

Memorandum of Understanding
For the
RD-51 Collaboration

between

The EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH,
hereinafter referred to as CERN, Geneva, as the Host Laboratory

on the one hand

and

a Funding Agency/Institution of the RD-51 Collaboration

on the other hand

Preamble

- (a) A group of Institutes from CERN Member and non-Member States, and CERN, have agreed to collaborate to form the RD-51 Collaboration. This Collaboration has proposed to Funding Agencies and CERN a research and development programme for micro-pattern gas detectors (MPGD). These Institutes have secured the support of their Funding Agencies to enable them to participate in the RD-51 Collaboration.
- (b) The Institutes participating in the RD-51 Collaboration intend to execute a coordinated effort of research and development on micro-pattern gas detectors. The programme of work is described in the proposal CERN-LHCC-2008-011 (LHCC-P-001) of 28 July 2008 and was approved by the CERN Research Board on 05 December 2008.
- (c) Agreement on the responsibilities for the execution of the RD-51 research programme is effected through these identical Memoranda of Understanding (MoU) between each Funding Agency or Institute, as appropriate, in the Collaboration and CERN as the Host Laboratory.
- (d) The present MoUs are not legally binding, but the Funding Agencies and Institutes recognise that the success of the RD-51 Research Programme depends on all members of the Collaboration adhering to their provisions. Any default will be dealt with by the mechanisms described in Article 11.

Article 1 : Annexes

- 1.1 All the Annexes are an integral part of this MoU.

Article 2 : Parties to this MoU

- 2.1 The Parties shall be all the Institutes of the Collaboration as listed in **Annex 1** and their Funding Agencies, and CERN as the Host Laboratory. The Funding Agency may be an Institute or established institution acting on behalf of one or more Institutes. The Funding Agencies and their representatives are listed in **Annex 2**.
- 2.2 The Collaborating Institute(s) and the RD-51 Collaboration will hereinafter be referred to as "Institute(s)" and "Collaboration", respectively.
- 2.3 The participation of industrial partners will be defined in separate agreements between the Collaboration or Institutes of the Collaboration and these industrial partners. Such agreements shall not contradict the terms of this MoU. The industrial partners will not be members of the Collaboration in the terms of this MoU.

Article 3 : Purpose of this MoU

- 3.1 This MoU addresses the common research and development programme of the Collaboration. Its purpose is to define the mechanisms by which the charges and responsibilities for the execution of this work are distributed amongst the Parties. It sets out organisational, managerial and financial guidelines to be followed by the Collaboration.
- 3.2 The Collaboration shall maintain at CERN a Common Fund account to cover all of the costs related to the co-ordination of the Collaboration.
- 3.3 The RD-51 programme is executed in the normal framework of the CERN scientific programme, approved by the CERN Council and subject to the bilateral Agreements and Protocols between CERN and non-Member States.
- 3.4 In case of conflict between relevant Co-operation Agreements or Protocols subscribed by CERN and the present MoU, the former prevail.
- 3.5 RD-51 common infrastructure at locations other than CERN will operate under agreements to be worked out between the Collaboration and the corresponding host laboratory.

Article 4 : Duration of this MoU and its Extension

- 4.1 The initial validity of the present MoU covers the period until the 31st of December 2013.
- 4.2 This MoU may be extended at any time by mutual agreement of the Parties. No amendment or modification of this MoU shall be valid unless in writing and signed by the signatories. This provision notwithstanding, the MoU will automatically cease to be valid when the RD-51 programme is declared closed by the CERN Research Board, in agreement with the Spokespersons.
- 4.3 Any Funding Agency may withdraw its support from the Collaboration by giving not less than six months notice in writing to the Collaboration and the Director General of CERN. In such an event, reasonable compensation to the Collaboration will be negotiated through CERN if the Funding Agency is engaged in common projects with other Institutes within the Collaboration.
- 4.4 Any Institute is entitled to leave the Collaboration and to withdraw from its obligations under this MoU by giving not less than six months notice in writing to the Collaboration and, where applicable, to its Funding Agency/Agencies.
- 4.5 Any Institute that joins the Collaboration in accordance with the Collaboration rules during the period of validity of this MoU shall accept the agreements in force and will be expected to make an appropriate contribution to the Common Fund. This will be negotiated by the Collaboration (which reserves the right to request additional contributions from such Institutes).

Article 5 : The RD-51 Collaboration and Common Infrastructure

- 5.1 The management structure of the Collaboration is described in **Annex 4.1**.
- 5.2 The Collaboration shall update the list of persons holding management positions in the Collaboration every two years, see **Annex 4.2**.
- 5.3 The RD-51 programme is executed by the Institutes and groups of Institutes within the Collaboration with funds available directly to them or solicited for this purpose.
- 5.4 The Collaboration plans to install and/or operate common infrastructure (at CERN and elsewhere as appropriate) under the following main headings (chapters III-H, III-G and V of the RD-51 proposal specify the common infrastructure in detail):
 - A common production facility in the framework of the CERN EN/DEM workshop
 - A test beam facility at CERN
 - Common irradiation tests where appropriate
 - Common computing resources where available

Article 6 : Responsibilities of the Institutes for the Maintenance and Operation of the RD-51-Test Beam Facility, and of CERN as Host Laboratory

- 6.1 Responsibility for the maintenance and operation of the RD-51 test beam facility rests jointly with the Collaboration as a whole and with CERN as Host Laboratory, within the General Conditions Applicable to Experiments Performed at CERN (**Annex 3**), hereinafter referred to as “the General Conditions”. It is a fundamental principle that each Institute within the Collaboration using the common test facilities shall participate in both maintenance and operation and contribute a fair and equitable share of common costs.
- 6.2 It is also a fundamental principle that an Institute, which has contributed a component of equipment, will also contribute to the necessary scientific and technical manpower support to operate that component and maintain it in good working order.
- 6.3 The general obligations of CERN in its role as Host Laboratory and of the Institutes (including CERN in this role) are contained in the General Conditions, which in case of contradiction or ambiguity shall prevail over the main body of this MoU.
- 6.4 CERN shall operate and maintain, with appropriate controls and diagnostics, the proton beam line to the RD-51 test beam facility. The Collaboration shall ensure that the infrastructure of the test beam facility conforms to CERN standards and rules.
- 6.5 The Collaboration Board shall agree upon the manpower contribution from each Institute using the test beam facility to operate the test beam facility.
- 6.6 The Institutes using the test beam facility shall be collectively responsible for the installation and maintenance of experimental equipment, all detectors, the front-end electronics, the data acquisition system, and the simulation and analysis offline software, which are in kind contributions. Any decision on new equipment and developments shall include the designation of the Institutes responsible thereafter.

Article 7 : Common Fund and Cost Sharing & Procedures

- 7.1 A Common Fund account will be opened in the name of the Collaboration at CERN. All payments made by CERN on behalf of the Collaboration and the related receipts will be shown in that account.
- 7.2 CERN will issue invoices in Swiss Francs to the Funding Agencies of the Collaboration for their Common Fund contributions. The detailed procedure for the payment of the contributions is set out in **Annex 5**.

