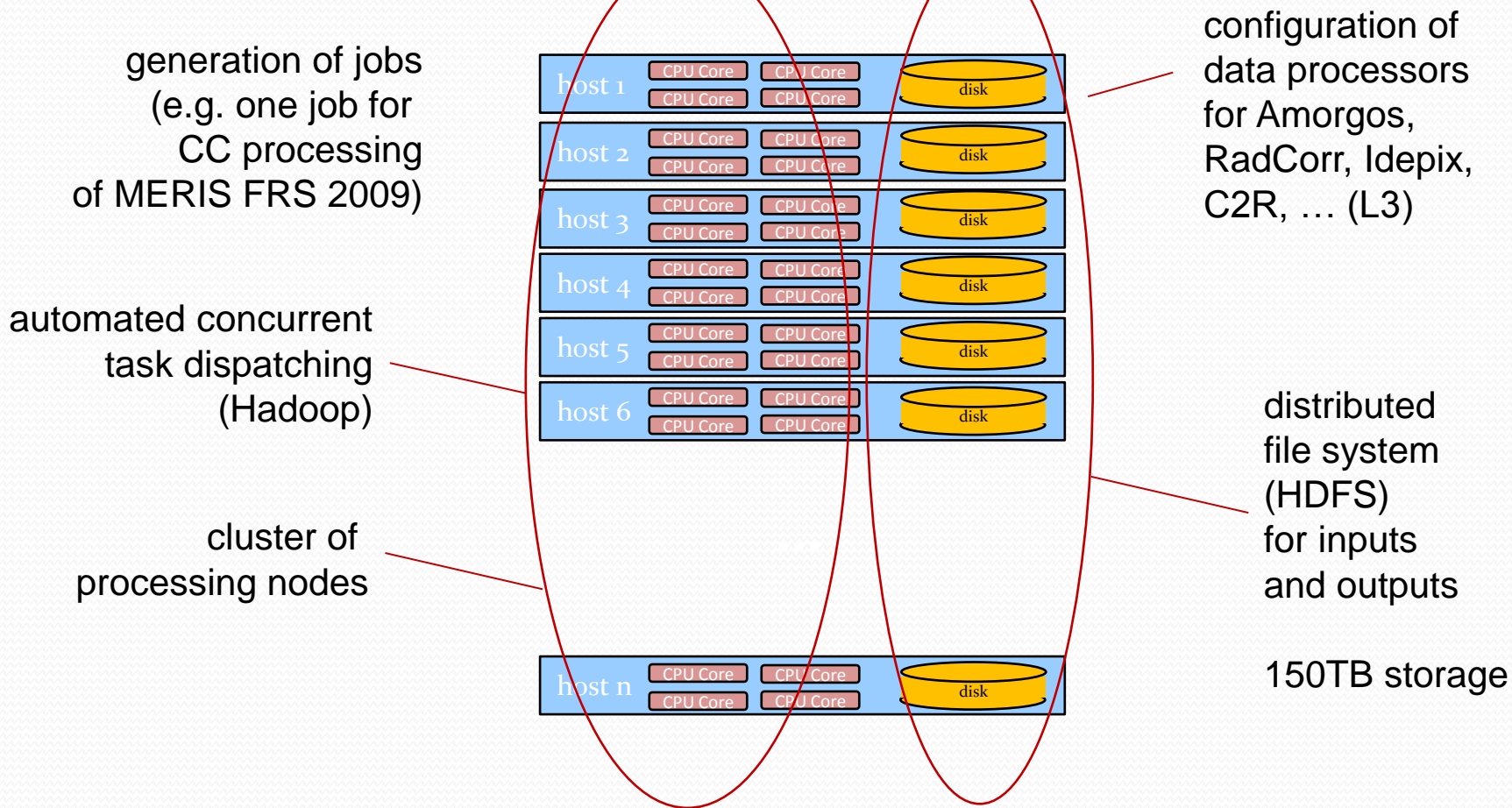
- File Server and Support Processing System
 - 3 DELL T710 Compute Server
 - Each: 16 core, 24G Ram, 4.5 TB SAS disks
 - 1 DELTA SuperMicro File Server
 - 64 TB SATA storage RAID Level 6
 - 90 TB offline storage (hard disks)
- External ftp
 - Round Robin Data Set
 - Demonstration Data set (L1P, L2R, L2W)
 - Full set of L1P
 - $2 \times 4 \text{ disk} * 3\text{TB} = 24\text{TB online}$

Production Hardware

- The Calvalus Cluster comprising 20 nodes, á
 - 7.5 TB (150TB total)
 - 4 x 2.66 GHz
 - 8 GB RAM (160GB total)
- Running Apache Hadoop



