

The US CMS Constitution

The US CMS Collaboration consists of a set of physicists from many groups at universities and national laboratories which are committed to doing physics at the Compact Muon Solenoid (CMS) detector at the large hadron Collider (LHC) located at CERN. The project aspects of this Collaboration are set forth in the US CMS Project Management Plan (PMP), current draft - August, 1997. This document defines the governance of the US CMS scientific Collaboration.

1. Membership

All US members of the CMS Collaboration are members of the US CMS Collaboration. Institutions which have applied for CMS membership but have not yet been accepted or rejected shall be non-voting members of the US CMS Collaboration. (The US CMS institutions are shown in Table A-1 and members are listed in Table A-2.) Procedures for becoming a member of CMS are described in the CMS Constitution.

2. CMS Organization

The CMS governance is described in the CMS Constitution - CMS Constitution, Sept. 13, 1996. The executive body of CMS is the management Board, shown in Fig. A-1. Technical issues are the province of the CMS Technical Board, Fig. A-2. Financial aspects of CMS are handled by the CMS Finance Board - Fig. A-3.

The subsystems of CMS are shown in a schematic of the detector given in Fig. A-4. As is evident from the CMS MB structure, the subsystems of CMS are organized as distinct subprojects. Each subproject has an Institutional Board (IB) Chair, a Project Manager, and a Resource Manager. The subproject organization for Muons, HCAL, TRIDAS, ECAL, Tracking, Software, and the Magnet are shown in Figs. A-5 through A-11 respectively.

As can be seen from Figs. A-1 through A-11, US CMS physicists have positions of authority within CMS. A list of the US CMS groups participating in the CMS subsystems is given in Table A-3. The governance of the US CMS Collaboration has been patterned on that of CMS, with differences arising as required by the dictates of project management in the US.

3. Collaboration Board

The US CMS Collaboration Board is the governing body and highest authority of the US CMS Collaboration. The Collaboration Board is composed of one representative from each US institution that is a member of the CMS Collaboration. An Institutional Representative is chosen by each US CMS institution. The US CMS Spokesperson is elected by the board, and serves as the US representative on the CMS Management Board. Collaboration Board decisions are reached by consensus whenever possible. In the event a consensus cannot be reached, matters are decided by a majority vote of the members. (The US CMS Collaboration Board members are indicated in the listing in Table A-1.)

Chair

The US CMS Spokesperson serves as the Chair of the US CMS CB.

Meetings

The US CMS Collaboration Board shall hold at least one meeting per year. Presently, the annual meeting and election of officers is held in the spring (April), and a second meeting is held in the fall before the annual budget submission. Other meetings may be called as necessary by the Spokesperson, or by 25% of the Collaboration Board members. Collaboration Board meetings will be open to all US CMS members, but only the Institution Representative or designee may vote.

Minutes of all US CMS Collaboration Board meetings shall be provided by the US CMS Spokesperson. The minutes shall be submitted for approval at the next subsequent Collaboration Board meeting, and shall be publicly available to all US CMS Collaboration members.

Voting

Each US CMS Institution shall have one vote, to be cast by the Institutional Representative or designee. The Institutional Representative may designate another CMS member from the same institution as that institution's voting representative.

Elections

Nominations for US CMS elective offices may be made by any US CMS member, and must be seconded by a member of the Collaboration Board. The

US CMS Project Manager shall supervise the election of the US CMS Spokesperson. The US CMS Spokesperson shall supervise the recommendation of the US CMS Project Manager to DOE and NSF and Fermilab for appointment by them. Elections shall be conducted by e-mail ballot, with the majority of votes of all US CMS institutions being required for election. In the event no candidate receives a majority vote on the first ballot, a runoff between the two candidates receiving the largest number of votes shall be conducted.

Elective Offices

The US CMS elective offices are the US CMS Spokesperson and the chairs of the respective institution boards of the EMU, HCAL, TRIDAS, ECAL, Tracking, Physics, Software, and Education. The IB for Physics and Education is, by definition, the full CB. The term of these offices shall be two years, with the possibility of renewal. In the event of a vacancy in an elective office, a special election to fill the unexpired term shall be conducted.

Responsibilities

The US CMS CB shall vote on the addition of new groups to the US CMS Collaboration. The allocation and distribution of speakers at scientific conferences and meetings is also the province of the CB. The distinct IB subsets of the CB are responsible for the election of the members of the US CMS Executive Board (defined below).

Appointed Offices

The US CMS appointed offices are relevant to the project aspects of US CMS and are explained in detail in the US CMS PMP. They begin with the Project Manager (PM). The nominee is provided by US CMS and recommended to DOE, NSF and Fermilab. The PM is subsequently appointed by DOE, NSF and Fermilab. In turn, the PM appoints a Deputy PM and Level 2 managers for the WBS categories of EMU, HCAL, TRIDAS, ECAL, Tracking, and Common Projects. The full project structure is given in the US CMS PMP.

Competence

Should serious problems arise concerning the performance of any member of the US CMS Executive Board, the recommendation for change shall be brought by the US CMS Spokesperson. A recommendation for change of the Spokesperson would be brought by the US CMS PM. A

recommendation for change will require a 2/3 majority of the members of the US CMS Collaboration Board. Appointees can only be removed by the appointers; the PM, in the case of L2 managers, and DOE, NSF, or Fermilab in the case of the PM.

4. Executive Board

The US CMS Executive Board is the executive body of the collaboration. All major decisions of the US CMS Executive Board will be submitted to the US CMS Collaboration Board for ratification. The Executive Board is composed of the US CMS Spokesperson and of an elected representative from Physics, Education, Software, EMU, HCAL, TRIDAS, ECAL and Tracking institution boards. The organization and present members of the US CMS Executive Board are shown in Fig. A-12.

Minutes of all US CMS Executive Board meetings shall be provided by the US Spokesperson. The minutes shall be submitted for approval at the next subsequent Executive Board meeting, and shall be publicly available to all US CMS Collaboration members. The Executive Board, with its elected subsystem leaders, serves as the interface between the Project Management and the Collaboration.

Spokesperson

The responsibility for the scientific direction of US CMS rests with the US CMS EB and in the EB Chair, the US CMS Spokesperson. During the course of construction of CMS, when issues of the scientific goals of US CMS arise, they will be brought to the EB by the PM for consultation. As US CMS matures as an experiment, the EB will continue to exercise the scientific direction of US CMS.

Coordination of the Project and the Collaboration

Joint meetings of the US CMS Project (i.e. PM + L2 Managers) and the Executive Board will be regularly held so as to insure good communication between the US CMS Collaboration and the Project Management. The US CMS EB is responsible for the scientific aspects of the US CMS Collaboration, while the US CMS Project is responsible for the financial and technical aspects of the construction of the US CMS detector elements.

