

October 24, 2008

Memorandum of Understanding

for Collaboration in the NA61/SHINE experiment

**for Study of Hadron Production in
Hadron-Nucleus and Nucleus-Nucleus
Collisions at the CERN SPS**

between

THE EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH, ("CERN"),
an Intergovernmental Organization having its seat at Geneva, Switzerland, as Host Laboratory,
represented by J. Engelen, Chief Scientific Officer,
on the one hand

and

the following Institutions as members of the NA61/SHINE Collaboration (hereinafter referred to jointly as "the Collaboration" or "the Collaborating Institutions" and individually as "Collaborating Institution"):

University of Athens, Athens, Greece

represented by A. D. Panagiotou

University of Bergen, Bergen, Norway

represented by D. Röhrich

University of Bern, Bern, Switzerland

represented by A. Ereditato

KFKI Research Institute for Particle and Nuclear Physics, Budapest, Hungary

represented by G. Vesztegombi

Cape Town University, Cape Town, South Africa

represented by J. Cleymans

Jagiellonian University, Cracow, Poland

represented by R. Planeta

Joint Institute for Nuclear Research, Dubna, Russia

represented by G. L. Melkumov

Fachhochschule Frankfurt, Frankfurt, Germany

represented by W. Rauch

University of Frankfurt, Frankfurt, Germany

represented by M. Gazdzicki

University of Geneva, Geneva, Switzerland

represented by A. Blondel

Forschungszentrum Karlsruhe, Karlsruhe, Germany

represented by R. Engel

Jan Kochanowski University, Kielce, Poland

represented by G. Stefanek

Institute for Nuclear Research, Moscow, Russia

represented by A. Kurepin

LPNHE, University of Paris VI and VII, Paris, France

represented by J. Dumarchez

Pusan National University, Pusan, Republic of Korea

represented by I.-K. Yoo

Faculty of Physics, University of Sofia, Sofia, Bulgaria

represented by D. Kolev

St. Petersburg State University, St. Petersburg, Russia

represented by G. A. Feofilov

State University of New York, Stony Brook, USA

represented by R. Lacey

Institute for Particle and Nuclear Studies, KEK, Tsukuba, Japan

represented by T. Kobayashi

Warsaw University of Technology, Warsaw, Poland

represented by W. Peryt

University of Warsaw, Warsaw, Poland

represented by W. Dominik

Soltan Institute for Nuclear Studies, Warsaw, Poland

represented by E. Rondio

Rudjer Boskovic Institute, Zagreb, Croatia

represented by K. Kadija

ETH, Zurich, Switzerland

represented by A. Rubbia

on the other hand,

CERN and the Collaboration hereinafter collectively referred to as "the Parties";

WHEREAS

- In November 2006 a Collaboration under reference CERN-SPSC-2006-034/SPSC-P-330 ("the Proposal") proposed to CERN, as Host Laboratory, an experiment ("the Experiment") to Study Hadron Production in Hadron-Nucleus and Nucleus-Nucleus Collisions at the CERN SPS ("the Experimental program") to be performed using the upgraded NA49 facility.
- The NA49 Collaboration Council agreed at its meeting on October 6, 2003, to transfer the ownership of the NA49 facility to the new Collaboration upon approval of the Experiment by the CERN Research Board (RB). The NA61 Collaboration agrees to assume the responsibility for removing the detector, if required, after completion of the NA61 program. The agreement concerning the transfer is given in Annex I and shall be signed forthwith upon the entry into force of this Memorandum of Understanding ("this MoU").
- At its meeting on 6-7 February 2007, the SPS Committee (SPSC), based on the Proposal and its Addendum 1 (CERN-SPSC-2007-004), recommended approval of the pilot run (2007) of the Experimental program. Approval was subsequently given by the RB at its meeting on 21 February 2007.
- At its meeting on 26-27 June 2007, the SPSC, based on the additional information in Addendum 2 to the Proposal (CERN-SPSC-2007-019), recommended approval of the 2008 run and of the first phase of Heavy Ion running in 2009, subject to the availability of resources to provide the required beam. The RB subsequently approved the 2008 run at its meeting on 25 September 2007. Approval of the the first ion run will be considered later.
- Agreement on the execution of the Experimental program shall be effected through this MoU between CERN as Host Laboratory and each Collaborating Institution.