- 7.3 The Common Fund is intended to cover costs related to the Collaboration in general, such as organization of workshops on the RD-51 research programme and invitation of experts.
- 7.4 The following guidelines are agreed for the sharing of Common Fund expenses: The annual contributions to the Common Fund due by each Member Institute of the RD-51 Collaboration amount to 2000.00 CHF. The Collaboration Board may decide, in special cases, on a different contribution of an Institute. The contributions due for the current year are listed in **Annex 6**.
- 7.5 The Chairman of the Collaboration Board shall report annually to the autumn meeting of the Collaboration Board on the functioning and use of the Common Fund and shall point out any cases of default (see Article 9.2 below). At the same meeting, the Collaboration Board shall decide the Common Fund budget (allocation of Common Fund amounts to specific items, required contribution levels) for the following year and shall update **Annex 6** accordingly. Increases in the Common Fund contributions are subject to the approval of the Funding Agencies. The CB shall base its decisions on submitted proposals and estimates (to be expressed in Swiss Francs unless exceptionally agreed otherwise)
- 7.6 If, for any reason, the Collaboration Board should fail to reach agreement on the Common Fund costs or their sharing, the arrangements that it last agreed upon will continue to apply until agreement is reached.

Article 8 : Rights and Benefits of Institutes

- 8.1 The Institutes participating in the Collaboration are entitled to join the exploitation phases of the project and to participate in the scientific exploitation of the data acquired. Further details are set out in the General Conditions.

Article 9 : Administrative and Financial Provisions

- 9.1 Under the provisions of the CERN basic Convention dated 1st of July 1953 and revised on 17 January 1971, any Institute's staff and property located at CERN shall be subject to the authority of the CERN Director-General and shall comply with the CERN regulations.
- 9.2 Default on provision of the agreed contributions for the Common Fund shall engage the procedure for resolution of disputes described in Article 11 and may result in specific action against the defaulter. Should the outcome of the dispute resolution procedure imply a loss of Common Fund contributions to the Collaboration, the question of recovery from the loss is for the Collaboration Board to address.
- 9.3 Independently from the RD-51 Common Fund, Parties to the RD-51 Collaboration may agree amongst themselves to share costs for common projects, such as submission of wafer production or other procurements.

Article 10 : Amendments

- 10.1 The Collaboration will make every effort to ensure that the information contained in the Annexes to this MoU is kept up-to-date. To this end it shall review the information at least annually in time for the autumn meeting of the Collaboration Board.
- 10.2 This MoU may be amended at any time with the agreement of its signatories or of their appointed successors. Any such amendments will be subject to the prior agreement of the Collaboration Board.
- 10.3 Once that this MoU will be in place, any other Institute may accede to the Collaboration with the agreement of all the existing Institutes under conditions negotiated amongst them. These conditions shall be the subject of a specific Addendum to the MoU between the existing and the incoming Institutes and shall be subject to the agreement of the Collaboration Board.

Article 11 : Disputes

- 11.1 As indicated in the Preamble (d), the primary mechanism for resolution of any disputes shall be negotiation within the Collaboration in the first instance. Should this fail to conclude, the following three mechanisms shall apply as appropriate. Any dispute between Funding Agencies shall be resolved by negotiation or, failing that, by arbitration through the President of the CERN Council, who will use defined arbitration procedures where they exist and will otherwise adopt one at his or her discretion. Any dispute between a Funding Agency and CERN will be resolved using standard CERN procedures for the resolution of such disputes. Any dispute between Institutes will be resolved according to Collaboration procedures.

Article 12 : Intellectual Property

- 12.1 The General Conditions Article 7 shall apply with the following additions.
- 12.2 Each Party shall, prior to entering into this MoU, identify to the best of its knowledge at the time, the protected intellectual property ("IP") it owns and contributes to the Collaboration for the execution of the RD-51 programme, and list such IP in **Annex 7** together with any applicable restrictions ("Included Background IP"). A Party wishing to transfer its Included Background IP listed in **Annex 7** to a third party shall notify the other Parties of such transfer and ensure that the rights of the Parties under this MoU are adequately safeguarded.

For the avoidance of doubt, it is hereby clarified that all Background IP (as such term is defined below) not listed in **Annex 7**, is hereby explicitly **excluded** from the

definition of "Included Background IP" under this MoU and from any rights that otherwise would have been granted under this MoU to the Parties.

For the purpose of this MoU, "Background IP" shall mean any information and scientific and/or technical knowledge i.e. know-how, secret processes, trade secrets, data, software in its source code version or in its object code version, files, plans, diagrams and figures, designs, formulae and/or any other type of information, in any form, whether it is patentable or not and/or whether it is patented or not, as well as copy rights and other intellectual property rights pertaining to such information, which belongs to or is held by a Party prior to the entry into force of this MoU and/or which is developed outside the scope of the Collaboration.

- 12.3 Any IP developed in the execution of the RD-51 programme ("Foreground IP") shall belong to the Party having generated such Foreground IP. Such Party shall be free to decide whether to protect and/or exploit the same at its own cost and risk, subject always to the provisions of this MoU.
- 12.4 In case Foreground IP has been generated by more than one Party, and either their respective share of the Foreground IP cannot be distinguished, or cannot be dissociated for the purpose of its protection, such Foreground IP shall be owned jointly by the Parties having generated it, unless agreed otherwise in writing by such Parties. In such case, the Parties concerned shall jointly apply to obtain and/or maintain the relevant intellectual property rights and shall strive to set up amongst themselves, in good faith, through the representative of the offices of technology transfer or their equivalent, a co-ownership agreement in order to do so. These co-ownership agreements shall specify the allocation of expenses and royalties in connection with the jointly owned Foreground IP, and the share of each of the Parties in its development, all subject to the provisions of this MoU.
- 12.5 The conditions of access to IP of a Party for the purpose of executing the RD-51 programme are set out in the General Conditions. Access for all other users, including but not limited to commercial exploitation, shall be the subject of a separate written agreement involving the Parties concerned and shall be at the sole discretion of the Party/Parties owning the IP.
- 12.6 For avoidance of doubt, the Parties have no obligation to spend any amount in order to protect their IP; however, a Party that did not participate in the costs of an enforcement action of IP which is jointly owned shall not be entitled to any reward collected therein.
- 12.7 Any publication by a Party relating to the execution and results of the RD-51 programme shall acknowledge the contribution of the other Parties.

Article 13 : Theses, Publications and Conference Contributions

- 13.1 One copy of any Ph.D. thesis or similar academic document relating to the experiments of the RD-51 programme must be sent by the Institution(s) concerned to the CERN Library for inclusion in its collection.
- 13.2 The results of the research work of the Collaboration can be published in the following forms:
- a. Regular status reports requested by the LHCC. All members of the Collaboration are authors. The members of the Collaboration Board maintain the list of authors from their Institute.
 - b. Publications in scientific journals.
 1. Reviews covering the research programme of the whole Collaboration. All members of the Collaboration are authors.
 2. Reviews and specialized articles describing the research work of one or several research projects. The Conveners concerned discuss and, if required, decide on the list of authors in agreement with the involved Institutes.
 3. Papers produced in the framework of the activity of RD51. Before publication the authors should inform the corresponding Conveners and insert the manuscript in a dedicated list linked to the RD51 home web site. The paper should be published with the explicit notation: "This work has been performed in the framework of the RD51 Collaboration" or "This work has partly been performed in the framework of the RD51 Collaboration".
 - c. Internal RD51 notes.
- 13.3 The review of part or all the results of the research work of the Collaboration can be presented at workshops and conferences as:
- a. Contributed talks. The speaker discusses the abstract with the Conveners. Written proceedings are treated as normal publication (13.2.b above).
 - b. Invited talks. In the case that the invitation is received by the Collaboration, the choice of the speaker is the responsibility of the Spokespersons in agreement with the Conveners. Written proceedings are treated as normal publication (13.2.b above).

