



# Offline production status – RAW, MC and alike

ALICE Offline week  
October 29, 2009

# Production types

- MC production

- Requested by various physics working groups
- Different physics contents, generators, p+p, Pb+Pb
- Wildly different statistics needed (Muon holds the record)
- Well-established request and production protocol
- That is what we do since 2006
- And we keep the data since then still

# Production types (2)

- RAW data production

- Automatic and fast (to the extent possible)
- See Costin's presentation for the available tools
- The goal is to have the 'Pass 1' (@T0) ready few hours after the data was taken and transferred to MSS
- First physics publications next day

- Prerequisites

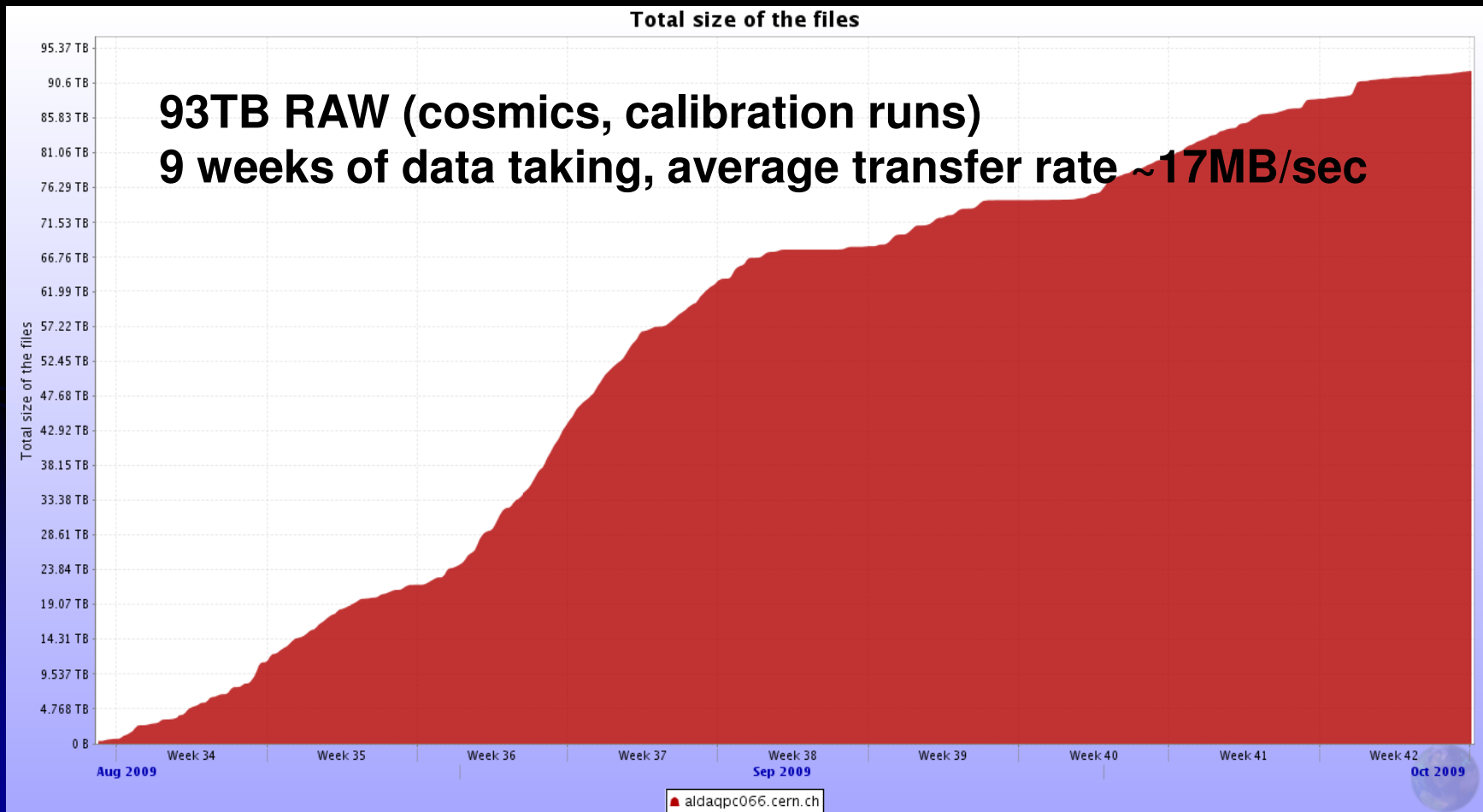
- The online calibration is 'good enough'
- Code is ready and adapted to the first physics conditions

# Production types (3)

- RAW data production – special runs (calibration/alignment)
  - On demand by detector groups
  - Special setting for reco allowed, as long as uniform across the run range to be reconstructed
- Prerequisites
  - Calibration and GRP

