

# **CMS Spokesperson elections**

Meeting with US-CMS from FNAL  
January 27, 2011

Thank you !

# The CMS elections

- We must keep the high standards of scientific conduct
- We have the opportunity and responsibility to raise the bar in all aspects of the conduct of the collaboration including elections.
  - Elections among friends
- We have an urgent scientific program.
- Discussions in the open , comparing the merits of the candidates
  - Albert and Joe are great candidates

# Outline

- The role of the CMS spokesperson
- The next three years
- My profile
- My contribution to CMS
- Conclusions

# The role of the CMS spoke

- CMS is one of the world's largest most sophisticated scientific instruments ever constructed. The CMS Collaboration is one of the largest and most international scientific collaborations in history. CMS will be producing scientific result for at least a quarter of a century. The highest standards are expected of us.
- The spoke consults and proposes scientific and technical programs and builds the consensus of the Collaboration around them. He/she and his/her team direct the execution of these programs sharing with the Collaboration the responsibility of the success.
- However spoke is a unique position: setting the overall tone of the collaboration and ultimately responsible if it is not successful. Spoke is responsible for organizing and overseeing progress, operation, policies and plans of the collaboration and representing the collaboration to CERN, review bodies, funding agencies, and other interested parties outside CMS.

# The main CMS objectives from now to the end of 2013

- Scientific: Physics Production and Discoveries in 2011/2012 run and preparation for the 2014 run
- Technical consolidation and the future of CMS: the 2013 shutdown and the upgrade
- Improvements in the organization of the Collaboration

# Physics Production and Discoveries(1)

- The LHC and CMS performed very well in 2010 and this has opened up the possibility to target the discovery of new physics as the major goal of the 2011/2012 run.
- Higgs
- BSM Physics
- Top Physics

# Physics Production and Discoveries(2)

- And we must pay attention to the other areas of physics accessible with CMS data – for example Heavy Ions – so that they do not suffer too much from the priority given to discovery physics at the high energy frontier.
- Based on the knowledge acquired with the study of the 2011/2012 sample we must prepare CMS for the run in 2014 when the center of mass energy will be doubled. This will be a new mine of discoveries that we must be prepared to dig well.

## Efficient data taking and data reconstruction for good physics production

- CMS took high quality data in 2010 with very high efficiency. In 2011 and 2012 we must keep the same very high standard of data taking, data quality and data validation and preparation that we had in 2010.
- The challenge is large because we are now hitting limits with resources in bandwidth and HLT computing power. The large pile-up will have a great impact on the computing resources.

# Efficient data taking and data reconstruction for good physics production

- We have to use the 2013 shutdown as a window of opportunity to make large improvements to our software.

# Technical consolidation and the future of the CMS detector (1)

- We are producing high quality data. We want to continue to produce high quality data for the next 25 years and this needs high and constant action on the detector.
- still to go for factor 100 increase in the the rate and about 10.000 in the radiation dose seen by our detector.
  - Can we cope with lumi related effects (eg: spikes) ?
  - Will the tracker survive the radiation dose in spite of the cooling problems?
  - Will forward calorimetry be ok at high luminosity ?
- **Attention, forward planning, consolidation and improvement are the key words for keeping the high quality performance of the CMS detector.**

# Technical consolidation and the future of CMS (2)

- And for that we must keep our community of hardware experts close and attentive to the detector, proposing what is needed to consolidate it depending on its performance while the luminosity and the dose increase. (We must also keep analysis experts involved in this process).
- This is possible because we have a thorough upscope/upgrade program that spans the next decade and is needed to keep CMS at top performance levels. In the next three years we have to go through the approval and funding of this program.
- In the next three years CMS will have to face an important decision: when is the last moment we can decide on the tracker design ? How are we going to decide ? This issue of synchronization with ATLAS makes it more difficult. We have to prepare carefully.

# Improvements in the organization of the Collaboration

CMS is doing well, but there are areas where there is always room to improve.