L2 Managers

The L2 managers are appointed by the PM, upon the recommendation of the relevant subsystem IB. The L2 managers correspond to the L2 categories

in the WBS; EMU, HCAL, TRIDAS, ECAL, Tracking, Common Projects. In the case of Common Projects there is no IB, and the L2 manager is directly appointed by the PM. A L2 manager can be removed at any time by the PM after consultation with the US CMS EB.

US Subsystem Representatives

Each of the eight US Institutional Boards (Physics, Education, Endcap Muon, Hadron Calorimeter, Trigger/Data Acquisition, Electromagnetic Calorimeter, Tracking, and Software) shall biannually elect a representative to the US CMS Executive Board. The Institution Board is to be composed of one representative from each US CMS institution that is participating in the corresponding area (see Table A-3). The elections will be organized by the Spokesperson acting as Chair of the Executive Board, and will require the majority of the votes cast by the subsystem Institution Board for election. In the event no candidate receives a majority of the votes cast on the first ballot, a runoff between the two candidates receiving the largest number of votes shall be conducted. In the event of a tie, the deciding vote shall be cast by the US CMS Spokesperson.

5. Ratification and Amendments

This constitution shall be ratified by the majority vote of the US CMS CB. Subsequent amendments may become necessary as the experiment evolves toward execution beginning in 2005. These amendments can be proposed by any member of the US CMS CB, and shall be voted upon. A majority vote is required for adoption of an amendment.

Table A-1 US CMS Collaboration Contact Persons

| US CMS Collaboration | |
|---|---------------------------|
| Spokesperson: D. Reeder | Project Manager: D. Green |
| Institution | Contact Person |
| University of Alabama | L. Baksay |
| Boston University | L. Sulak |
| Brookhaven National Laboratory | C. Woody |
| University of California, Davis | W. Ko |
| University of California, Los Angeles | K. Arisaka |
| University of California, Riverside | J. G. Layter |
| University of California, San Diego | J. G. Branson |
| California Institute of Technology | H. Newman |
| Carnegie Mellon University | T. Ferguson |
| Fairfield University | D. Winn |
| Fermi National Accelerator Laboratory | D. Green |
| University of Florida | G. Mitselmakher |
| Florida State University | V. Hagopian |
| Florida State University (SCRI) | M. Corden |
| University of Illinois at Chicago | M. Adams |
| University of Iowa | Y. Onel |
| Iowa State University | E. W. Anderson |
| Johns Hopkins University | C. Y. Chien |
| Lawrence Livermore National Laboratory | C. Wuest |
| Los Alamos National Laboratory | H. J. Ziock |
| University of Maryland | A. Skuja |
| Massachusetts Institute of Technology | P. Sphicas |
| University of Minnesota | R. Rusack |
| University of Mississippi | J. Reidy |
| University of Nebraska | G. R. Snow |
| State University of New York at Stony Brook | M. Baarmand |
| Northeastern University | S. Reucroft |
| Northwestern University | B. Gobbi |
| University of Notre Dame | R. Ruchti |
| Ohio State University | T. Y. Ling |
| Princeton University | P. Piroue |
| Purdue University | V. E. Barnes |
| Rice University | D. L. Adams |
| University of Rochester | A. Bodek |
| University of Texas at Dallas | E. J. Fenyves |
| Texas Tech University | R. Wigmans |
| Virginia Polytechnic Institute and State University | L. W. Mo |
| University of Wisconsin | W. H. Smith |

Table A-2: US CMS Institutions and Members

University of Alabama

L. Baksay*, B. Rouchouse, G. Zilizi

Boston University

E. Booth, R. Carey, S. Doulas, E. Hazen, O.C. Johnson, F. Krienen, J. Miller, D. Osborne, B.L. Roberts, J. Rohlf, A. Rosowsky, L. Sulak*, J. Sullivan, W. Worstell

Brookhaven National Laboratory

J. Kierstead, P. Levy, S. Stoll, C. Woody*

University of California, Davis

R. Breedon, Y. Fisyak, G. Grim, B. Holbrook, W. Ko*, R. Lander, S. Mani, D. Pellett, J. Rowe, J. Smith

University of California, Los Angeles

K. Arisaka*, Y. Bonushkin, F. Chase, D. Cline, S. Erhan, J. Hauser, J. Kubic, M. Lindgren, R. Ojha, S. Otwinowski, P. Schlein, Y. Shi, X. Zeng, J. Zweizig

University of California, Riverside

D. Chrisman, J.W. Gary, P. Giacomelli, W. Gorn, J.G. Layter*, B.C. Shen

University of California, San Diego

J.G. Branson*, I. Fisk, H. Kobrak, G. Masek, M. Mojaver, H. Paar, G. Raven, M. Sivertz, R. Swanson, A. White

California Institute of Technology

J. Hanson, A. Kirkby, W. Lu, R. Mount, H. Newman*, S. Shevchenko, A. Shvorob, R. Zhu

Carnegie Mellon University

R. Edelstein, A. Engler, T. Ferguson*, R. Kraemer, M. Procaro, J. Russ, R. Sutton, H. Vogel

Fairfield University

C.P. Beetz, S. Hellerman, J. Iosifidis, P. McLoughlin, V. Podrasky, M. Saganich, C. Sanzeni, H. Silvestri, T. Toohig, D. Winn*

Fermi National Accelerator Laboratory

M. Atac, E. Barsotti, A. Baumbaugh, U. Baur, A. Beretvas, M. Bowden, J. Butler, A. Byon-Wagner, I. Churin, D. Denisov, M. Diesburg, D.P. Eartly, J.E. Elias, J. Freeman, I. Gaines, H. Glass, S. Gourlay, D. Green*, J. Hanlon, R. Harris, W. Knopf, S. Kwan, M. Lamm, S. Lammel, P. Mantsch, J. Marafino, C.S. Mishra, N. Mokhov, J. Ozelis, A. Para, J. Patrick, A. Pla-Dalmau, R. Raja, A. Ronzhin, T. Sager, M. Shea, R.P. Smith, R. Vidal, D. Walsh, R. Wands, E. Wilmsen, W.J. Womersley, W. Wu, A. Yagil

University of Florida

P. Avery, R. Field, J. Konigsberg, A. Korytov, G. Mitselmakher*†, A. Nomerotski, P. Ramond, J. Yelton

Florida State University

H. Baer, M. Bertoldi, V. Hagopian*, K.F. Johnson, J. Thomaston, H. Wahl

Florida State University (SCRI)

