



Collaborative Tools (CT) and the Management of Large Experiments

Shaping Collaboration 2006
11-13.12.2006, GICG Geneva

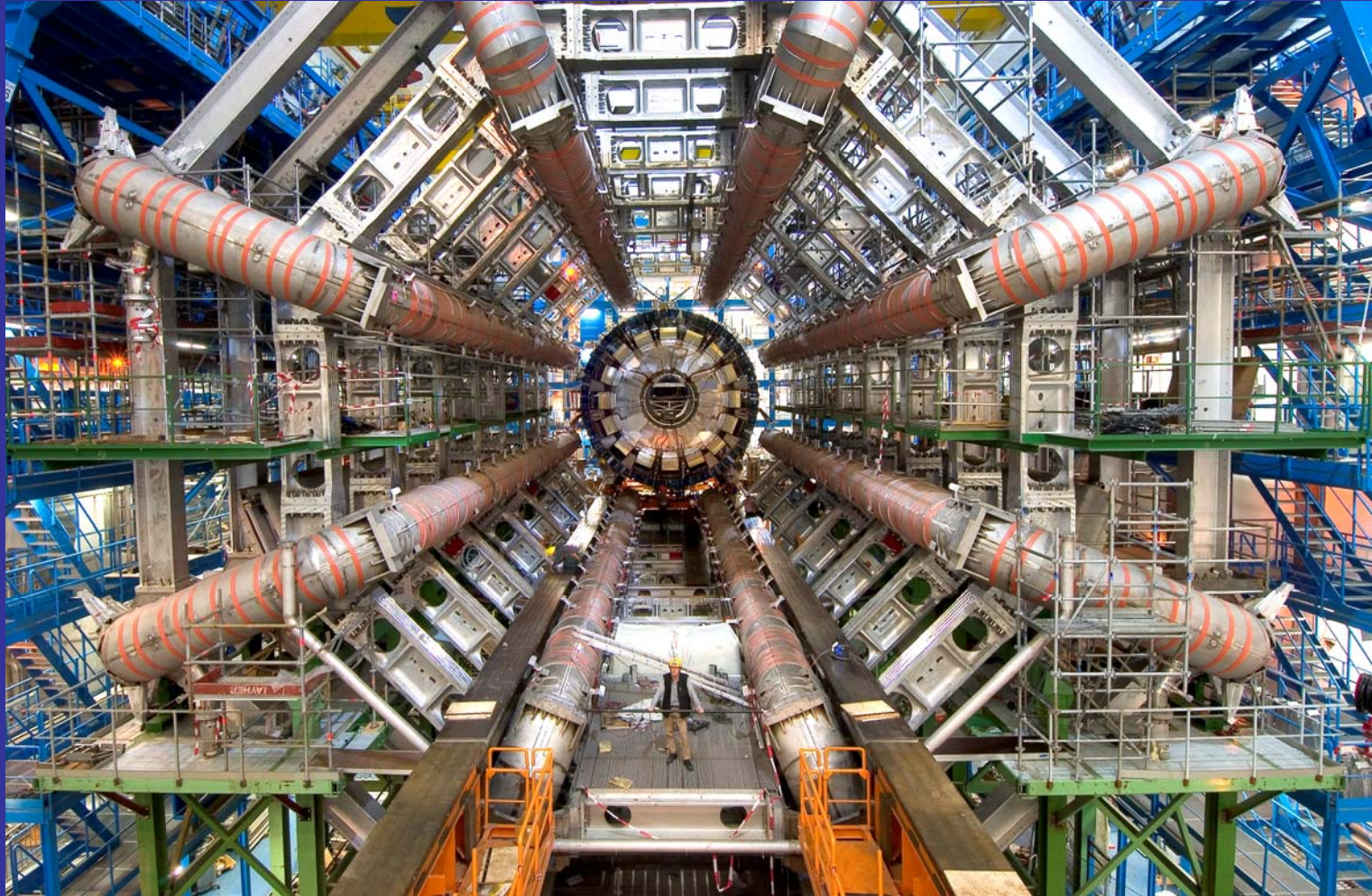
Markus Nordberg
ATLAS Resources Coordination
Special thanks to Thomas Baron, CERN-IT