- How can we improve the way CMS works?
- How can we best communicate in a large Collaboration ?
- How can we best communicate outside the Collaboration?
- How can we better recognize the contribution to CMS of Institutions and people?
- How to prepare the leadership of the future for the 2014 Run and beyond ?

# The Business Model

- CMS went recently through the transition from the construction phase to the exploitation phase. Based on the experience of these first years we have to produce a Business Model that makes CMS run and consolidation sustainable in the next 25 years (\*\*).
- There is ongoing discussion in the Collaboration already now, we have to see how it evolves in 2011.
- I see this still as a period of transition and I think we need to set a goal of the start of the 2014 run for having a consolidated business model in place. This should be studied as a medium term plan. Something that I think can work well in the large Collaboration is a system based on institutional responsibility agreed with formal MOUs for a given period of time. We should start testing this model in selected areas.

(\*\*) the upgrade correctly funded as a project

# Communication inside the Collaboration - Engagement

- Support the CMS analysis school (DAS) in all regions in order to involve more and more people in data analysis
- The importance of regional centers. Importance of aggregations like LPC. (and always in synch with CMS)
- Working to make CERN and ever more hospitable place for visitors.
- Working to make CMS ever more accessible for those remote from CERN and spread around the globe, through modern collaborative tools, learn from industry.
- Institute daily news summaries of the key news of the day
- Schedule short EVO regular meeting of the spoke or deputies with local communities : say ~ 10 people attending for an ½ h meeting every month. Mainly – but non only - targeted to CMS regions that are far from the center of CMS.

## How can we recognize the work and the investment of resources of institutions and also of individuals in CMS ?

- We have a number of CMS awards to recognize individuals and we assign formal positions to individuals (e.g. convener of the muon pog of the reconstruction). In addition we have other official and more short lived actions done by individuals (eg: ARC member, reviewer of notes, member of internal technical committees, field coordinators ). This information is not easily accessible for a CMS member and impossible to access for a non CMS member.

# Annual Report

- I propose that each year in the first six months CMS produces an Annual Report of the previous year to be endorsed by the Collaboration Board in the month of June.
- This Annual Report should contain the official records but also few (2-3) pages reports written by each member of the Executive Board (managers/coordinators) and possibly some 1-2 pages reports from each institution (or groups of institutions when appropriate) summarizing the contribution of each institution to the project. This thick book is a non negligible investments of resources and should be carefully designed in scope. I feel that it can be very useful vis a vis the Funding Agencies and also for the public. It can be a precious reference for the contributions of individuals when they are sufficiently outstanding that they are reported. In particular for career development of young people.

# My Profile (1)

- Large experience in scientific management
  - 10 years in upper management : ALEPH spoke / CMS Tracker P.M. / CMS Physics Coordinator
  - Member of many review bodies . DESY PRC chair
  - Very good relations with the CERN directorate
- Large experience in Physics
  - Editor of JHEP and PLB
  - ALEPH Physics Coordinator at startup
  - CMS Physics Coordinator at startup

# My Profile (2)

- Large Hardware experience
  - Aleph TPC
  - CMS Tracker
  - LEP Energy calibration
  - ALEPH Minivertex upgrade

# My profile (3)

- Friendly management style
  - Know how to delegate (Tracker SC, Physics Office)
  - No Micromanagement
  - talk to people/ solicit input/ seek advice
- Discuss openly
  - Physics Program, conveners nominations
- Involve people
  - Calls for ARCs, request of help for the review

# My contributions to CMS

- Tracker
  - Approval of the ALL “Silicon Tracker”, set up of all production centers for the 16000 silicon strip modules
- Publication Committee
  - definition of the approval process, CADI, CRAFT-Papers
- Physics Coordination
  - 26 papers so far - (ATLAS 14)
  - (~ 40 in the pipeline)

# Conclusion

- **The success of CMS is the success of all of us**
  - This should drive the choice for the spokesperson
  - In a friendly way
- If you want to talk more, please contact me at [gigi.rolandi@cern.ch](mailto:gigi.rolandi@cern.ch) to fix a time for a (video) discussion with you or with your group.