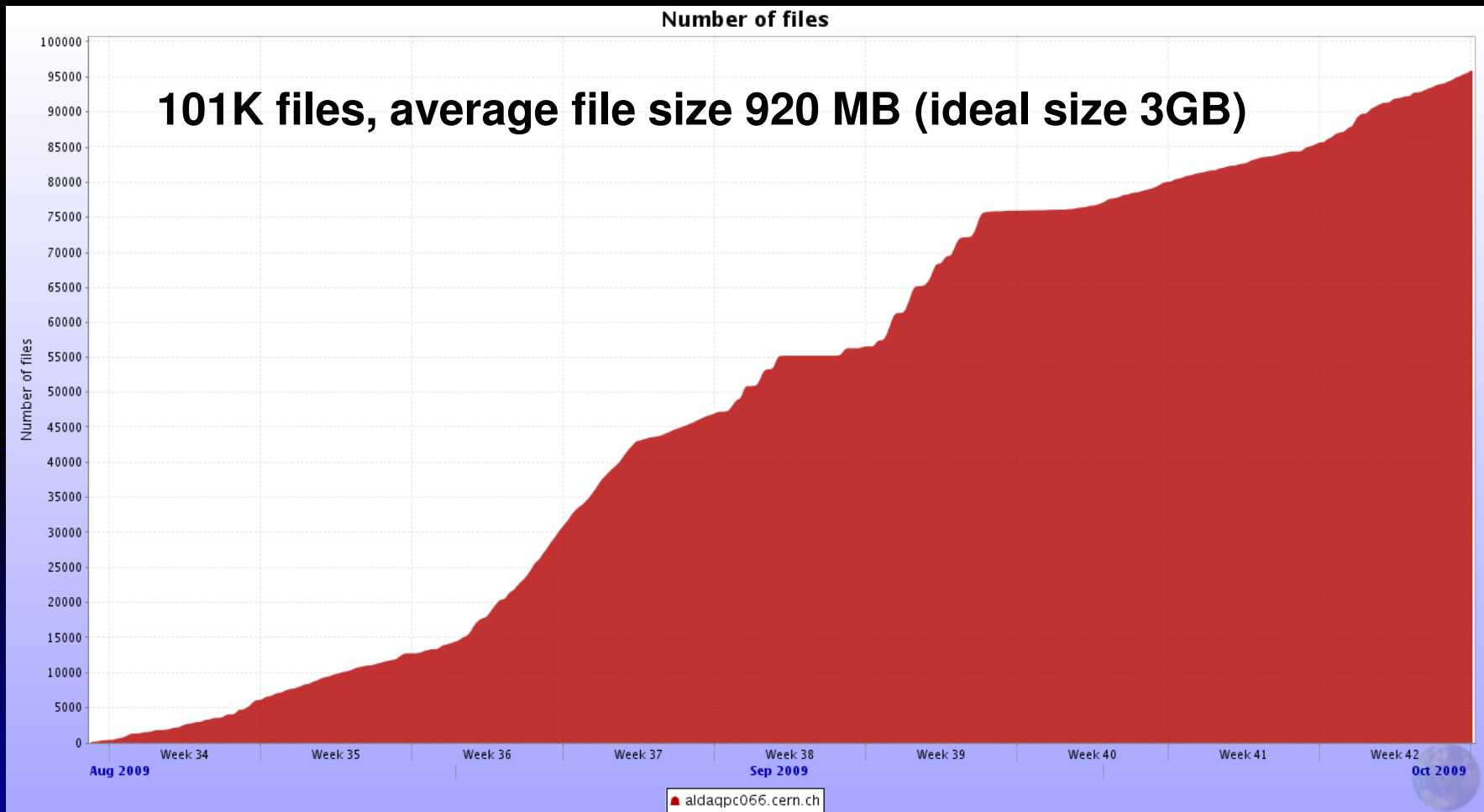
# RAW registration and volume

- In continuous data taking since 15 Aug



# Runs and files

- ~4900 runs, 1500 in global partition



# RAW data per detector

```
LHC09c
LHC09c_ACORDE
LHC09c_ADC
LHC09c_DAQ_TEST
LHC09c_EMCAL
LHC09c_FMD
LHC09c_HMPID
LHC09c_MUON_TRG
LHC09c_MUON_TRK
LHC09c_PHOS
LHC09c_PPD
LHC09c_SDD
LHC09c_SPD
LHC09c_SSD
LHC09c_T0
LHC09c_TOF
LHC09c_TPC
LHC09c_TRD
LHC09c_V0
LHC09c_ZDC
```

~60 TB in GLOBAL partition

From 0.01 TB to 30TB in detector-specific partitions (STANDALONE)

# Registration error rate

- Many thanks to **Roberto Divia** – full logs of all unsuccessful registration in AliEn and CASTOR
- Last month summary:
  - 42500 registered files total
  - 7 with permanent error => **0.016%**
- From these 4 are in CASTOR, but not in AliEn and can be added
  - Permanently lost files **0.007%** (well below the expected loss from MSS/Disk failures)