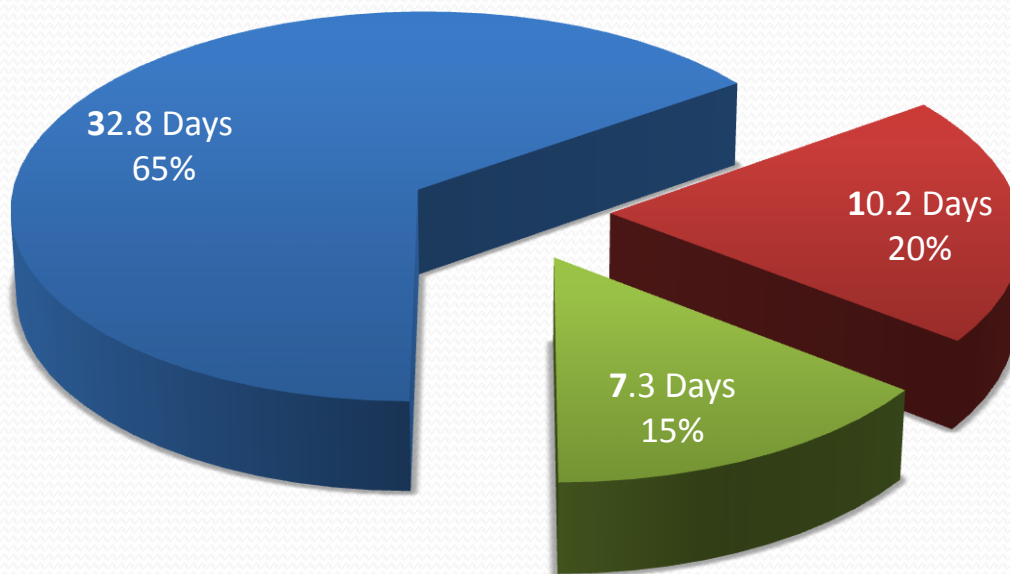
Calvalus Processing Environment



27 sites and 1 year processed to L1P, L2R, L2W on a cluster of 20 hosts.

Processing Times

■ L1P ■ L2R ■ L2W



All data from 2005 – 2010, all sites:
 Input data volume: 44TB

Generated Datasets

- Demonstration Dataset
 - 1 year, all sites, L1P, L2R, L2W
 - All match-ups
- Special requests for validation
 - US east coast, North Sea, Indian waters, Portuguese waters, Rio de la Plata
- Validation Dataset
 - Northsea, Morocco and Southindia
 - Match-ups

FTP Access to Demonstration Dataset

Data Access
 L1P for all Users
 L2R/W for Champion Users for
 Validation and Feedback

Dateiname	Dateigröße	Dateityp	Zuletzt geändert
..			
MER_FSG_CCL2R_20060101_113017_000002112043_00481_20074_0001.nc.gz	1.280.181.964	gz Archive	31.05.2011 21:34:00
MER_FSG_CCL2R_20060102_105908_000001042043_00495_20088_0001.nc.gz	82.606.932	gz Archive	31.05.2011 19:52:00
MER_FSG_CCL2R_20060102_110049_000000812043_00495_20088_0001.nc.gz	124.885.010	gz Archive	31.05.2011 19:52:00
MER_FSG_CCL2R_20060104_113554_000002022044_00023_20117_0001.nc.gz	981.628.735	gz Archive	31.05.2011 19:40:00
MER_FSG_CCL2R_20060104_113914_000000142044_00023_20117_0001.nc.gz	16.899.925	gz Archive	31.05.2011 19:52:00
MER_FSG_CCL2R_20060105_110447_000001882044_00037_20131_0001.nc.gz	284.705.071	gz Archive	31.05.2011 19:52:00
MER_FSG_CCL2R_20060107_114139_000002082044_00066_20160_0001.nc.gz	923.037.157	gz Archive	31.05.2011 20:07:00

339 Dateien, Gesamtgröße: 132.035.274.391 Bytes

Output Data Volume

Year	L1P	L2R	L2W
2005	3000 GB	-	-
2006	3000 GB	2900 GB	2300 GB
2007	3800 GB	-	-
2008	3400 GB	-	-
2009	3500 GB	-	-
Sum	16700 GB	2900 GB	2300 GB

Overall output data: 22000 GB

Number of Products for 2006

2006	L1P	L2R	L2W
acadia	93	93	93
amazondelta	220	220	220
antaresubatuba	286	286	286
balticsea	485	485	485
beibubay	297	296	296
benguela	108	376	268
capeverde	340	339	339
centralcalifornia	86	86	86
chesapeakebay	171	171	171
chinakoreajapan	318	1064	746
greatbarrierreef	291	290	290
gulfofmexico	116	116	116
indonesianwaters	578	578	578
karasea	244	244	244

2006	L1P	L2R	L2W
lakeseriestclair	121	121	121
lenadelta	346	346	346
medi_blacksea	1000	1000	1000
morocco	553	553	553
namibianwaters	167	167	167
northsea	1176	965	1041
oregon_washington	226	224	224
puertorico	139	139	139
redsea	483	482	479
riolaplata	265	863	598
southerncalifornia	138	438	436
southindia	320	320	320
tasmania	159	158	155
	8726	10420	9797

FTP access by users

- From 01. July to 16. October 2011
 - ~ 32 000 product downloads
 - ~ 6.4 TB downloaded
- Daily averages
 - 300 products
 - 60 GB

Summary

- CoastColour production is fully implemented
 - Large storage facility
 - Powerful production facility
 - Plug-In for algorithm updates
 - Validation dataset processing for assessment of impact of algorithm changes
- Product availability status (since May / June 2011)
 - L1P all years online on ftp
 - L2R and L2W demonstration available for champion users
- Production Plan
 - Processing of 2010 has started (childgen, Amorgos)
 - Reprocessing of L1P until early 2012
 - Production of final L2R and L2W until March 2012
 - All data available on ftp and via MERCI