IT IS HEREWITH UNDERSTOOD AS FOLLOWS:

Article 1. Parties to this MoU

1. The Parties to this MoU are CERN as Host Laboratory and the Collaborating Institutions.

Article 2. Purpose of this MoU

1. The purpose of this MoU is to define the distribution of responsibilities for the execution of the Experimental program of the NA61/SHINE Experiment.

Article 3. Responsibilities of CERN as Host Laboratory

1. The general obligations of CERN as Host Laboratory and of the Collaborating Institutions are contained in the "General Conditions applicable to Experiments at CERN" ("the General Conditions"). This document is an integral part of this MoU and is attached as Annex V this MoU.
2. CERN shall keep in operation the sources and accelerators necessary for the execution of the Experimental program at least until the program approved by the RB has been completed.
3. CERN shall provide the experimental areas in the 887 experimental hall which were used by the NA49 Collaboration.
4. CERN PH Department has agreed to provide initially the offices (2-A02, 2-A04, 1-A02, 1-A14, 1-A16, R-A16) and workshops (R-A10, R-A20) in Bldg. 892 which are currently used by the NA49 and NA61 Collaborations as well as the offices 51-1-024, 1-1-072 and 1-1-074 used now by the NA61 collaborators from the University of Geneva. The evolution of the NA61 office space needs/allocation will be agreed as the need arises and subject to the General Conditions.
5. CERN shall provide access to the necessary services available at CERN for the installation of the new equipment and execution of the Experiment in the 887 experimental hall.
6. CERN agrees to the installation of the new experimental equipment in the 887 experimental hall and, subject to resources and schedule constraints, to endeavour to provide beams of hadrons and nuclei in the H2 beam line with characteristics as requested by the Collaboration (see CERN-SPSC-2007-004, chapter 4.1) and agreed upon with the AB Department, the SPSC, and other involved and affected parties from time to time and as approved by the RB.

7. CERN shall provide access to the CERN Electronics Pool, from which equipment may be rented at the official Electronics Pool rates and under the standard conditions for CERN experiments.
8. CERN shall provide and pay for the maintenance and operation (M&O) of the two NA61 superconducting magnets.
9. CERN shall pay the energy costs of the experiment, including those of the above-mentioned superconducting magnets.
10. CERN shall provide access to IT resources and contribute to their cost as specified in Annex II.

Article 4. Responsibilities of the Collaborating Institutions

1. The distribution of responsibilities of the Collaborating Institutions with respect to the construction, maintenance and operation of the Experiment, as well as data calibration and analysis is given in Annex IV.
2. The responsibilities for conducting the experiment at CERN shall be shared by the Collaborating Institutions according to the expertise needed for specific studies. The distribution of responsibilities will be reviewed and modified from time to time by the Collaboration Board defined in the Collaboration Bylaws ("the Bylaws"), attached as Annex III.

Article 5. Financial Provisions

1. To support the costs of the experimental effort at CERN a Common Fund Account has been set up for NA61/SHINE. Each Collaborating Institution shall contribute to the Common Fund annually an amount which is fixed by the Collaboration Board (5k CHF for 2007 and 7k CHF for 2008) for the whole period of data taking. Exception to this rule may be granted in specific cases by the Collaboration Board. The amount of the contribution may be changed by a decision of the Collaboration Board to adapt to future needs of the Experimental program.
2. The common fund shall be available to cover incidental expenses at CERN, including, but not limited to, electronic pool charges, material cost, telephone charges, services performed by CERN or by outside contractors on the CERN site, fabrication charges from internal and external machine shops, and other expenses incurred by members of the Collaboration during the construction, the maintenance and the operation of the experiment at CERN.

