

# **TDR: Conclusions from Review, Status and Plans**

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Computing  
Workshop

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# TDR Review

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We presented our answers to the questions on

- Software (T.Hara)
- Computing (TK)

on Monday May 24<sup>th</sup> to the TDR review committee.

- In general quite positive feedback
- Some discussion on priorities and time scale of framework development and full detector simulation needed for optimization studies
- We were encouraged to evaluate existing solutions and our own development plans in an unbiased way
- Concerns about manpower were raised

# Review Feedback

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## Framework

- Reviewers were pleased by the progress towards a common framework for all detector components
  - Some argued we should aim for a full simulation as soon as possible in order to get an optimal detector design
  - Some argued we should make sure the framework is well designed

## MC information data format

- We should check what is the state-of-the-art output format of generators

# Review Feedback

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## Raw Data

- ALICE lost some raw data because it was accidentally deleted
- We should think of concrete ways to avoid this
- Learn from other experiments

## WMS

- According to Pere Mato, DIRAC alone is not sufficient, we probably need something like Ganga on top of DIRAC.

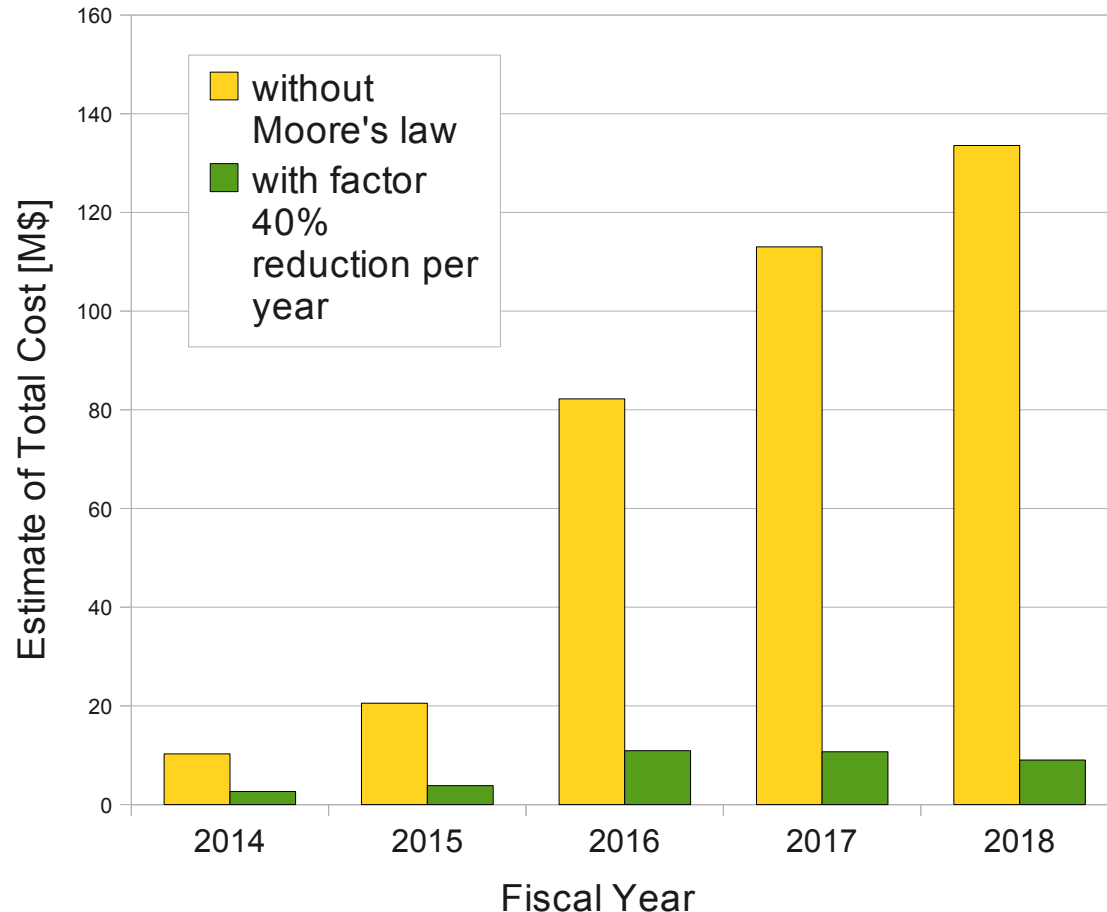
# Review Feedback

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## Cloud Computing / MC Production

- We say: Cloud Computing (currently) not attractive for jobs with large data transfer
- Background files for MC production could become large if PXD data is included
- We have to consider this

# Cost Estimate



- How does this compare to LHC experiments?
- Are we worried that we might be limited in physics output by computing?
- Valid concern

Large uncertainty in conversion of PB or kHepSPEC → \$

# DAQ Rate Estimates from Itoh-san

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Data flow estimation for various cases

	Worst I	Worst II	Modest I	Modest II
PXD size	1MB	1MB	0.5MB	0.5MB
other size	100kB	100kB	50kB	50kB
PXD reduction	1/5	1/10	1/5	1/10
PXD size aft.red.	200kB	100kB	100kB	50kB
Total event size	300kB	200kB	150kB	100kB
L1 rate	30kHz	30kHz	20kHz	20kHz
HLT reduction	1/5	1/5	1/5	1/5
Rate @ storage	6kHz	6kHz	4kHz	4kHz
BW @ storage	1.8GB/sec	1.2GB/sec	600MB/sec	400MB/sec

} close to  
"physics"  
rate

# Estimated Data Rates

Experiment	Rate [Hz]	Event Size [kB]	Rate [MB/s]
High rate scenario for Belle II DAQ			
Belle II	6,000	300	1,800
LCG TDR (2005)			
ALICE (HI)	100	12,500	1,250
ALICE (pp)	100	1,000	100
ATLAS	200	1,600	320
CMS	150	1,500	225
LHCb	2,000	25	50



# TDR Schedule

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- TDR Review May 21-24
- Review report expected end of June
- Update TDR based on feedback from external and internal reviewers until June 20<sup>th</sup>
- Take into account review report
- Publish TDR in July

# TDR todo

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- ✓ Update motivation for distributed system
- Comment on raw data backup?
- Define the term “ntuple”
- ✓ State we want to go for pilot model
- Update cloud computing section?
- Update framework section?
- ✓ Describe plans for software installation
- ✓ Mention supported platforms, policy on third party software
- Comment on software development methods

# TDR todo

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- Fix Evtgen initial author
- ✓ Explain same mDST MC/data, DST/raw size
- ✓ Fix resource estimate for analysis
- ✓ Make event size and event rate consistent with DAQ
- ✓ Comment on HepSPEC/event numbers for DST/MC prod.
- ✓ Give example of HepSPEC number of a typical PC
- ✓ Reduce number of significant digits in tables
- Add schedule for simulation software?

# TDR todo

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- Make sure we addressed the comments from Katayama-san
- Check changes for consistency  
→ chapter / section editors / reviewers
- Proof reading of changes
- Sync Computing and General TDR
- ◆ Changes wrt. version 1.0 of TDR:  
`svn diff -r 327`

# Further todo

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- Estimate required FTEs and skills,
  - Check against available human resources
- Think about working groups with members from computing, detector, and physics groups