# RAW production cycles

Production	Description	Status	Run Range	Recorded chunks	Processed chunks	Comments
LHC09c_TRD	TRD Krypton calibration data LHC09c - Pass1	Running	85058 - 87402	24,043	20,240	TRD Krypton calibration data LHC09c - Pass1
LHC09c_FPD	First Physics Drill LHC09c - Pass1	Completed	90306 - 90544	268	210	First Physics Drill LHC09c - Pass1
LHC09a_MUON	Cosmics data LHC09a MUON - Pass1	Completed	67138 - 67686	175	165	Cosmics data LHC09a MUON - Pass1
LHC09c_TPC	TPC LASER data LHC09c_TPC - Pass1	Completed	79405 - 86231	493	333	TPC LASER data LHC09c_TPC - Pass1
LHC09c	Cosmics data LHC09c - Pass1	Technical stop	75535 - 94272	50,570	24,186	Cosmics data LHC09c - Pass1

## 5 cycles in 2009

- 4 detector calibration
- 1 Physics partition

# RAW production cycles – LHC09c

<a href="#">75545</a> 	5	4	80%	14.08.2009	LHC09b	v5-24-00	v4-17-Rev-04	/alice/data/2009/LHC09c/000075545/ESDs/pass1/
<a href="#">75542</a> 	3	2	66.7%	14.08.2009	LHC09b	v5-24-00	v4-17-Rev-04	/alice/data/2009/LHC09c/000075542/ESDs/pass1/
<a href="#">75535</a> 	1	1	100%	14.08.2009	LHC09b	v5-24-00	v4-17-Rev-04	/alice/data/2009/LHC09c/000075535/ESDs/pass1/
<b>TOTAL</b>	<b>50,570</b>	<b>24,186</b>	<b>47.8%</b>	<b>1,731 jobs</b>				

ROOT and AliRoot version

Run period (this one is GLOBAL)

Upon job completion – log files for all **failed** jobs

ESD location in AliEn

Direct link to DAQ logbook for this run

# Programme for RAW re-processing

- (mostly) all new calibrations are retrofitted in OCDB
- Run list of 'golden' and special requests run in preparation
- Old 'pass 1+x' (multiple AliRoot versions and calibrations) to be removed
  - Decreases confusion, but not the entropy
- New 'Pass 1' to start imminently

# Offline reconstruction - issues

- Memory consumption of jobs – up to 10GB (nominal 2GB)
  - **This is fixed for RAW**
- Bugs in reconstruction code causes system fails: apparent only in certain combination of detectors and detector status
  - Status will become apparent when the reco is retried

# Illustration of run (in)equality

<a href="#">79776</a>	96	84	87.5%	27.08.2009	LHC09c					
<a href="#">79775</a>	24	22	91.7%	27.08.2009	LHC09c					
<a href="#">79774</a>	162	121	74.7%	27.08.2009	LHC09c					
<a href="#">79769</a>	30	28	93.3%	27.08.2009	LHC09c					
<a href="#">79715</a>	8	8	100%	15.08.2009	LHC09c					
<a href="#">79712</a>	8	8	100%	15.08.2009	LHC09c					
<a href="#">79709</a>	8	8	100%	1	<a href="#">86938</a>	427	427	100%	26.10.2009	LHC09c_TRD
<a href="#">79705</a>	8	8	100%	1	<a href="#">86911</a>	493	493	100%	26.10.2009	LHC09c_TRD
<a href="#">79700</a>	8	8	100%	1	<a href="#">86832</a>	436	435	99.8%	26.10.2009	LHC09c_TRD
<a href="#">79695</a>	24	23	95.8%	1	<a href="#">86831</a>	417	412	98.8%	26.10.2009	LHC09c_TRD
<a href="#">79689</a>	8	8	100%	1	<a href="#">86830</a>	417	416	99.8%	26.10.2009	LHC09c_TRD
<a href="#">79687</a>	8	8	100%	1	<a href="#">86829</a>	412	411	99.8%	26.10.2009	LHC09c_TRD
<a href="#">79680</a>	8	8	100%	1	<a href="#">86828</a>	417	413	99%	26.10.2009	LHC09c_TRD
<a href="#">79660</a>	390	0	0%	2	<a href="#">86827</a>	409	406	99.3%	26.10.2009	LHC09c_TRD
<a href="#">79657</a>	208	0	0%	2	<a href="#">86818</a>	223	222	99.6%	26.10.2009	LHC09c_TRD
<a href="#">79636</a>	299	0	0%	2	<a href="#">86817</a>	414	410	99%	26.10.2009	LHC09c_TRD
					<a href="#">86580</a>	329	322	97.9%	26.10.2009	LHC09c_TRD
					<a href="#">86579</a>	417	411	98.6%	26.10.2009	LHC09c_TRD
					<a href="#">86578</a>	415	415	100%	26.10.2009	LHC09c_TRD
					<a href="#">86577</a>	415	411	99%	26.10.2009	LHC09c_TRD

# Summary

- The data processing has reached a reasonable level of maturity
  - MC is routine – well established procedures and checks
  - RAW is working, the results heavily depend on the data quality, some validation checks need improvements
- Production tools abound – these make the life of the production manager easier and allow 'lights off' operation under stable conditions
  - Not yet there...