Where presentations are subject to a length limitation, it is permissible to use, as authors list, the name of the speaker only, along with the statement "On behalf of the RD51 Collaboration" and a footnote indicating the web page where the complete authors list is given.

LIST of ANNEXES

- Annex 1 Institutes in the RD-51 Collaboration and Names of their Representatives to the Funding Agencies

- Annex 2 Funding Agencies and Names of their Representatives

- Annex 3 General Conditions Applicable to Experiments Performed at CERN

- Annex 4 Management of the RD-51 Collaboration
 - Annex 4.1 Management Structure of the RD-51 Collaboration

 - Annex 4.2 Management and other senior positions within the RD-51 Collaboration and the names of the persons currently holding them

- Annex 5 Procedure for the Payment of the Common Fund Contributions

- Annex 6 Common Fund Contributions [CHF]

- Annex 7 Intellectual Property contributed to the RD-51 Collaboration

The European Organization for Nuclear Research (CERN)

and

declare that they agree on the present Memorandum of Understanding for the RD-51 Collaboration.

Done in Geneva

Done in _____

on _____

on _____

For CERN

For

Sergio Bertolucci
Director for Research and
Scientific Computing

Annex 1

Institutes in the RD-51 Collaboration and Names of their Representatives to the Funding Agencies

	country	town	institute	represented by
1	Canada	Ottawa	Carleton University	Alain Bellerive
2	China	Hefei	University of Science and Technology of China	Xiaoliang Wang
3	China	Lanzhou	Institute of Nuclear Research	Xiaodong Zhang
4	France	Annecy le Vieux	LAPP	Catherine Adloff
5	France	Grenoble	Institut Max von Laue – Paul Langevin - ILL	Bruno Guerard
6	France	Grenoble	Laboratoire de Physique Subatomique et de Cosmologie	Daniel Santos
7	France	Saclay	CEA IRFU	Paul Colas
8	Germany	Bonn	Physikalisches Institut Rheinische Friedrich-Wilhelms Universität	Klaus Desch
9	Germany	Braunschweig	Physikalisch-Technische Bundesanstalt	Volker Dangendorf
10	Germany	Freiburg	Physikalisches Institut Albrecht-Ludwigs Universität	Ulrich Landgraf
11	Germany	Hamburg	DESY	Ties Behnke
12	Germany	München	Max-Planck-Institut für Physik	Hubert Kroha
13	Germany	München	Physik Department E18 Technische Universität München	Bernhard Ketzer
14	Great Britain	Sheffield	University of Sheffield	Neil Spooner
15	Greece	Athens	INP NCSR "Demokritos"	Georgios Fanourakis
16	Greece	Athens	National Technical University of Athens	Yorgos Tsiopolitis
17	Greece	Athens	University of Athens	Christine Kourkoumelis
18	Greece	Thessaloniki	Aristotle University of Thessaloniki	Dimitrios Sampsonidis
19	Hungary	Budapest	KFKI Research Institute for Particle and Nuclear Physics	Gergö Hamar
20	Hungary	Budapest	Eötvös Loránd University	Dezső Varga
21	India	Kolkata	Saha Institute of Nuclear Physics	Supratik Mukhopadhyay
22	India	Mumbai	Tata Institute of Fundamental Research	K.P.Singh

MoU for the RD-51 Collaboration

	country	town	institute	represented by
23	Israel	Rehovot	Weizmann Institute of Sciene	Amos Breskin
24	Italy	Alessandria	INFN and University	Daniele Panzieri
25	Italy	Bari	INFN and University	Maria Gabriella Cantanesi
26	Italy	Cagliari	INFN and University	Alessandro Cardini
27	Italy	Frascati	LNF-INFN	Giovanni Bencivenni
28	Italy	Naples	INFN and University	Mariagrazia Alviggi
29	Italy	Novara	TERA Foundation	Fabio Sauli
30	Italy	Rome	Sanita Group, INFN	Evaristo Cisbani
31	Italy	Siena	University of Siena and INFN Pisa	Stefano Lami
32	Italy	Trieste	INFN and University	Silvia Dalla Torre
33	Japan	Kobe	Kobe University	Atsuhiko Ochi
34	Mexico	Mexico City	Universidad National Autonoma de Mexico	Guy Paic
35	Netherlands	Amsterdam	NIKHEF	Harry van der Graaf
36	Portugal	Aveiro	University of Aveiro	João F.C.A. Veloso
37	Portugal	Coimbra	University of Coimbra	Joaquim dos Santos
38	Portugal	Coimbra	Laboratorio de Instrumentacao e Fisica Experimental de Particulas	Rui Ferreira Marques
39	Russia	Novosibirsk	Budker Institute of Nuclear Physics	Alexei Buzulutskov
40	Russia	St Petersburg	St Petersburg Nuclear Physics Institute	Alexey Khanzadeev
41	Spain	Barcelona	IFAE	Federico Sanchez
42	Spain	Valencia	Universidad Politecnica de Valencia (UPVA)	José F. Toledo Alarcón
43	Spain	Valencia	Consejo Superior de Investigaciones Cientificas (CSIC) Instituto de Fisica Corpuscular (IFIC)	Markus Ball
44	Spain	Zaragoza	University of Zaragoza	Igor G. Irastorza
45	Switzerland	Geneva	CERN PH and TS/DEM	Hans Taureg
46	Switzerland	Geneva	DPNC, section de physique, Université de Genève	Alain Blondel
47	Tunisia	Tunis	Centre National des Sciences et Technologies Nucleaire	Nidhal Kahlaoui
48	Turkey	Bursa	Department of Physics Uludag University	Ilhan Tapan
49	USA	Argonne, IL	Division of High Energy Physics Argonne National Laboratory	David Underwood

MoU for the RD-51 Collaboration

	country	town	institute	represented by
50	USA	Arlington, TX	University of Texas, Arlington	Andy White
51	USA	Melbourne, FL	Florida Institute of Technology	Marcus Hohlmann
52	USA	Tucson, AZ	University of Arizona, Dept. of Physics	Kenneth Johns
53	USA	Williamsburg, VA	College of William and Mary, Physics Dept.	Charles F. Perdrisat
54	USA	Upton, NY	Brookhaven National Laboratory	Venetios Polychronakos

Annex 2

List of Funding Agencies and their representatives

	country	town	funding agency	represented by
1	Canada	Ottawa	Carleton University	Darlene Gilson
2	China	Hefei	National Natural Science Foundation of China	Xiaolian Wang
3	China	Lanzhou	Institute of Nuclear Research, Lanzhou University	Bitao Hu
4	France	Annecy le Vieux	CNRS	Younis Hermes
5	France	Grenoble	Institut Max von Laue – Paul Langevin - ILL	Martin Walter
6	France	Grenoble	Laboratoire de Physique Subatomique et de Cosmologie	Daniel Santos
7	France	Saclay	CEA	Yves Caristan
8	Germany	Bonn	Physikalisches Institut Rheinische Friedrich-Wilhelms Universität	Karsten Buse
9	Germany	Braunschweig	Physikalisch-Technische Bundesanstalt	Manfred Gahrens
10	Germany	Freiburg	Physikalisches Institut Albrecht-Ludwigs Universität	Ulrich Landgraf
11	Germany	Hamburg	DESY	Joachim Mnich, Christian Scherf
12	Germany	München	Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V.	Siegfried Bethke
13	Germany	München	Physik Department E18 Technische Universität München	Stephan Paul
14	Great Britain	Sheffield	University of Sheffield	Neil Spooner
15	Greece	Athens	General Secretariat for Research and Technology	Filippas Tsalides
16	Greece	Athens	General Secretariat for Research and Technology	Filippas Tsalides
17	Greece	Athens	General Secretariat for Research and Technology	Filippas Tsalides
18	Greece	Thessaloniki	General Secretariat for Research and Technology	Filippas Tsalides
19	Hungary	Budapest	MTA KFKI RMKI Research Institute for Particle and Nuclear Physics	Zoltàn Szőkefalvi- Nagy