M. Corden*, C. Georgiopoulos, K. Hays, T. Huehn, S. Youssef

University of Illinois at Chicago

M. Adams*, M. Chung, H. Goldberg, J. Solomon

University of Iowa

N. Akchurin, M. Aykac, M. Kaya, E. McCliment, J. McPherson, M. Miller, Y. Onel*, E. Ozel, S. Ozkorucuklu, L. Pasquali, P. Pogodin, E. Ruth, R. Winsor

Iowa State University

E.W. Anderson*, J. Hauptman, J. Wightman

Johns Hopkins University

B. Barnett, C.Y. Chien*, M. Frautschi, D. Gerdes, G. Hu, A. Pevsner

Lawrence Livermore National Laboratory

D. Klem, M. Kreisler, X. Shi, K. van Bibber, T. Wenaus, D. Wright, C. Wuest*

Los Alamos National Laboratory

R. Barber, Z. Chen, W. Christensen, S. Han, J. Hanlon, C. Johnson, R. Michaud, G. Mills, A. Palounek, B. Rodriguez, T. Thompson, K. Woloshun, H.J. Ziock*

University of Maryland

A. Baden, A. Ball, R. Bard, S.C. Eno, D. Fong, N.J. Hadley, R.G. Kellogg, S. Kunori, M. Murbach, A. Skuja*

Massachusetts Institute of Technology

G. Bauer, J. Friedman, E. Hafen, S. Pavlon, L. Rosenson, P. Sphicas*,
S. Sumorok, S. Tether

University of Minnesota

P. Border, D. Ciampa, P. Cushman, K. Heller, M. Marshak, R. Rusack*,
C. Timmermans, J. Wilcox

University of Mississippi

K. Bhatt, B. Bolen, M. Booke, D. Craig, L. Cremaldi, R. Kroeger, J. Reidy*,
D. Sanders, D. Summers, Y. Yuan

University of Nebraska

W. Campbell, M. Hu, G.R. Snow*

State University of New York at Stony Brook

M. Baarmand*, R. Engelmann, S. Feher, K.K. Ng, J. Steffens, S-Y. Yoon

Northeastern University

G. Alverson, H. Fenker, J. Moromisato, S. Reucroft*, D. Ruuska, J. Swain,
L. Taylor, E. von Goeler, T. Yasuda

Northwestern University

B. Gobbi*, P. Rubinov, R. Tilden

University of Notre Dame

B. Baumbaugh, J.M. Bishop, N. Biswas, J. Marchant, R. Ruchti*, J. Warchol,
M. Wayne

Ohio State University

D. Acosta, B. Bylsma, L.S. Durkin, D. Fisher, J. Hoftiezer, R. Hughes,
M. Johnson, D. Larson, P. Lennous, T.Y. Ling*, C.J. Rush, V. Sehgal, B. Winer

Princeton University

C. Bopp, P. Denes, V. Gupta, D. Marlow, P. Piroue*, D. Stickland, H. Stone,
C. Tully, R. Wixted

Purdue University

V.E. Barnes*, G. Bolla, D. Bortoletto, A. Bujak, D.D. Carmony, M. Fahling,
A. Garfinkel, L. Gutay, A.T. Lassanen, S. Medved, Q. Shen

Rice University

D.L. Adams*, M. Corcoran, G. Eppley, H.E. Miettinen, P. Padley, E. Platner,
J. Roberts, P. Yepes

University of Rochester

A. Bodek*, H. Budd, P. de Barbaro, W. Sakumoto, E. Skup

University of Texas at Dallas

R.C. Chaney, E.J. Fenyves*, H.D. Hammack, N.P. Johnson, D.J. Suson

Texas Tech University

O. Ganel, V. Papadimitriou, A. Sill, R. Wigmans*

Virginia Polytechnic Institute and State University

K. Blankenship, B. Lu, L.W. Mo*, T.A. Nunamaker

University of Wisconsin

T. Alexopoulos, W. Badgett, D. Carlsmith, S. Dasu, A. Erwin, F. Feyzi,
C. Foudas, M. Jaworski, J. Lackey, R. Loveless, S. Lusin, D. Reeder,
W.H. Smith*, M. Thompson

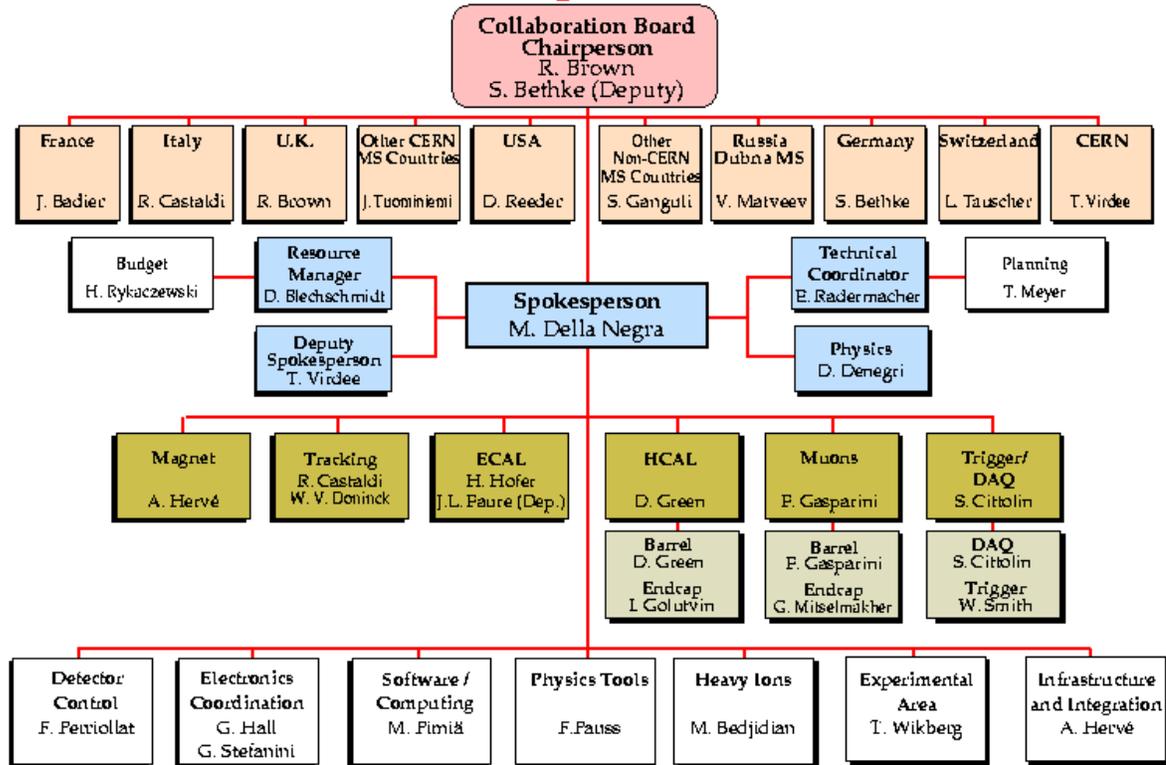
* Institutional Representative

† Joint Appointment with Fermilab

Table A-3: US CMS Subsystem Participation.