3. Signature authority for the Common Fund shall rest with each of the Spokesperson, Deputy Spokesperson, Board Chairman, Deputy Board Chairman and Technical Coordinator of the Experiment. Expenses of 5000 EUR or more shall be announced to and approved by the Collaboration Board in advance.
4. In order to cover the costs of the two major detector upgrades (the TPC readout upgrade and the construction of the Projectile Spectator Detector) additional financial contributions by some of the Collaborating Institutions are foreseen. These are listed in Table 1.

Item	Total Cost (kCHF)	Expected contributions
TPC read-out upgrade: 2008	440	
		Budapest (220)
		Swiss Groups (100)
		Karlsruhe (100)
		Common Fund (20)
PSD: 2008	1100	
		IKF Frankfurt (75)
		Bergen (20)
2009-2010		
		Bergen (100)
		Polish Groups (300)
		Moscow (150)
		IKF Frankfurt (245)
		Stony Brook (200)

Table 1: The estimate of the cost of the two major upgrades and the expected sources of money. Polish groups stand for UJ Krakow, Kielce, UW Warsaw, WUT Warsaw and SINS Warsaw and Swiss groups stand for UB Bern, ETH Zurich and UG Geneva. The numbers in brackets indicate the expected contributions in kCHF.

Article 6. Manpower Provisions

1. The Collaborating Institutions presently responsible for the execution of the Experiment are given in Annex IV.
2. Each Collaborating Institution shall supply manpower for shift work during data taking periods. The number of such people should be in proportion to the number of members of the Collaborating Institutions.

Article 7. Coordination

Function	Name
Board Chairman	Alain Blondel (till June 30, 2008) Geroge Vesztergombi (from July 1, 2008)
Deputy Board Chairman	Peter Seyboth
Spokesperson(s)	Marek Gazdzicki/George Vesztergombi (till June 30, 2008) Marek Gazdzicki (from July 1, 2008)
Deputy Spokesperson	Alessandro Bravar
Detector Board Coordinator	Zoltan Fodor
Software Board Coordinators	Grzegorz Stefanek/Boris Popov
Physics Board Coordinator	Peter Seyboth
Contact Person at CERN	Alessandro Bravar
GLIMOS	Zoltan Fodor

Table 2: The structure of the NA61 Collaboration.

1. The execution of the Experiment shall be coordinated according to the Bylaws.
2. The persons presently carrying specific responsibilities in the Experiment are listed in Table 2.
3. The Collaborating Institutions are presently represented by the persons shown in Table 3. Any change of representation shall be notified to the Collaboration Board Chairman in writing.

Article 8. Publications

1. Each Collaborating Institution that has prepared any article, publication, Ph.D. thesis or similar academic document relating to the Experiment shall send one copy to the CERN Library. Any such document shall individually acknowledge the participation in the Experiment of the Collaborating Institutions.
2. The chairman of the Collaboration Board shall maintain the Collaboration List comprising the Collaborating Institutions and the names of participating members. However, for each publication the Collaboration Board member from each institution shall decide on the author list from that institution.

As general guideline, the authors of papers shall be those collaborators who have contributed to the taking or the analysis of the data reported in the paper and who have

Institute	Representative
University of Athens, Athens, Greece	A. D. Panagiotou
University of Bergen, Bergen, Norway	D. Röhrich
University of Bern, Bern, Switzerland	A. Ereditato
KFKI Research Institute for Particle and Nuclear Physics, Budapest, Hungary	G. Vesztergombi
Cape Town University, Cape Town, South Africa	J. Cleymans
Jagiellonian University, Cracow, Poland	R. Planeta
Joint Institute for Nuclear Research, Dubna, Russia	G. L. Melkumov
Fachhochschule Frankfurt, Frankfurt, Germany	W. Rauch
University of Frankfurt, Frankfurt, Germany	M. Gazdzicki
University of Geneva, Geneva, Switzerland	A. Blondel
Forschungszentrum Karlsruhe, Karlsruhe, Germany	R. Engel
Jan Kochanowski University, Kielce, Poland	G. Stefanek
Institute for Nuclear Research, Moscow, Russia	A. Kurepin
LPNHE, University of Paris VI and VII, Paris, France	J. Dumarchez
Pusan National University, Pusan, Republic of Korea	I.-K. Yoo
Faculty of Physics, University of Sofia, Sofia, Bulgaria	D. Kolev
St. Petersburg State University, St. Petersburg, Russia	G. A. Feofilov
State University of New York, Stony Brook, USA	R. Lacey
Institute for Particle and Nuclear Studies, KEK, Tsukuba, Japan	T. Kobayashi
Warsaw University of Technology, Warsaw, Poland	W. Peryt
University of Warsaw, Warsaw, Poland	W. Dominik
Soltan Institute for Nuclear Studies, Warsaw, Poland	E. Rondio
Rudjer Boskovic Institute, Zagreb, Croatia	K. Kadija
ETH, Zurich, Switzerland	A. Rubbia