MoU for the RD-51 Collaboration

	country	town	funding agency	represented by
20	Hungary	Budapest	Eötvös Loránd University	Ferenc Hudecz Katalin Juhász Husztly
21	India	Kolkata	Saha Institute of Nuclear Physics	Bikas Sinha
22	India	Mumbai	Tata Institute of Fundamental Research	M.Barma
23	Israel	Rehovot	Weizmann Institute of Science	Mudi Sheves
24	Italy	Alessandria	INFN	Roberto Petronzio
25	Italy	Bari	INFN	Roberto Petronzio
26	Italy	Cagliari	INFN	Roberto Petronzio
27	Italy	Frascati	INFN	Roberto Petronzio
28	Italy	Naples	INFN	Roberto Petronzio
29	Italy	Novara	TERA Foundation	Ugo Amaldi
30	Italy	Rome	INFN	Roberto Petronzio
31	Italy	Siena	INFN	Roberto Petronzio
32	Italy	Trieste	INFN	Roberto Petronzio
33	Japan	Kobe	Graduate School of Science, Kobe University	Hiroshi Sakamoto
34	Mexico	Mexico City	Instituto de Ciencias Nucleares, UNAM, Mexico City	Alejandro Frank
35	Netherlands	Amsterdam	NIKHEF	Frank Linde
36	Portugal	Aveiro	University of Aveiro	Maria Helena Nazaré
37	Portugal	Coimbra	University of Coimbra	João Gabriel Silva
38	Portugal	Coimbra	Laboratorio de Instrumentacao e Fisica Experimental de Particulas	Rui Ferreira Marques
39	Russia	Novosibirsk	Budker Institute of Nuclear Physics	Yuri Tikhonov
40	Russia	St Petersburg	St Petersburg Nuclear Physics Institute	Alexey Khanzadev
41	Spain	Barcelona	IFAE	Federico Sanchez Nieto
42	Spain	Valencia	Universidad Politecnica de Valencia (UPVA)	Amparo Chiralt Boix
43	Spain	Valencia	Consejo Superior de Investigaciones Cientificas (CSIC) Instituto de Fisica Corpuscular (IFIC)	Francisco Botella
44	Spain	Zaragoza	University of Zaragoza	Igor Garcia Irastorza
45	Switzerland	Geneva	CERN	Sergio Bertolucci
46	Switzerland	Geneva	DPNC, section de physique, Université de Genève	Alain Blondel

MoU for the RD-51 Collaboration

	country	town	institute	represented by
47	Tunisia	Tunis	Centre National des Sciences et Technologies Nucleaire	Adel Trabelsi
48	Turkey	Bursa	Department of Physics Uludag University	Ismail Naci Cangul
49	USA	Argonne, IL	Division of High Energy Physics Argonne National Laboratory	Harry Weerts
50	USA	Arlington, TX	University of Texas, Arlington	Jeremy Forsberg
51	USA	Melbourne, FL	Florida Institute of Technology	Marcus HoHlmann
52	USA	Tucson, AZ	University of Arizona, Dept. of Physics	Kenneth Johns
53	USA	Williamsburg, VA	College of William and Mary, Physics Dept.	Charles F. Perdrisat
54	USA	Upton, NY	Brookhaven National Laboratory	Steven Vigdor

Annex 3

General Conditions Applicable to Experiments Performed at CERN.

ORGANISATION EUROPÉENNE POUR LA RECHERCHE NUCLÉAIRE

EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

Laboratoire Européen pour la Physique des Particules
European Laboratory for Particle Physics

GENERAL CONDITIONS

APPLICABLE TO

EXPERIMENTS AT CERN

20 February 2008

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GENERAL CONDITIONS

applicable to

Experiments at CERN

(Terms with a particular meaning in the context of this document are defined at the end – their first occurrence in the document is indicated with a reference number thus: termⁿ).

The mission of the European Organization for Nuclear Research (“*CERN*”) is to sponsor international scientific research in high-energy physics.

This document (the “*General Conditions*”) sets out the rules and procedures in organisational, managerial and financial matters, which apply to the participation by Universities and Research Institutions (the “*Collaborating Institution(s)*”) in experiments at CERN. The Collaborating Institutions jointly constitute the “*Collaboration*”. They provide, and are responsible for, the Visiting Research Teams¹ (the “*Team(s)*”) carrying out the experiment.

The General Conditions also define CERN's role as Host Laboratory of the experiment, which must be distinguished from its role as a Collaborating Institution, as the case may be.

Any reference made in the General Conditions to a specific document shall be to its most recent version.

1. SCOPE OF APPLICATION

The General Conditions apply to Approved Experiments² (the “*Experiment(s)*”) carried out on the CERN site³. They do not apply to Recognised Experiments⁴.

2. PARTIES AND THEIR REPRESENTATION

2.1. The parties involved in the Experiment (the “*Party*” or the “*Parties*”) are:

- CERN as Host Laboratory;
- The Collaborating Institutions (including, as the case may be, CERN).

2.2. Each Party shall have a representative:

- CERN as Host Laboratory shall be represented by its Director of Research, acting on behalf of the Director-General;
- The Collaboration shall appoint a Spokesperson, who shall represent the Collaboration to the outside, including to CERN as Host Laboratory, and co-ordinate its work. Where the Spokesperson is not stationed full-time at CERN, the Collaboration shall also appoint a Contactperson at CERN;

- Each Collaborating Institution shall appoint a Team Leader who shall represent it in its relations with CERN as Host Laboratory. The Team Leader's responsibilities are detailed in the "Appointment of Team Leader" form (available on the Users' Office Web site – see Article 5.7).

- 2.3. Each Collaborating Institution shall ensure that the members of its Team (the "*Team Member(s)*") comply with the General Conditions.

3. BASIC DOCUMENTS GOVERNING THE EXECUTION OF THE EXPERIMENT

- 3.1. The following documents shall constitute the formal basis for the Experiment:

3.1.1. the **EXPERIMENTAL PROPOSAL**, after its approval by the CERN Research Board on the recommendation of the Experiment Committee dealing with the appropriate part of the physics programme (the "*Experiment Committee*");

3.1.2. the **TECHNICAL DESIGN REPORTS**, where appropriate;

3.1.3. the **MEMORANDUM OF UNDERSTANDING** (the "*MoU*"), which sets out the detailed arrangements specific to the Experiment and which shall be agreed and signed by CERN as Host Laboratory and the Collaborating Institutions, for the purpose of signature represented, as the case may be, by their Funding Agencies⁵. Through the signature of the MoU, the Collaborating Institutions accept its terms;

3.1.4. the **GENERAL CONDITIONS**.