| Endcap Muon | Hadron Calorimeter | Trigger/DAQ |
|------------------------------------|---------------------------|----------------------|
| Alabama | Boston | UC Davis |
| UC Davis | UCLA | UCLA |
| UCLA | Fairfield | UC San Diego |
| UC Riverside | Fermilab | Fermilab |
| Carnegie Mellon | Florida State | Iowa |
| Fermilab | Illinois Chicago | Iowa State |
| Florida | Iowa | MIT |
| Livermore | Iowa State | Mississippi |
| SUNY Stony Brook | Maryland | Nebraska |
| Northeastern | Minnesota | Northeastern |
| Ohio State | Mississippi | Ohio State |
| Purdue | Notre Dame | Rice |
| Rice | Purdue | Wisconsin |
| UT Dallas | Rochester | |
| Wisconsin | Texas Tech | |
| | Virginia Tech | |
| Electromagnetic Calorimeter | Tracking | Software |
| Brookhaven | UC Davis | UC Davis |
| Caltech | Fermilab | UCLA |
| Fermilab | Florida State (SCRI) | UC Riverside |
| Livermore | Johns Hopkins | UC San Diego |
| Minnesota | Livermore | Caltech |
| Northeastern | Los Alamos | Carnegie Mellon |
| Princeton | Mississippi | Fermilab |
| | Northwestern | Florida |
| | Purdue | Florida State (SCRI) |
| | Rice | Johns Hopkins |
| | Texas Tech | Livermore |
| | | Maryland |
| | | Missesota |
| | | SUNY Stony Brook |
| | | Northeastern |
| | | Princeton |
| | | Purdue |
| | | Rice |
| | | Wisconsin |