Table 3: The list of the participating institutes and their representatives.

been collaboration members for six months or more. Normally individuals are dropped as authors one year after they leave the Collaboration; however, individuals who have made special contributions to a given topic, such as hardware or software or analysis, should be retained on the author list of papers for which their work is relevant. Collaborators who have worked on the installation of new equipment but have left the collaboration prior to the taking of data shall be included on the initial papers of the collaboration using that equipment. Technical papers need only list as authors those individuals who contributed to that project, but the 'NA61 Collaboration' should be acknowledged.

3. The authors of papers shall be listed in alphabetical order, preceded or followed by the phrase 'NA61 Collaboration'. Papers which result from students' theses should be so indicated by appropriate footnotes. Papers for conference proceedings are normally submitted in the speaker's name, plus other major contributors if appropriate, plus the other NA61 authors. The other NA61 authors may be abbreviated to 'NA61 Collaboration' only if space is limited.
4. Further details of the publication policy which shall be followed by the Collaborating

Institutions are defined in the Bylaws.

Article 9. Assignment

1. None of the Parties shall assign its rights under this MoU without prior written approval by the other Parties.

Article 10. Observance of this MoU and General Conditions applicable to Experiments at CERN

1. This MoU is not legally binding, but the Collaborating Institutions and Funding Agencies recognize that the success of the Collaboration depends upon all its members adhering to its provisions. Any default shall be dealt with, in the first instance, by the Collaboration and if necessary then by the resolution mechanism defined the General Conditions.
2. Notwithstanding the foregoing, the provisions of the General Conditions and Annex I are binding.

Article 11. Agreements and Protocols relevant to the Experiment

1. The Experiment is executed in the framework of the scientific programme approved by the CERN Council, and subject to the bilateral Agreements and Protocols between CERN and non-Member States, whose provisions shall prevail over this MoU.

Article 12. Duration

1. This MoU shall enter into force on the date of its signature and 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, and the Collaboration has been dissolved, it being understood that Articles 8 and 9 above shall survive the termination of this MoU.
2. Notwithstanding the foregoing, the General Conditions shall remain in force.

Article 13. Annexes

All of the Annexes to this MoU are an integral part of it.

1. Annex I: Agreement on the transfer of the NA49 facility
2. Annex II: Agreed contributions from CERN IT and TS Departments.

3. Annex III: Bylaws of the NA61/SHINE Collaboration. from the NA49 Collaboration to the NA61 Collaboration.
4. Annex IV: List of tasks and present sharing of responsibilities.
5. Annex V: General Conditions applicable to Experiments at CERN.

This MoU is produced in forty eight (48) original documents, each pair signed by a Collaborating Institution and by CERN as Host Laboratory.

The European Organization for Nuclear Research (CERN)

and

declare that they agree on the present Memorandum of Understanding for the Execution of the NA61 Experiment.