Contents of the MoU

- 3.2. The MoU may be a single document setting out the arrangements for construction, installation, maintenance and operation, or it may comprise two documents, one for construction and installation and the other for maintenance and operation. As a guide, the essential parts of the MoU are the following:

- a) a list of the Collaborating Institutions responsible for the Teams carrying out the Experiment;
- b) a list of the Funding Agencies of the Collaboration;
- c) details of the persons with specific responsibilities in the Experiment;
- d) the obligations of the Parties for:
 - i) construction and installation
 - the obligations for construction and installation of the detector components and the auxiliary equipment (jointly the "*Equipment*");
 - a breakdown of the funding requirements for the Equipment, together with the contributions of the Parties;
 - a timetable for the construction and installation of the Equipment;
 - ii) maintenance and operation
 - the obligations for maintenance and operation of the Equipment;

- e) an explicit statement that the General Conditions apply;
- f) references to any specific agreements and Protocols relevant to the Experiment, copies of which shall be included as Appendices to the MoU.

4. ORGANISATION OF THE COLLABORATION

Internal autonomy and co-ordination with CERN as Host Laboratory

- 4.1. In its internal relations, the Collaboration shall be free to take such organisational decisions as deemed necessary, always subject to the terms of the MoU and the General Conditions. Any financial arrangements between CERN as Host Laboratory and the Collaboration shall be subject to the Financial and Administrative Provisions for Visiting Research Teams.

Co-ordination in matters of safety

- 4.2. The Leader of the CERN Department responsible for the physics programme of which the Experiment is part shall appoint a Group Leader in Matters of Safety (GLIMOS), on the proposal of the Spokesperson. The rights and responsibilities of the GLIMOS are defined in the document "Safety Policy at CERN - SAPOCO/42".

Finance Review Committee/Resources Review Board

Initial Decision

- 4.3. For Experiments involving large capital investments, a Finance Review Committee (FRC) or a Resources Review Board (RRB) may be set up by agreement of CERN as Host Laboratory and the Collaboration.

Membership

- 4.4. The FRC/RRB shall consist of one representative of each Funding Agency, along with the Managements of CERN and the Collaboration. It shall be chaired by the CERN Director of Research.

Terms of reference

- 4.5. The role of the FRC/RRB includes:
- reaching agreement on the MoU;
 - approving any modification of, or addition to, the Experiment that would require amending the MoU;
 - monitoring the supply of Equipment according to the agreed schedule;
 - monitoring the Common Projects⁶ and the use of the Common Funds⁷;
 - monitoring the general financial and manpower support;
 - approving a maintenance and operation procedure and monitoring its functioning;
 - approving the annual construction and installation budgets as well as those for maintenance and operation.

- 4.6. The Collaboration Management reports to the FRC/RRB on technical, managerial, financial and administrative matters, and on the composition of the Collaboration.

5. CERN'S OBLIGATIONS AS HOST LABORATORY

PRINCIPLES

Installation

- 5.1. The Collaboration shall ensure that the Equipment and counting rooms meet the CERN Safety Rules. Provided that this is the case, CERN shall agree in writing to their installation in the appropriate experimental area.

Duration

- 5.2. CERN shall agree to keep the Equipment on-site during the data-taking for the experimental programme approved by the CERN Research Board.

Network connections

- 5.3. CERN shall agree that computers and peripherals belonging to the Collaboration, which are needed for the operation of the Equipment, may be connected to the CERN computer network, provided they meet its compatibility and security standards, including as set out in the document "Operational Circular No 5 – Use of CERN Computing Facilities" and subsidiary rules.

Insurance

- *Property*

- 5.4. CERN shall at its expense insure against the risks of fire, explosion, natural disaster and water damage all items belonging to the Collaboration or a Collaborating Institution, once they have been delivered to the CERN site, added to the Ownership Inventory (Article 6.10) and accepted in writing by CERN. CERN shall not insure such items against the risks of transport, crane or rigging accidents. It may however offer the possibility that such insurance is taken out at the expense of the Collaborating Institution(s) concerned.

- *Third party liability*

- 5.5. CERN shall at its expense insure the members of the Collaborating Institutions against third party liability incurred by them at CERN in the execution of the Experiment.

- *Limitation of coverage*

- 5.6. The insurance covers defined in Articles 5.4 and 5.5 are subject to the provisions, including the specified deductibles, exclusions and limits, of CERN's insurance policies. Any risk or amount not covered by such policies shall be for the exclusive account of the Collaboration. CERN does not warrant or accept liability as to the sufficiency of its insurance policies in relation to the risks incurred by the Collaboration.

SERVICES

User support, Users' Office and ACCU

- 5.7. CERN operates a Users' Office as a point of contact with the user community. Documentation for users is maintained on the Users' Office Web site, which can be accessed through the CERN home page (<http://www.cern.ch>). CERN shall provide access to its services, as described in the "CERN Guide for Newcomers" (available from the Users' Office Web site). The Users' Office provides assistance on questions concerning access to the services provided by CERN.

The Advisory Committee of CERN Users (ACCU) promotes links between CERN Management and the User Community and advises CERN Users on the working conditions and the arrangements for technical support.

Standard services and facilities

- 5.8. CERN normally provides, free of charge and within the limits and constraints imposed by the available resources and schedules of accelerators, the following standard services and facilities for the duration of the Experiment:

Particle beams and equipment

- a) particle beams and related shielding, monitoring equipment and standard communication with the accelerator control rooms;
- b) beam time allocation and scheduling, in accordance with the recommendations of the Experiment Committee;
- c) test-beam time for testing prototypes and calibrating final detector components, subject to the applicable scheduling and allocation procedures;

Space

- d) floor space in the experimental area(s) for the Equipment;
- e) laboratory and hall space for construction, testing and assembly of the Equipment;
- f) temporary short-term storage space for spare parts, handling and assembly tools and Equipment that is awaiting installation or removal. CERN reserves the right to charge the cost of longer-term storage of the above items to the Collaborating Institution(s) concerned;
- g) office space, equipped with standard furniture and infrastructure facilities including network connections, telephones and electricity;

Supplies and installations at the Experiment

- h) assistance with the installation and removal of the Equipment, such as the provision of crane and rigging services, geometrical survey and alignment, as well as transport of the Equipment on and between the parts of the CERN site and inside the experimental areas;

- i) mechanical infrastructure, local infrastructure for the supply of mains electricity, raw cooling water, compressed air and standard connections to the CERN communication network;

Computing

- j) central computing resources for the Collaboration, in amounts to be decided in accordance with the applicable CERN allocation procedures;

Transport of persons

- k) basic transportation for personnel between the main parts of the CERN site, including the experimental areas;

Safety services

- l) access to its safety services for advice, inspection and verification, and first aid or other emergency help;

Administrative services

- m) access to its administrative services to assist the Collaboration in financial matters, in accordance with the Financial Rules and the Financial and Administrative Provisions for Visiting Research Teams;

Purchasing services

- n) access to its purchasing services to assist the Collaboration in placing purchase orders and contracts for its account, in accordance with the CERN Financial Rules and the CERN Purchasing Procedures. In such cases there is immediate automatic transfer of ownership to the Collaborating Institution(s) for which the purchase is made. This(These) Institution(s) shall hold CERN free and harmless from liability arising from such assistance;

Maintenance and operation

- o) the resources needed to operate and maintain the standard infrastructure and other equipment supplied by CERN as Host Laboratory.