CMS Management Board



CMS-TS-95.000.10
27.07.16

Fig. A-1

CMS Technical Board

CMS-TS-05-0011
07-06-10

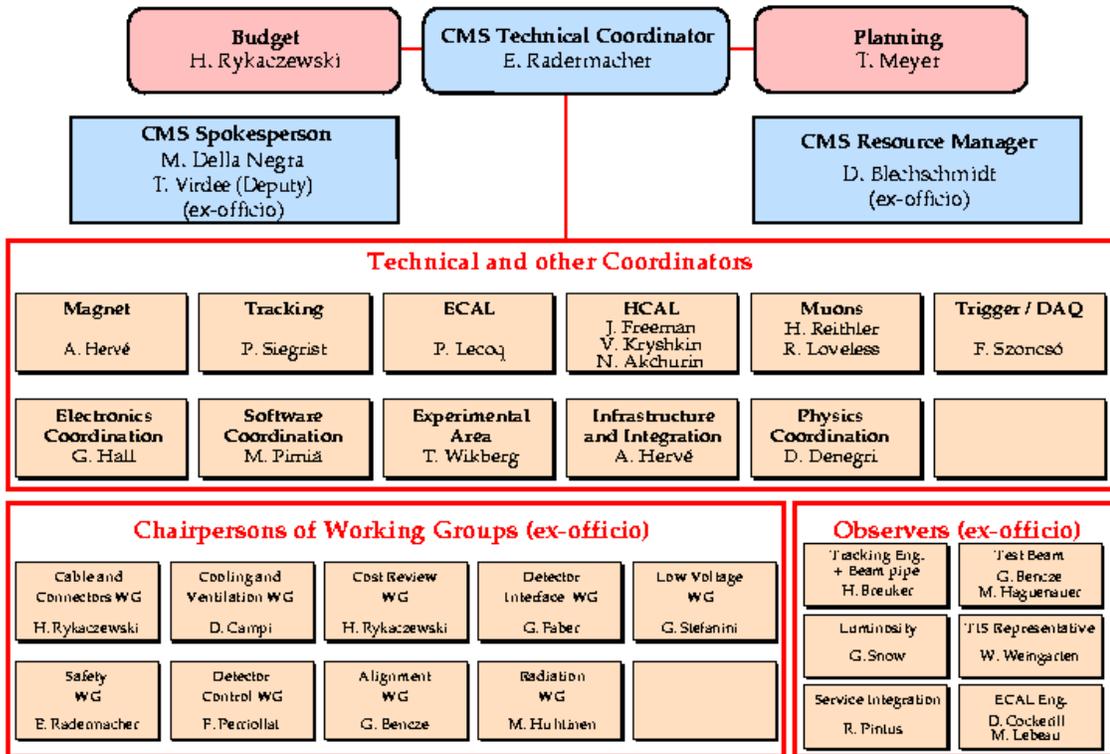


Fig. A-2

CMS Finance Board