Done in Geneva

Done in

on

on

For CERN

For

Jos Engelen
Chief Scientific Officer

Annex I

Agreement on the transfer and use of, and responsibility for, equipment of the NA49 Collaboration

The Institutes of the NA49 Collaboration (jointly: "the NA49 Collaboration"), represented by the Spokesperson

and

The Institutes of the NA61 Collaboration (jointly: "the NA61 Collaboration"), represented by the Spokesperson

and

The European Organization for Nuclear Research ("CERN") as the Host Laboratory,
(jointly: "the parties")

herewith agree as follows:

1. The NA49 Collaboration has made or shall make available, as per (an) agreed date(s), for use by the NA61 Collaboration for the exclusive purpose of the NA61 Experiment, all elements which together make up the equipment of the NA49 Experiment, including those situated at the SPS ("the equipment").
2. The equipment inter alia includes 25 radioactive sources, the transfer of which has been executed by the NA49 Glimos (Siegfried Wenig) and the NA61 Glimos (Zoltan Fodor) on 18 September 2007. The formal responsibility for the sources has been transferred to Mr. Fodor.
3. As from the agreed date(s), the NA61 Collaboration shall be liable to the NA49 Collaboration and CERN as the Host Laboratory for the fulfillment of all obligations which may exist in respect of the equipment, including its removal and disposal, pursuant to the relevant Memoranda of Understanding and the current version of the General Conditions applicable to Experiments at CERN ("the General Conditions"), and shall hold the NA49 Collaboration and CERN free and harmless from liability relating to the equipment. It is understood that in case of conflict between the provisions of the relevant Memoranda of Understanding and/or the General Conditions on the one hand, and the provisions of this Annex on the other hand, the latter shall prevail.
4. Notwithstanding any of the foregoing, ownership in the equipment shall remain vested in the NA49 Collaboration until such date as the parties shall agree.

5. Any dispute between the NA49 Collaboration and the NA61 Collaboration concerning the interpretation and application of this Annex shall be settled by their spokespersons, and any dispute involving CERN by the Director-General and the spokesperson(s) concerned or, failing agreement, by the President of the CERN Council, whose decision shall be final and binding upon the parties to the dispute.
6. This Annex shall remain in force for as long as required to give effect to its provisions, it being understood that articles 3 and 5 shall survive its termination, howsoever caused.

Done in Geneva

on

For the NA49 Collaboration

Peter Seyboth
Spokesperson

Done in Geneva

on

For the NA61 Collaboration

Marek Gazdzicki
Spokesperson

Done in Geneva

on

For CERN

Jos Engelen
Chief Scientific Officer

Annex II

Agreed contribution from CERN IT Department

Tables 4 and 5 show the storage volume and CPU capacity potentially needed for the execution of the NA61 experiment in the period 2007-2012. The required resources were estimated assuming the run schedule with proton beam as given in Addendum-2 to the NA61 proposal as well as an ion beam schedule delayed by one year as expected from the current discussion with the CERN authorities. The estimates of required resources are based on the experience gained during the execution of the NA49 experiment.

	2007	2008	2009	2010	2011	2012
Raw data [TB]	2	50	30	70	70	30
DST [TB]	1	30	10	50	50	20
miniDST [TB]	0.1	1	1	2	3	1
Sum [TB]	3.1	81	41	122	123	51

Table 4: An estimate of the storage resources needed for the execution of the NA61 experiment during the expected period of data taking.

We plan to store the raw data at the CERN IT center. A CDR data rate up to 50 MB/s (4.2 TB per day) is expected. This will require 2 tape drives during the running period, one to absorb the data rate and one 'spare' drive. With the miniDSTs staged permanently on disk one can reduce the number of drives to less than one on average during the analysis periods over the year. The cost of the tape drives would be about 20k CHF, once to be paid at the end of 2008, next time in 2011.

In order to be able to use CDR efficiently, continue data processing and analysis as well as minimize the re-stage of data during the year a minimum of 20 TB disk space is required. For 2007 about 5 TB is sufficient. The raw data, DSTs and miniDSTs will be stored on tapes in the CERN IT center.

	2007	2008	2009	2010	2011	2012
RECO [KSI2000]	10	20	35	15	65	100
Analysis [KSI2000]	10	10	35	35	180	240
Sum [KSI2000]	20	30	70	50	245	340

Table 5: An estimate of the CPU resources needed for the execution of the NA61 experiment during the expected period of data taking.