Special services

- 5.9. A variety of services other than those specified above may be provided to the Collaboration on request, subject to the availability of resources. Such services shall be charged according to the applicable conditions.

Special equipment

- 5.10. Any additional infrastructure equipment to be provided by CERN, as well as the obligations of CERN and the Collaborating Institutions with regard to the construction, installation, maintenance and operation of such equipment, shall be explicitly mentioned in the MoU.

6. OBLIGATIONS OF THE COLLABORATING INSTITUTIONS

Basic obligations

- 6.1. In their capacity as members of the personnel of CERN⁸, the Team Members shall be subject to the authority of the Director-General of CERN and shall comply with the rules and regulations in force at CERN. Items brought onto the site by the Collaboration are subject to the rules and regulations in force at CERN.

Status of personnel

- 6.2. Each Collaborating Institution shall ensure that its Team Members shall for the duration of their Contract of Association⁹ with CERN (the “*Contract of Association*”) remain employed by, and receive a salary from, their Collaborating Institution. It is understood that where they are students, the Team Members shall remain enrolled at their Collaborating Institution, and where they have a sponsor, they shall remain under contract with, and continue to be financed by, their sponsor.
- 6.3. Each Collaborating Institution shall ensure the provision of adequate social and third party liability insurance cover to its Team Members and the members of their family accompanying them. The social insurance must include cover against the financial consequences of illness and accidents that is adequate in the Host States of CERN for the duration of the Contract of Association.
- 6.4. Each Collaborating Institution shall be liable to CERN for any cost or expense resulting from the situation where its Team Members have insufficient insurance cover.

Medical surveillance and certificates

- 6.5. Each Collaborating Institution shall remain responsible for the medical surveillance of its Team Members and, in the case of Team Members who are to work in conditions which are deemed to pose special risks (e.g. radiation controlled areas), shall supply to the CERN Medical Service a certificate of medical fitness, for the first time on registration of the Team Member at CERN and then every two years thereafter (a form for such certificates is available on the Users’ Office Web site – Article 5.7).

Safety briefings and inspections

- 6.6. The Collaborating Institutions, in conjunction with the CERN Department responsible for the physics programme of which the Experiment is part, shall ensure the safety of the Team Members and the Equipment. The Collaborating Institutions shall participate in safety meetings and studies of the Experiment. They shall ensure compliance by the Team Members with the CERN Safety Rules.

Each Team Member has specific safety responsibilities and obligations, as defined in the document “Safety Policy at CERN - SAPOCO/42”. The Team Members shall attend the CERN safety course(s) for newcomers, any compulsory CERN safety course, and all specific safety courses deemed necessary by the Collaboration.

The CERN safety personnel shall be entitled to carry out safety visits, checks and inspections as well as other safety measures set out in the document “Safety Policy at CERN - SAPOCO/42”.

Supply of Equipment

- 6.7. The Collaborating Institutions shall make available on the CERN site, according to an agreed timetable and in working order, the Equipment that they have undertaken to supply and commission. The Spokesperson shall promptly inform the CERN Director of Research of any material failure to meet the agreed schedule. For experiments with an FRC/RRB, this body shall monitor such matters.

Transport, installation and dismantling of Equipment

- 6.8. Each Collaborating Institution supplying Equipment shall be responsible for its delivery to and removal from the CERN site, always in compliance with applicable export laws and restrictions. All such Equipment shall be properly documented to indicate its ownership status (Article 6.10) handling requirements and any potential hazards that it may pose. The Collaborating Institutions shall be collectively responsible for the installation and dismantling of the Equipment.

Ownership of Equipment

- 6.9. Except as may be agreed in writing by the owner and CERN as Host Laboratory, the delivery of Equipment to the CERN site or its handling on the CERN site shall not affect its ownership. The owner and CERN as Host Laboratory may agree in writing to transfer to CERN the ownership of Equipment which is no longer required by the Collaboration.

Ownership inventory

- 6.10. As a condition of coverage by CERN's insurance policy, the Collaboration shall provide CERN with a list of the Equipment which it brings on the CERN site, specifying for each item the owning Collaborating Institution(s) or joint ownership by the Collaboration. It shall keep the list up-to-date and inform CERN promptly of any modifications.

Maintenance and operation of Equipment

- 6.11. The Collaborating Institutions shall be collectively responsible for the maintenance and operation of the Equipment, and for providing the resources necessary to carry out the experimental programme.

Assignment of Equipment

- 6.12. Any Collaborating Institution providing Equipment shall continue to make it available to the Collaboration until the Experiment has been declared completed (Article 8.2).

Early removal of Equipment

- 6.13. The Collaboration may request the removal from the CERN site under the responsibility of the owning Collaborating Institution(s) of any Equipment which in the opinion of the Collaboration is no longer required for the Experiment.

Release of space

- 6.14. Space allocated for construction and assembly shall be released when these activities have terminated. As Host Laboratory, CERN reserves the right to change the space allocation during the lifetime of the Experiment. As soon as the Experiment has been declared completed (Article 8.2), all space used by the Collaboration, including office and laboratory space, and the space used for testing and running the Experiment, shall be made available to CERN for reallocation.

Removal of Equipment

- 6.15. Equipment shall be removed from the CERN site under the responsibility of the owning Collaborating Institution(s) within six months following a request from the Leader of the CERN Department responsible for the physics programme of which the Experiment is part.
- 6.16. The dismantling and removal of the Equipment must respect the CERN Safety Rules and the laws of the countries through which the dismantled Equipment will transit during the removal, including the country of its final destination (e.g. transport, disposal, elimination of special or radioactive waste). Except as may be agreed in writing by the Collaboration and CERN, the associated costs shall be borne by the Collaboration.

7. INTELLECTUAL PROPERTY

Publication and use of data and knowledge

- 7.1. CERN is bound by its Convention to publish or otherwise make generally available the results of its experimental and theoretical work.
- 7.2. The Collaborating Institutions shall strive to publish any data and knowledge resulting from the experiment through Open Access¹⁰ journals. Where the copyright in an article shall be transferred to the publisher, each Collaborating Institution shall ensure that it has the necessary internal authorisations to approve such a transfer.
- 7.3. Subject to Articles 7.4 and 7.5, each Collaborating Institution and CERN as Host Laboratory shall be entitled to use any data and knowledge resulting from the Experiment for its own scientific non-military purposes.

Contribution of proprietary information

- 7.4. A Collaborating Institution contributing proprietary information to the Collaboration shall ensure that it has or has procured the rights to use, and to contribute to the Collaboration for use by the other Collaborating Institutions, such proprietary information for the execution of the Experiment. The term “use” shall include any integration, modification, enhancement and redistribution. Where the use of proprietary information is subject to restrictions, the contributing Collaborating Institution shall disclose them in writing when making its contribution available to the Collaboration. The obligations defined in this article shall apply whether or not the proprietary information is pre-existing or developed in the execution of the Experiment, and whether or not it was developed individually or jointly with one or more other institution(s).

Use of proprietary information

- 7.5. The contribution by a Collaborating Institution of any proprietary information, including information protected by trademark, patent or copyright, shall not create any right in respect of such information for the other Collaborating Institutions, other than a free, irrevocable and non-exclusive licence to use such information in the execution of the Experiment.