CMS-TS-95.0012 – Rev. 97.06.24

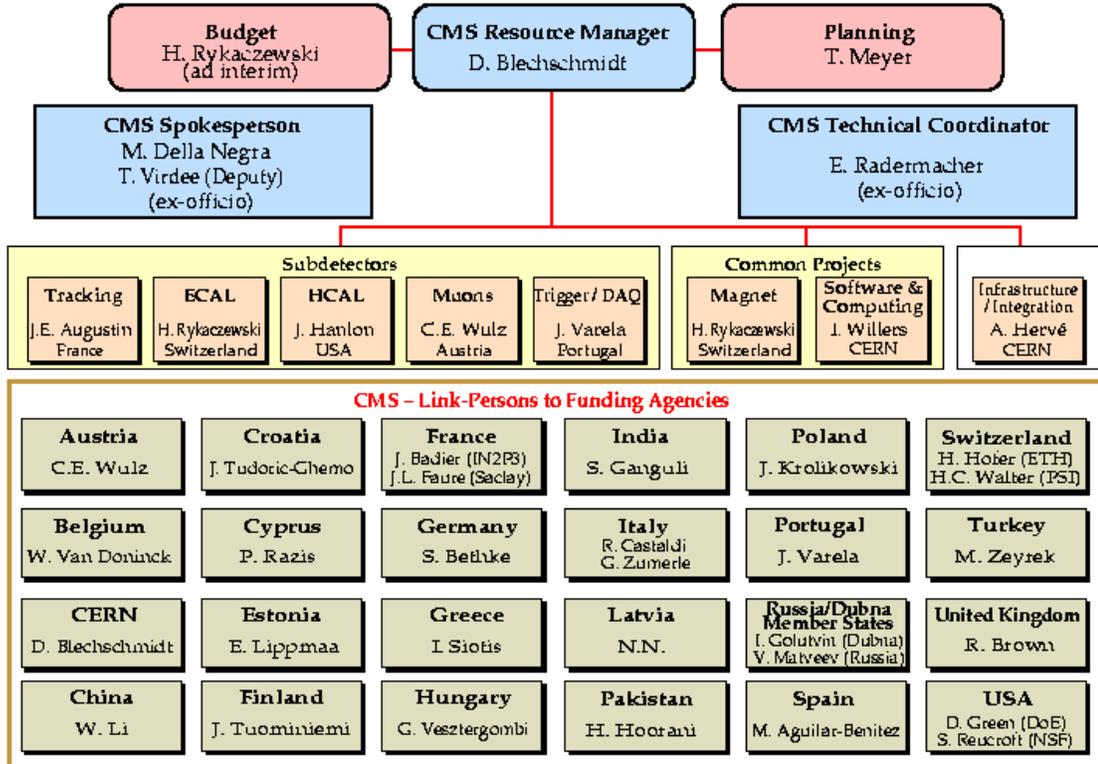


Fig. A-3

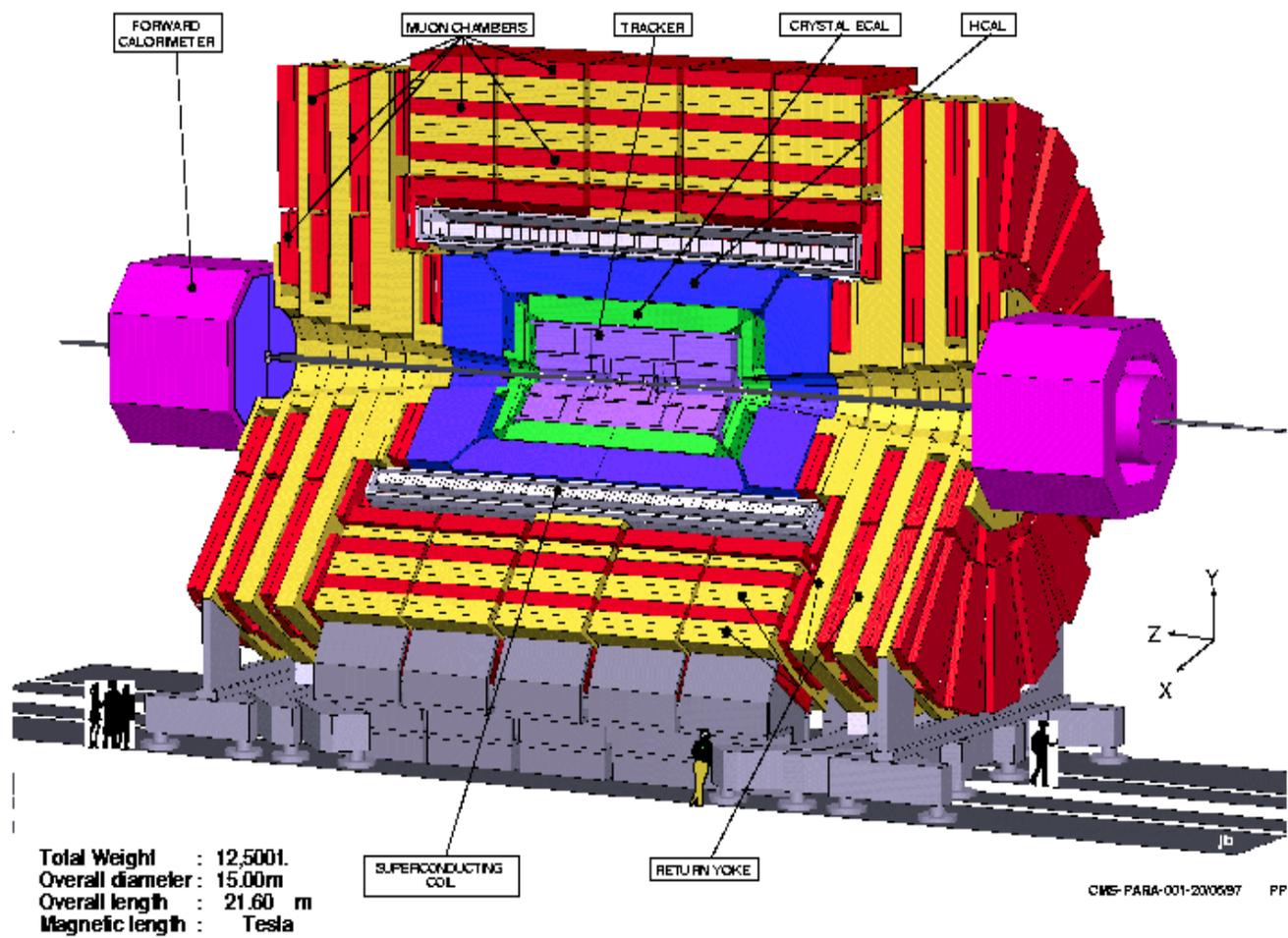
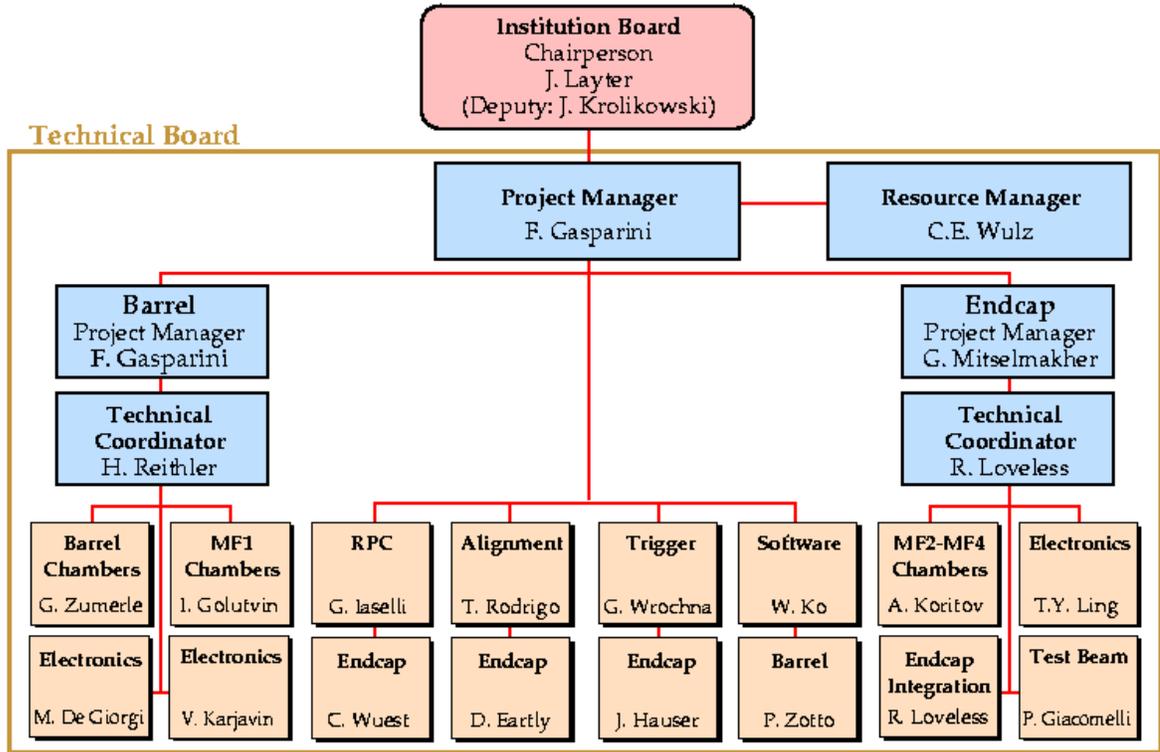