Personal Disclaimer



- I'm the Money Man in the ATLAS Project at CERN
 - I'm less known as a leading CT expert
 - But I'm an expert in paying all (CT) bills related to ATLAS
- The Organizers asked me to share my personal observations and views about the use of CT in a scientific environment such as ATLAS
- An excellent summary of CT within the LHC/ATLAS context ▪ can be found here (Steve)
 - <http://cern.ch/muondoc/rtag12/Report/RTAG12-Report.doc>

ATLAS Experiment at CERN

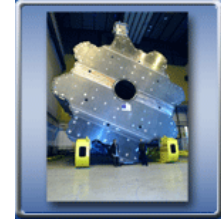




ATLAS Collaboration



The Sun Never Sets in ATLAS

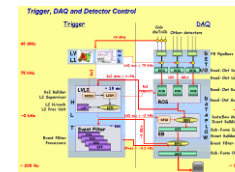


Managerial Aspects of ATLAS



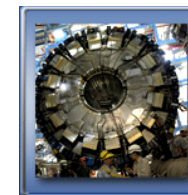
- ATLAS is a large, global (decentralized) collaboration
 - 1400 PhD physicists and engineers
 - 300 students
 - 35 countries
 - 164 institutions
- Ca 540 MCHF construction capital, 22 MCHF M&O per year => similar to running a high-tech process plant?
- Central meeting point is obviously CERN
 - But it does not mean all 1700 ATLAS members are at CERN all of the time (could not even handle that!)
 - 20% at CERN need to communicate with the 80% outside (Steinar)

Collaborative Tools Today at CERN (1)



- Videoconferencing
 - 18 rooms, 8 new planned for equipping
 - Most rooms for ca. 20 participants, < 10 for 200 persons
 - Occupancy level (hours) ~ 80%
 - A videoconference room typically needs:
 - Large screens (one for video stream out, one for video in)
 - Video projector(s)
 - Central PC unit, console
 - Cameras, microphones (lots of them)
 - Selection of appropriate materials (carpets, curtains, lighting)
 - Technology:
 - Video signal + carrying + mixing
 - Good IP connection, power plug
 - PBX as bridge, SIP as communication protocol (IP)
 - SIP license
 - VRVS -> EVO; 2 servers (Philippe)
 - Cost: ca. 70 kCHF per std room + 30 kCHF for infra (excl. people)
 - Manpower ca 2-3 FTE's for all CERN

Collaborative Tools Today at CERN (2)



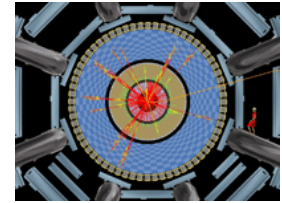
- Video archiving/Web lecturing (Jeremy)
 - Tutorials
 - ATLAS Plenary talks
 - < 10 recorded events per year
- Cost ca 10 kCHF equipment & recording media, 0.5 FTE manpower for ATLAS
- So how much does this all cost??
 - Assume
 - Very basic services
 - Basic (telephony) infrastructure is there
 - Amortization over 3 years
 - Standard room for 20 persons, 80% occupancy
 - 1 FTE ~ 120 kCHF(per 6 rooms)
 - ~ 3 kCHF per participant per year => if more than 3 (video) meetings (of 20 people) per year, more effective than flying?
- Well, why aren't we all then participating to this event by video?
 - Hard do reach to strangers or address unfamiliar/complex issues
 - Still difficult to get different standards to work across different platforms in a reliable and easy manner
 - It's fun to travel (at least now and then)

Will it ever get any better (cheaper)? ▀



- Yes, it will - already has
 - More vendors
 - Better technology integration
 - More pedagogical approaches
 - One size does not fit all
 - Teaching/lecturing/training (Joseph)
 - Problem solving (e.g. skunk works, brainstorming)
 - Operation (e.g. remote control & maintenance, debriefing; Roberto)
 - Telecommunication costs/bandwidth is no longer the fun spoiler (anybody remember ISDN?)
- But we ain't there yet, folks
 - We have to change/improve our working habits further - beating the distance (Hiroshi, Airong)
 - Fight Aunt Maude's Law - whatever you use today, in 18 months time you'll use it at least twice as rarely (unless it's really really simple to use)

Conclusions



- A large (global) collaborative effort needs collaborative tools
- The economics of collaborative tools makes sense (in the CERN environment at least)
 - This is not about making huge investments
- Collaborative tools should become part of daily routines in order to be really effective
 - Remember Maude's Law
- We are getting there but need to change the way we work