Publication and disclosure of proprietary information

- 7.6. Subject to the intellectual property rights of the Collaborating Institutions having contributed the proprietary information and taking into account any potential for commercial exploitation, the Collaborating Institutions shall strive to publish and make publicly available all proprietary information contributed to the Collaboration. In particular, they shall consider making any software available under Open Source licence conditions.

Limitation of liability

- 7.7. The Collaborating Institutions provide no warranties or representations of any kind to each other.
- Each Collaborating Institution shall use the data and knowledge resulting from the Experiment and the proprietary information contributed to the Collaboration at its own risk.
- The Collaborating Institutions shall have no liability to each other with respect to the subject matter of this Article 7.

8. FINAL PROVISIONS

Modification of the Experiment and amendment to the MoU

- 8.1. The Collaboration shall agree on any modification of or addition to the Experiment that would require amending the MoU and shall inform CERN as Host Laboratory of such changes. For experiments with an FRC/RRB, such changes shall also be approved by this body. Where the changes constitute a substantial change to the Experiment, they shall be submitted to the Experiment Committee for approval by the CERN Research Board and the Director-General. Any amendment to the MoU shall be signed by the representatives of the parties to the MoU.

Duration of applicability of the MoU

- 8.2. Unless another duration is specified in the MoU, the MoU shall remain in force until the CERN Director of Research, in agreement with the Spokesperson, has declared the Experiment completed, the Equipment has been dismantled and the arrangements for its disposal agreed in writing.
- 8.3. Notwithstanding the foregoing, the General Conditions shall remain in force.

Observance of the MoU and the General Conditions

- 8.4. The MoU is not legally binding but the parties to the MoU recognise that the success of the Collaboration depends upon their adherence to its provisions. Any default under its provisions shall be dealt with, in the first instance, by the Collaboration in consultation with the CERN Management and if necessary then by the FRC/RRB (where such a body exists).
- 8.5. Notwithstanding the foregoing, the provisions of the General Conditions are binding.

Liability

- 8.6. Except as specifically stipulated in the General Conditions, the Parties shall not be liable to each other for any loss or damage arising in connection with the Experiment.

Arbitration

- 8.7. If a dispute within the Collaboration or between the Collaboration and CERN as Host Laboratory cannot be resolved amicably, it shall be referred by any party to the dispute for arbitration to the President of the CERN Council, whose decision shall be binding and final, without right of revision or appeal.

Relevant documents

- 8.8. The following documents apply to the execution of the MoU:
- the CERN Guide for Newcomers;
 - Financial and Administrative Provisions for Visiting Research Teams;
 - Use of CERN Computing Facilities - Operational Circular No 5 (<http://cern.ch/ComputingRules/>);
 - the Safety Guide for experiments at CERN (<http://cern.ch/SafetyGuide/>);
 - the Safety Policy at CERN - SAPOCO/42;
 - Purchasing Rules and Procedures for Experiments at CERN

Definitions

- ¹ **Visiting Research Team:** A Collaborating Institution's personnel involved in the Experiment.
- ² **Approved Experiment:** An Experiment approved by the CERN Research Board and the Director-General after consideration of a written proposal submitted to the appropriate Experiment Committee, taking into account scientific interest, technical feasibility and the constraints imposed by available resources.
- ³ **CERN site:** All parts of CERN's fenced-in domain and all of its underground works.
- ⁴ **Recognised Experiment:** An experiment in fields allied to particle physics, such as astroparticle physics, the full definition of which was decided by the CERN Research Board (CERN/DG/RB 99-285). The conditions applicable to such experiments are decided by the CERN Research Board on a case-by-case basis.
- ⁵ **Funding Agency:** A body providing resources to one or more of the Collaborating Institutions for the purpose of participation in the Experiment. A Collaborating Institution may itself be a Funding Agency.
- ⁶ **Common Project:** A project that the Collaboration has decided to manage jointly under the authority of the Collaboration Management.
- ⁷ **Common Funds:** Funds contributed by the Funding Agencies to joint accounts administered by the Collaboration Management.
- ⁸ **Member of the personnel of CERN:** All Team Members who are not employed by CERN are required to sign a Registration Form, in which they apply to become an associated member of the personnel of CERN.
- ⁹ **Contract of Association:** The contract defined in Article RI 2.04 of the Staff Rules and Regulations of CERN.
- ¹⁰ **Open Access:** The free, irrevocable, worldwide right of access to, and use of, a work in any digital medium for lawful purposes, subject to proper attribution of authorship.

Annex 4

Management of the RD-51 Collaboration

Annex 4.1 Management Structure of the RD-51 Collaboration.

1. Concerning all scientific matters the Collaboration is governed by the **RD-51 Collaboration Board (CB)**, which is also responsible for coordinating the financial planning and other resource issues of the Collaboration and, in particular, for managing the Common Fund. The CB is composed of one representative from each collaborating Institute, with voting rights; the Spokespersons, the Finance Coordinator, and the Secretary of the CB as ex-officio members, without voting rights. The CB elects the **Chairperson of the CB** and his/her Deputy from among the Members of the Collaboration for a period of two years. The CB Chairperson nominates the **Secretary** of the CB from among the Members of the Collaboration for a period of two years.
2. The CB decides on detailed procedures for the management of the Collaboration, setting up specific bodies and functional positions for such tasks. These rules and procedures are laid down in separate documents.
3. All scientific and technical issues are discussed in **Collaboration plenary meetings** before any major decisions are taken.
4. The two **Spokespersons** as defined in the General Conditions Applicable to Experiments Performed at CERN (paragraph 2.2), represent the Collaboration to the outside. The Spokespersons are elected by the CB for two years. The two Spokespersons agree, before implementation, upon the actions to be taken. In case they do not reach an agreement the Chairperson of the CB will negotiate a common line of action.
5. The **Collaboration Board** is responsible for coordinating the financial planning and other resource issues of the Collaboration. The **Finance Coordinator** is responsible for managing the Common Fund, following the deliberations of the Collaboration Board. The CB elects the **Finance Coordinator** from among the Members of the Collaboration for a period of two years.
6. The Group Leader in Matters of Safety (**GLIMOS**) is responsible to the CERN Management for all matters of safety concerning RD-51 personnel, work and equipment on the CERN premises. The GLIMOS is appointed by the CERN PH Department Leader after consultation with the Collaboration Management.
7. The **Management Board (MB)** supervises the progress of the work program along the lines defined by the CB and prepares decisions for and makes recommendations to the CB. The MB comprises five members elected by the CB from among the members of the Collaboration along with the following *Ex officio* members: the two Spokespersons, the CB Chairperson, and Deputy Chairperson, the Finance Coordinator, and the Secretary of the MB. The Spokespersons chair the MB and nominate the MB-Secretary from among the Members of the Collaboration for a period of two years.

8. Elected members of the RD-51 Management may be re-elected for further terms of office.
9. The work programme of the Collaboration is executed by working groups lead by one or more **Conveners**. The Conveners are nominated by the Spokespersons after consultation of the collaborating Institutes. They coordinate the execution and monitor the progress of the working group tasks as defined by the CB. They report regularly to the MB.