The estimated costs of the computing resources are given in Table 6. The calculations are

based on current IT prices. The actual costs may differ from the estimated costs due to changes in usage of the resources and/or actualization of their prices.

The NA61 collaboration intends to use computing resources available in the collaborating institutes (see Table 7 in Addendum-2 to the NA61 proposal) for Monte-Carlo simulation and analysis of miniDSTs. Furthermore, the collaboration considers the possibility to use GRID resources for the reconstruction and analysis of the data. Finally, it is planned to have a back-up copy of the raw data and DSTs outside CERN.

The CERN IT department agrees to supply the computing resources listed above. The actual costs will be covered jointly by the NA61 collaboration and the CERN IT department. The IT department offers to pay 50% of the CPU, disk space and tape drive costs per year in 2007 and 2008. This offer is expected to be extended for the following years of the NA61 execution provided the support of non-LHC experiments remains at a level similar or higher than in 2007 and 2008. The NA61 Collaboration will cover the remaining part of the cost of the computing resources from the common fund. The last two rows in Table 6 show the expected contributions of the CERN IT department and the NA61 collaboration.

Costs [KCHF]	2007	2008	2009	2010	2011	2012
CPU	11	3	8	7	20	7
Tape	1.6	40.5	20.5	61	61.5	25.5
Tape slot	0.3	8	4	12	12	5
Tape drive	0	20	0	0	10	0
Disk	10	24	9	18	10	5
Sum	22.9	95.5	41.5	98	113.5	42.5
IT contribution	10.9	27.5	10.5	18.5	46.6	6.5
NA61 costs	12	68	31	79.5	66.9	36

Table 6: An estimate of the cost of the computing resources needed for the execution of the NA61 experiment for the expected period of data taking.

Furthermore, the CERN IT department offers to the NA61 collaboration the standard CERN IT services, in particular:

- free use of the CERN communication and documentation web-tools, in particular IN-DICO, EDMS and TWIKI pages,
- privileges for the NA61 production account on lxbatch (prodna61) to run production on real and simulated data.

Annex III

Bylaws of the NA61 collaboration

Ratified by the NA61 Collaboration Board on December 18, 2007

1. Organization overview

The spokesperson runs the daily business of the NA61 collaboration and represents it to the outside. The spokesperson reports to the Collaboration Board. He is assisted by a deputy spokesperson and a contact person of the collaboration at CERN.

Each member institute of the NA61 Collaboration is represented by a delegate in the NA61 Collaboration Board. The Collaboration Board takes decisions on membership, finances and bylaws of the collaboration.

The spokesperson is advised and helped by a physics board on matters of experimental program and analysis, a detector board on technical matters and a software board on software issues. The chairman of the detector board serves as technical coordinator of the collaboration.

Collaboration meetings should be organized by the spokesperson typically twice each year. All technical innovations and analysis software developed in connection with the work of the collaboration shall be freely available within the collaboration.

2. Collaboration board

(a) membership

Each institution of the collaboration nominates a delegate. In addition there are ex-officio members: the spokesperson, his deputy, the contact person at CERN, the chairmen of the physics, detector and software boards and a student representative.

(b) chairman

The collaboration board elects the chairman and his deputy by simple majority for a period of 2 years. Re-election is allowed. The chairman organizes regular meetings of the collaboration board. Furthermore, he writes minutes of the decisions reached at these meetings which shall be made available to the whole collaboration.

(c) function

The Collaboration Board takes decisions on the physics program, finances, bylaws and membership of the collaboration. The Collaboration Board will strive to reach decisions by consensus.

(d) changes of institution membership

Changes of membership of institutions are voted on by the Collaboration Board. A 3/4 participation and a 2/3 majority of those voting is required for a valid decision. Ex officio members do not vote.

(e) changes of bylaws and publication policy

Changes of bylaws and publication policy are voted on by the Collaboration Board. A 3/4 participation and a 2/3 majority of those voting is required for a valid decision. Ex officio members do not vote.