Fig. A-4 View of the CMS Detector.

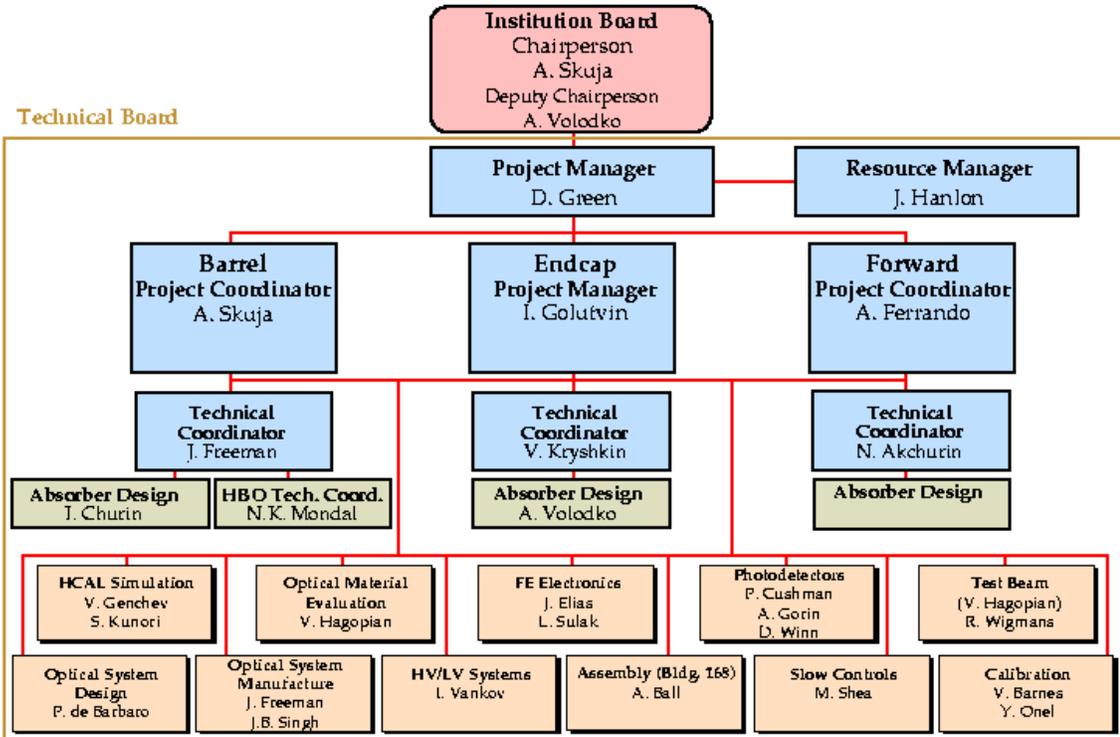
Muon Project



OHS-TS-96.0016

Fig. A-5

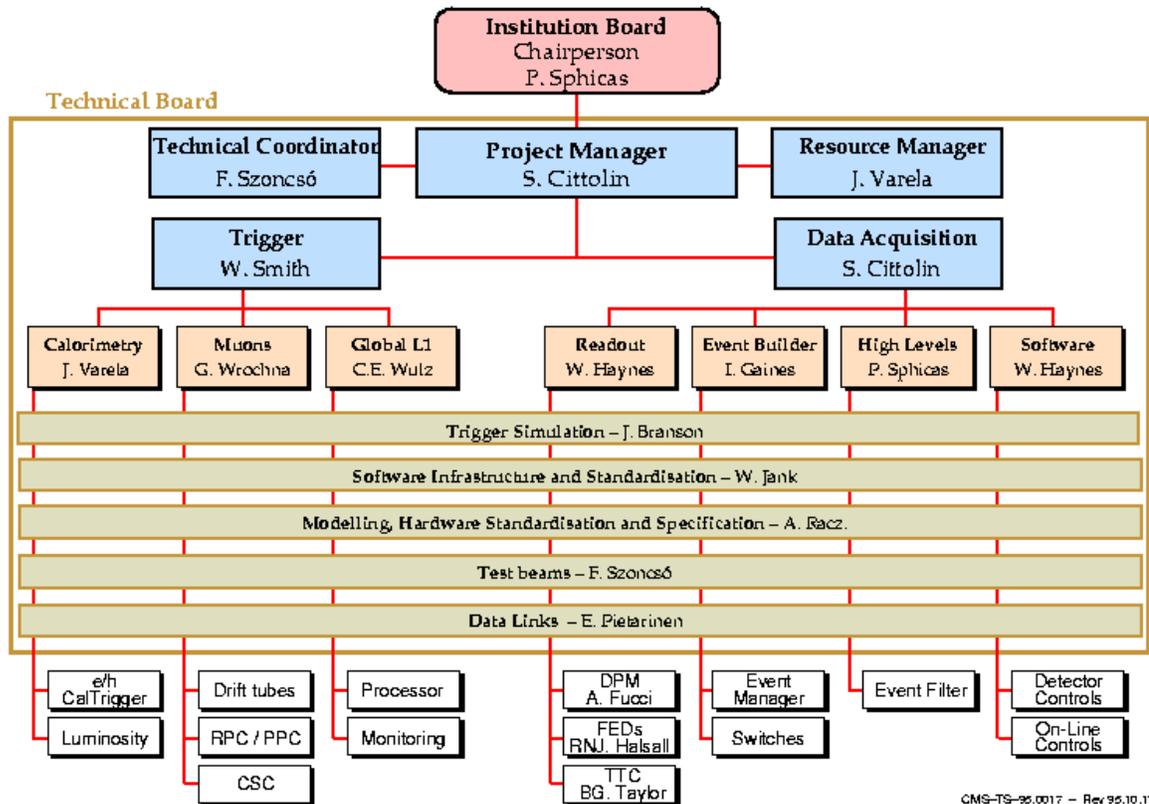
HCAL Project



CMSTS-00015 / 97 03 21

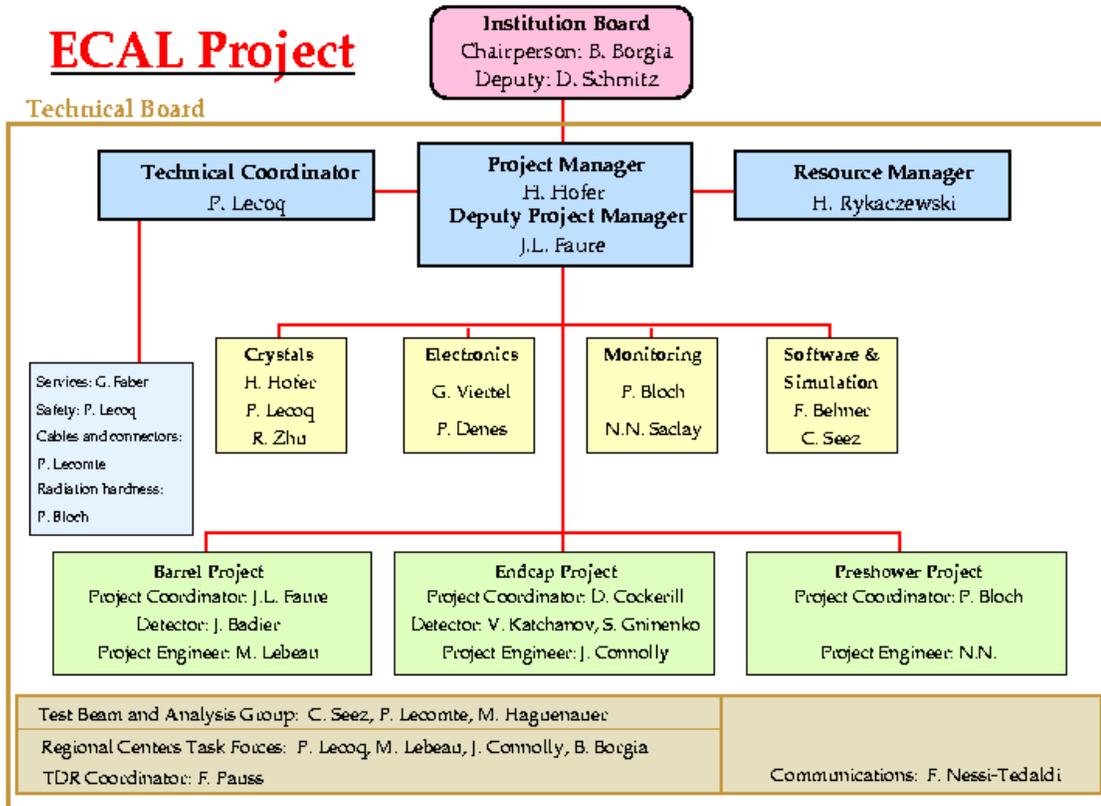
Fig. A-6

Trigger and Data Acquisition Project



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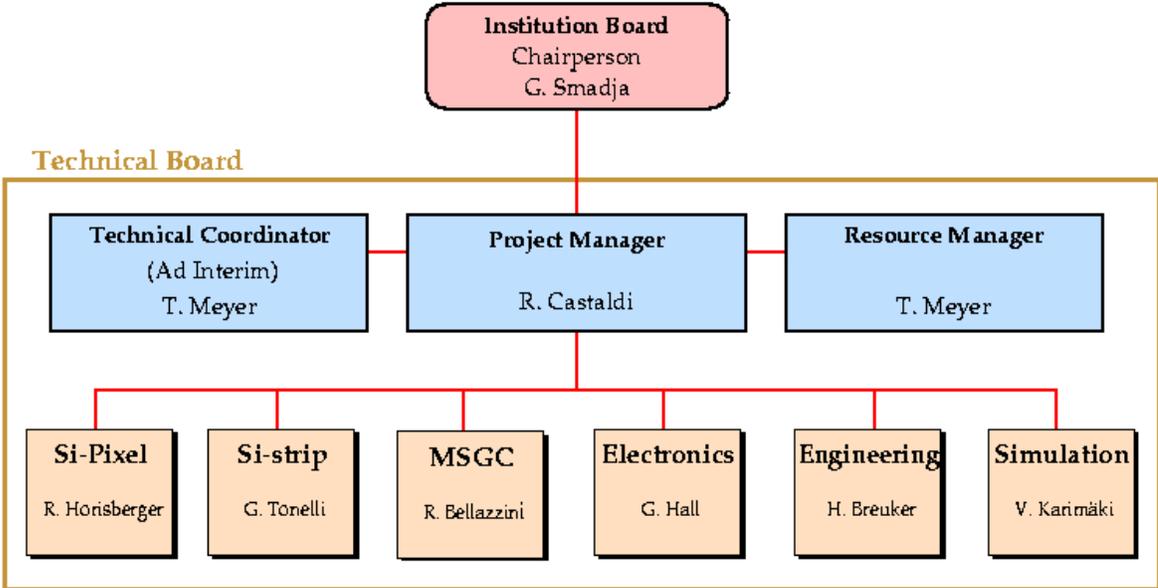
Fig. A-7