Annex 4.2 Management and other senior positions within the RD-51 Collaboration and the names of the people currently holding them

Collaboration Board

Chairperson

Silvia Dalla Torre

Deputy

Klaus Desch

Elected Members of the MB

Amos Breskin, Ioanis Giomataris, Fabio Sauli,
Harry van der Graaf, Andrew White

Spokespersons

Leszek Ropelewski, Maxim Titov

Working Group Conveners

WG1

Alex Bondar, Paul Colas, Serge Duarte Pinto

WG2

Vladimir Peskov, Harry van der Graaf

WG3

Frank Simon, Andrew White

WG4

Alain Bellerive, Rob Veenhof

WG5

Werner Riegler

WG6

Rui de Oliveira, Ioanis Giomataris, Hans Taureg

WG7

Matteo Alfonsi, Yorgos Tsipolitis

Finance Coordinator

Hans Taureg

GLIMOS

Matteo Alfonsi

Annex 5

Procedure for the payment of Common Fund contributions

CERN will issue, each calendar year, on the basis of the agreed costs and sharing, invoices in Swiss Francs to the Funding Agencies of the various Institutes for payment during that year; any necessary adjustments will be made and taken into account in the following year. Payment of 50% of the amount invoiced will be due not later than 10 February and the remaining 50% not later than 10 June. Advance payments are encouraged. The Collaboration Board will be informed at its autumn meeting each year of the balance of the common fund.

Annex 6

Common Fund Contributions [CHF]

	country	town	institute	CHF
1	Canada	Ottawa	Carleton University	2000
2	China	Hefei	University of Science and Technology of China	2000
3	China	Lanzhou	Institute of Nuclear Research	2000
4	France	Annecy le Vieux	LAPP	2000
5	France	Grenoble	Institut Max von Laue – Paul Langevin - ILL	2000
6	France	Grenoble	Laboratoire de Physique Subatomique et de Cosmologie	2000
7	France	Saclay	CEA IRFU	2000
8	Germany	Bonn	Physikalisches Institut Rheinische Friedrich-Wilhelms Universität	2000
9	Germany	Braunschweig	Physikalisch-Technische Bundesanstalt	2000
10	Germany	Freiburg	Physikalisches Institut Albrecht-Ludwigs Universität	2000
11	Germany	Hamburg	Desy	2000
12	Germany	München	Max-Planck-Institut für Physik	2000
13	Germany	München	Physik Department E18 Technische Universität München	2000
14	Great Britain	Sheffield	University of Sheffield	2000
15	Greece	Athens	INP NCSR "Demokritos"	2000
16	Greece	Athens	National Technical University of Athens	2000
17	Greece	Athens	University of Athens	2000
18	Greece	Thessaloniki	Aristotle University of Thessaloniki	2000
19	Hungary	Budapest	KFKI Research Institute for Particle and Nuclear Physics	500
20	Hungary	Budapest	Eötvös Lorànd University	500
21	India	Kolkata	Saha Institute of Nuclear Physics	2000
22	India	Mumbai	Tata Institute of Fundamental Research	2000
23	Israel	Rehovot	Weizmann Institute of Sciene	2000
24	Italy	Alessandria	INFN and University	2000
25	Italy	Bari	INFN and University	2000
26	Italy	Cagliari	INFN and University	2000
27	Italy	Frascati	LNF-INFN	2000
28	Italy	Naples	INFN and University	2000

MoU for the RD-51 Collaboration

	country	town	institute	CHF
29	Italy	Novara	TERA Foundation	1000
30	Italy	Rome	Sanita Group, INFN	2000
31	Italy	Siena	University of Siena and INFN Pisa	2000
32	Italy	Trieste	INFN and University	2000
33	Japan	Kobe	Kobe University	2000
34	Mexico	Mexico City	Universidad National Autonoma de Mexico	2000
35	Netherlands	Amsterdam	NIKHEF	2000
36	Portugal	Aveiro	University of Aveiro	2000
37	Portugal	Coimbra	University of Coimbra	2000
38	Portugal	Coimbra	Laboratorio de Instrumentacao e Fisica Experimental de Particulas	2000
39	Russia	Novosibirsk	Budker Institute of Nuclear Physiks	2000
40	Russia	St Petersburg	St Petersburg Nuclear physics Institute	2000
41	Spain	Barcelona	IFAE	2000
42	Spain	Valencia	Universidad Politecnica de Valencia (UPVA)	2000
43	Spain	Valencia	Consejo Superior de Investigaciones Cientificas (CSIC) Instituto de Fisica Corpuscular (IFIC)	2000
44	Spain	Zaragoza	University of Zaragoza	2000
45	Switzerland	Geneva	CERN PH	2000
46	Switzerland	Geneva	DPNC, section de physique, Université de Genève	2000
47	Tunisia	Tunis	Centre National des Sciences et Technologies Nucleaire	0
48	Turkey	Bursa	Department of Physics Uludag University	0
49	USA	Argonne, IL	Division of High Energy Physics Argonne National Laboratory	2000
50	USA	Arlington, TX	University of Texas, Arlington	2000
51	USA	Melbourne, FL	Florida Institute of Technology	2000
52	USA	Tucson, AZ	University of Arizona, Dept. of Physics	2000
53	USA	Williamsburg, VA	College of William and Mary, Physics Dept.	2000
54	USA	Upton, NY	Brookhaven National Laboratory	2000

Annex 7

Intellectual Property contributed to the RD51 Collaboration:

CERN

- o GEM technology

(1) The first 'patent family' covers the use of GEM foils as gas detectors. In the US, 2 patents have been granted: US6198798 (Planispherical parallax-free X-ray imager based on the gas electron multiplier) and US6011265 (Radiation Detector of very high performance). A PCT application has been filed, and is now being examined at the national level.

Furthermore, the use of GEM foils as gas detectors is also covered by a patent owned by CNRS (the CAT patent). CERN and CNRS have concluded an agreement in 2006, whereby CERN has obtained a sub-licensable license for the CAT technology. Under this agreement, CERN can manufacture and sell GEM foils with attached licenses covering both the GEM and the CAT patents.

Applicable restriction: no exploitation of the GEM technology can be carried out in the field of 'dosimetry in water phantom'.

(2) A second 'patent family' covers part of the method implemented by CERN for manufacturing GEM foils (MCML patent WO03055288: Method for making a multilayer module with high-density printed circuits).

Applicable restriction: no use of this method may be made in Poland.

(3) CERN is also considering filing a patent concerning the manufacture of large area GEM foils. This could be relevant for both the RD-51 programme and for the exploitation of the Collaboration's results.

Saclay

1. BD1151

Inventors : I. Giomataris, Ph. Rebourgeard, J. P. Robert et G. Charpak

« Détecteur de position, à haute résolution, de hauts flux de particules ionisantes »

EN 95 11928 du 11/10/1995, Brevetome : B 12271PV, Publi INPI N° 2 739 9412,

Joint ownership CEA, BIOSPACE

2. BD1203

Inventors : I. Giomataris, Ph. Rebourgeard, J. P. Robert et G. Charpak

« Détecteur de particules à électrodes parallèles multiples et procédé de fabrication de ce détecteur »

EN 97 04617 du 15/04/1997, Brevetome : B 12743PV, Publi INPI N° 2 762 096

Joint ownership CEA, BIOSPACE

Exclusive rights are reserved for BIOSPACE by the two patents above in the fields of biological and medical applications, industrial radiography, control of luggage and containers, and waste type separation.

3. Brevet en preparation

Inventeurs : I. Giomataris et R. De Oliveira

« MicroBulk, a new fabrication technology of Micromegas detector”

Joint ownership CEA-CERN