(f) election of the spokesperson

The chairman of the Collaboration Board organizes the election of the spokesperson. Candidates from within the NA61 collaboration can be proposed by any member of the collaboration at the latest 2 weeks before the scheduled election. The spokesperson is elected by the Collaboration Board with simple majority. In case of more than 2 candidates a runoff election is required between the 2 best placed candidates of the first round of voting. Ex officio members do not vote. The spokesperson is elected for a period of 3 years. Re-election is allowed.

(g) common fund

The NA61 collaboration sets up a common fund into which each member institution is required to contribute annually. The amount of this yearly contribution is set by the Collaboration Board.

3. publication policy

(a) confidentiality

Members of the collaboration should exercise caution and good judgment when discussing experimental results with individuals outside the collaboration before the results have been published (i.e., presented publicly in a seminar or conference or submitted for publication in a scientific journal). These results should clearly be labeled "NA61 Preliminary". When individuals outside the collaboration are consulted for advice on the analysis or interpretation of the data, those individuals should be asked to respect the confidentiality of the data. Members of the collaboration should not issue press releases or call press conferences without the approval of the spokesperson.

(b) preliminary results

Preliminary results should be presented in public only if (a) the data have been previously made available to the collaboration giving details of the analysis, results, and consistency with other data, and (b) the data have been approved by the physics board. Once preliminary results have been shown in public they should not be changed until the final publishable results are available.

(c) papers

A paper containing NA61 data should not be submitted to a scientific journal until (a) the data and analysis software have been previously made available to the collaboration giving details of the analysis and results and (b) a not-far-from-final draft of the paper has been discussed at a general meeting, and (c) the final draft has been made available. An ad hoc committee will be appointed by the spokesperson to facilitate the preparation and submission of the final draft. This committee would consist of the principal authors and one or more individuals not directly working on the analysis. It would be empowered to adjudicate disagreements on details of the paper. Such a committee should also be appointed for technical papers.

(d) conferences

Abstracts for conferences, technical as well as physics, should be approved by the spokesperson. Conference talks should be made available to the collaboration for comments and suggestions one week before presentation. Papers for conference proceedings should be made available to the collaboration one week before submission. The rules 3.2 concerning preliminary results of the collaboration apply.

(e) speakers

The spokesperson shall strive to distribute speaking invitations received by the collaboration on the basis of the suitability of the speaker to the topic and an equitable distribution of talks to individuals and institutions with appropriate consideration of regional distinctions. As an aid to this end, the spokesperson will designate someone to maintain a record of all talks; members of the collaboration who receive personal invitations to give talks should inform this person.

(f) authorship

The chairman of the Collaboration Board will maintain the Collaboration List comprising the collaborating institutions and the names of participating members. However, for each publication the Collaboration Board member from each institution will decide on the author list from that institution.

For general guidelines, the authors of papers will be those collaborators who have contributed to the taking or analysis of the data reported in the paper and who have been collaboration members for six months or more. Normally individuals are dropped as authors one year after they leave the collaboration; however, individuals who have made special contributions to a given topic, such as hardware or software or analysis, should be retained on the author list of papers for which their work is relevant. Collaborators who have worked on the installation of new equipment but have left the collaboration prior to the taking of data will be included on the initial papers of the collaboration using that equipment. Technical papers need only list as authors those individuals who contributed to that project, but the 'NA61 Collaboration' should be acknowledged.

The authors of papers will be listed in alphabetical order, preceded or followed by the phrase 'NA61 Collaboration'. Papers which result from student's theses should be so indicated by appropriate footnotes. Papers for conference proceedings are normally submitted in the speaker's name, plus other major contributors if appropriate, plus the other NA61 authors. The other NA61 authors may be abbreviated to 'NA61 Collaboration' only if space is limited.

(g) PhD theses

PhD theses based on work performed within the collaboration should be made publicly available.

4. spokesperson

The spokesperson organizes and directs the work of the collaboration. He is advised and helped by a physics board on matters of experimental program and analysis, a detector board on technical matters and a software board on software issues.

The spokesperson proposes his deputy, the contact person at CERN, the chairmen of the physics, detector and software boards and appoints them after approval by the Collaboration Board.