CMS-TS-950014 - Rev. 30/05/97

Fig. A-8

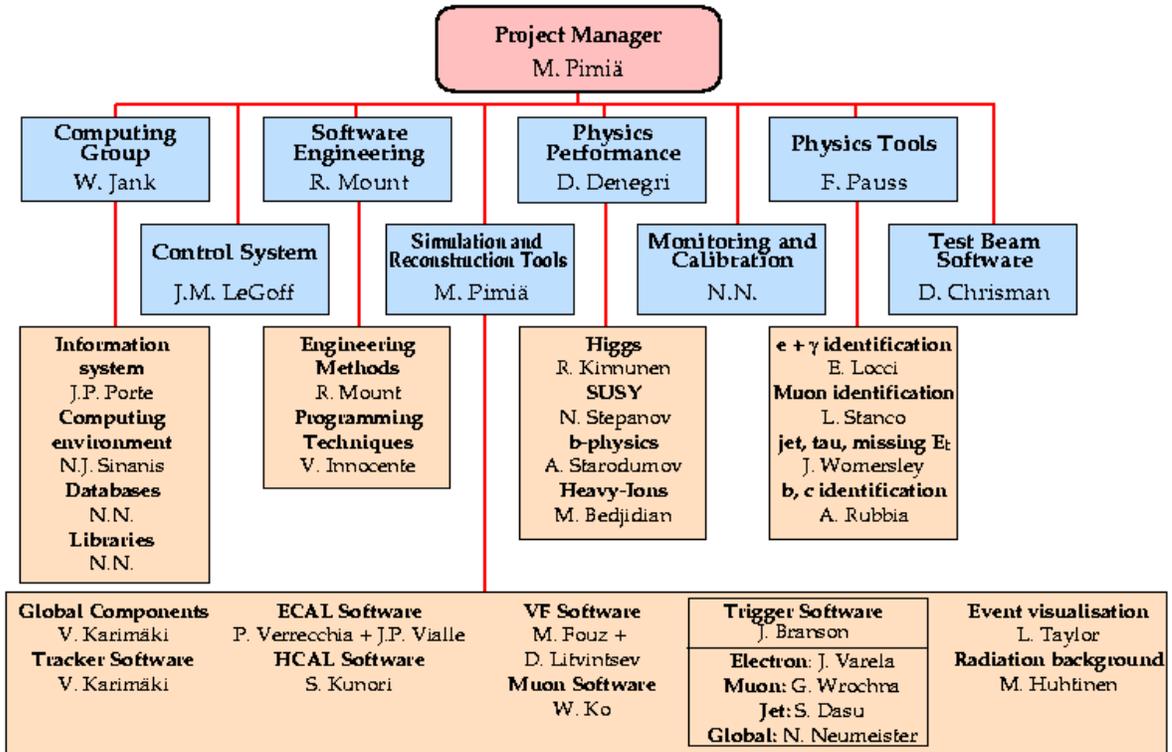
Tracking Project



CMS-TS-00013
Rev. 30.10.17

Fig. A-9

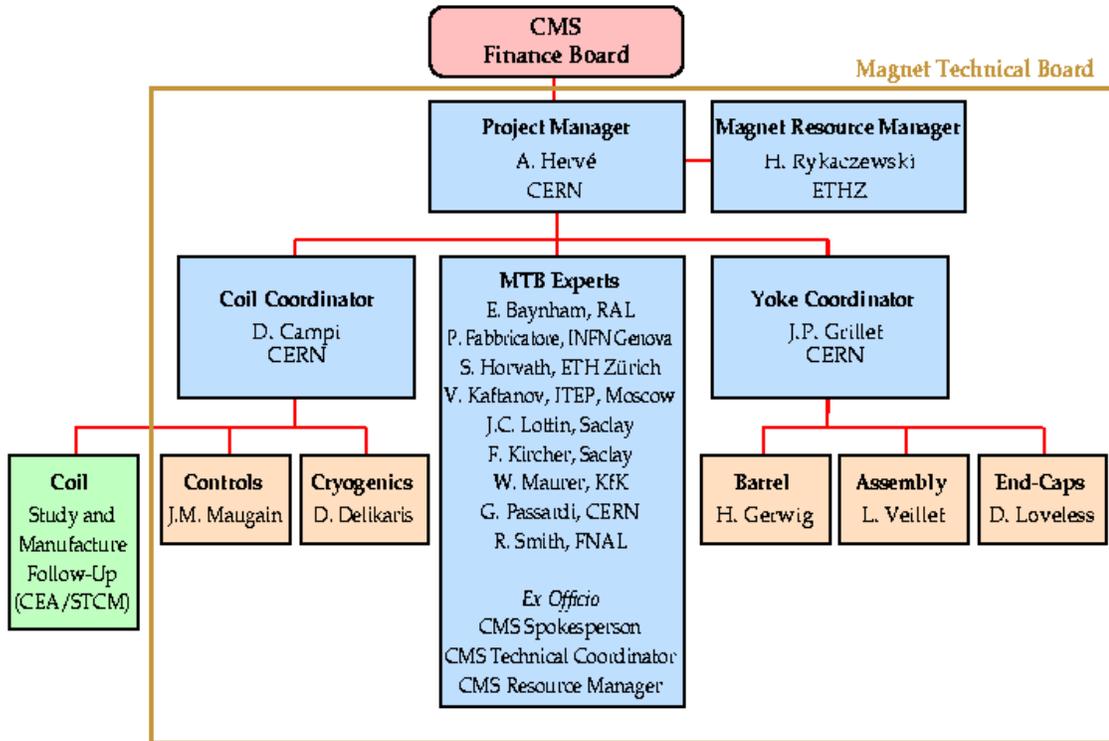
Software Technical Board



CMS-TS-06.0019

Fig. A-10

Magnet Project



CMS-TS-05.0018 - 07 08 00

Fig. A-11

US CMS Executive Committee

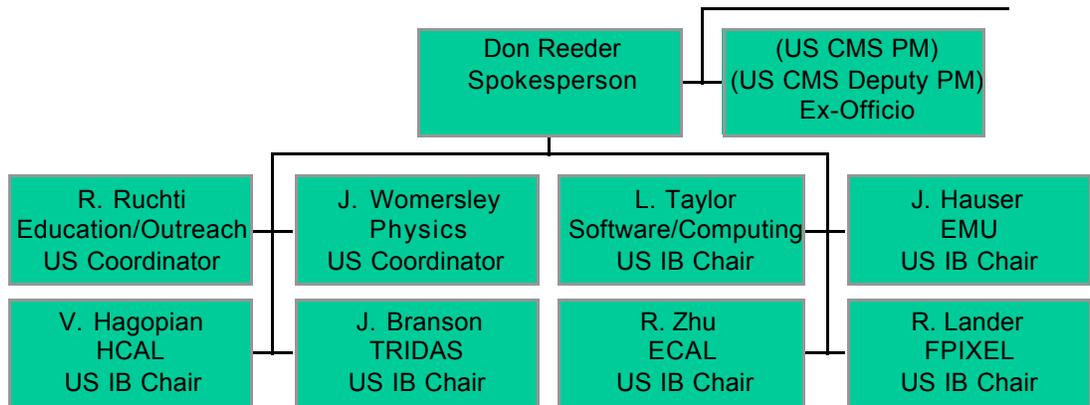


Fig. A-12