The spokesperson organizes the collaboration meetings, typically two in each calendar year.

The spokesperson ensures that regular phone or internet conferences to review, coordinate and plan the work of the collaboration are organized as necessary.

5. physics, detector and software boards

The chairmen of the physics, detector and software boards appoint the members of these boards in consultation with the spokesperson.

The physics board, in particular, advises and helps the spokesperson in matters of data taking and analysis strategy, as well as planning and completion of publications.

The spokesperson and the chairs of the boards meet as necessary to coordinate the meetings of the boards.

6. obligations during data taking

Each institution of the collaboration has to supply manpower for shift work during data taking periods. The number of such people should be in proportion to the number of members of the collaborating institutions.

Annex IV

List of tasks and present sharing of responsibilities.

	Task	Responsible
Safety		Budapest ETH Zurich
Beam		
	Beam line and beam profile	CERN, ETH Zurich
	Beam Position Detectors	Krakow
Trigger		
	Detectors	Budapest ETH Zurich
	Detector configuration/logic	Budapest ETH Zurich
Magnets		
	Magnets	CERN, Budapest
TPC		
	Gas system, gas	UW Warsaw
	Power supplies	UF Frankfurt
	Read-out	FH Frankfurt
	FE electronics	UF Frankfurt
	cooling, climatisation	CERN, UF Frankfurt
	He beam pipe	St. Petersburg
TPC read-out upgrade		
	Read-out electronics	Budapest
	New DAQ	Budapest

Table 7: List of tasks and and present sharing of responsibilities: NA61 detector and its infrastructure (1).

Task	Responsible
TOF-L/R	
Detectors	Dubna
TOF-F	
Detectors	Geneva Bern
Electronics Read-out	Geneva Budapest Bern
PSD	
Detector Read-out	Moscow Moscow
Targets	
T2K targets	Geneva KEK Tsukuba
LHT target	IKF Frankfurt Budapest
DAQ	
DAQ software Data recording	Budapest FH Frankfurt
DCS	
Detector control system	WUT Warsaw
Database	
Database	WUT Warsaw
Detector geometry	
Measurements Input to database	CERN, Zagreb Zagreb

Table 8: List of tasks and present sharing of responsibilities: NA61 detector and its infrastructure (2).

Task	Manpower
Software	
DSPACK library	Kielce Dubna
ROOT61 library	ETH Zurich
Reconstruction chain	Zagreb Kielce Dubna Krakow
Simulation chain	Geneva Dubna
Calibration	
Geometry/drift velocity	Zagreb
Magnetic field	Kielce
Residual correction	Kielce
TPC point resolution	UW Warsaw
dE/dx	Budapest Geneva
TOF-L/R	Dubna
TOF-F	Geneva

Table 9: List of tasks and present sharing of responsibilities: NA61 software, data calibration and analysis (1).

Task	Manpower
Analysis: 2007/2008 data	
beam and cross section normalization	ETH Zurich
charged pions and kaons (TOF)	Dubna, Geneva, Paris
charged kaons (kinks)	Geneva, Dubna, Paris
charged kaons (dE/dx)	Karlsruhe, UW Warsaw and Geneva
charged pions (dE/dx, h ⁻)	SINS and UW Warsaw and Karlsruhe
K _S ⁰	WUT Warsaw
hyperons	Zagreb and WUT Warsaw
high p _T	Budapest and Zagreb
Analysis: 2009-2012 data	
charged pions and kaons (TOF)	Dubna and Geneva
charged pions and kaons (dE/dx)	Budapest, SINS Warsaw and Geneva
neutral strange hadrons	Zagreb and WUT Warsaw
fluctuations/correlations	Athens, Frankfurt, Kielce, Moscow St. Petersburg, WUT Warsaw
HBT	Stony Brook
anisotropic flow	Kielce, WUT Warsaw, Krakow

Table 10: List of tasks and present sharing of responsibilities: NA61 software, data calibration and analysis (2).

Annex V

General Conditions Applicable to Experiments 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.