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ORGANISATION EUROPÉENNE POUR LA RECHERCHE NUCLÉAIRE $\overline{\text{CERN}}$ European organization for nuclear research

EUROPEAN STRATEGY GROUP

Third meeting
Krakow –12 September 2012

DRAFT MINUTES

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The meeting was opened by the Chairman, Professor T. Nakada, at 2.00 p.m.

1. APPROVAL OF THE AGENDA

(Item 1 of the agenda)

The CHAIRMAN suggested the following main agenda items.

- First reflection on the Open Symposium.
- Status report by the five working groups on their progress and work plans.
- Plan for the coming meetings.

The Agenda was approved.

2. APPROVAL OF THE DRAFT MINUTES

(Item 2 of the Agenda)

The CHAIRMAN, apologising for the late distribution of the Draft Minutes of the 2nd European Strategy Group (ESG) meeting on 19 June 2012, said that comments and proposals for amendments could be submitted by electronic mail and the Draft Minutes approved at the next meeting.

3. FIRST REFLECTION ON THE OPEN SYMPOSIUM

(Item 3 of the Agenda)

The CHAIRMAN noted that one of the points he had picked up from the last day of the Open Symposium had been the wish expressed by theorists to have a greater say in the framework for European funding as well as their desire for greater coordination in resources-intensive activities in computing such as lattice QCD. Educational and career issues had also been raised. Although they were clearly not scientific issues it might be appropriate for them to be addressed in the context of the Strategy.

In the ensuing discussion, the following points were made:

- the question of career prospects for young theorists already came up in 2006, but the situation has not changed greatly in the meantime, i.e. young theorists who perform highly complex calculations that are crucial to experimentalists are often not

acknowledged by theory professors as being theorists (Professor HEUER, CERN Director-General);

- the recognition of phenomenologists has been quite an issue in the United States and, comparatively speaking, Europe does reasonably well in that respect; however, it is not something that can be solved by the Strategy update and the best that can be done is to make a statement to the effect that the concern is understood (Dr WOMERSLEY, Director STFC-LAL, UK, supported by Professor AUGÉ, France);
- the problem is not limited to young theorists young experimentalists who provide services for large particle physics experiments often do not receive the recognition they merit and this can have adverse repercussions for the community in terms of those young people's future career choices (Professor VAN DONINCK, Belgium);
- in the recent past, projects submitted for EU funding by the theorist community have been turned down on the grounds that they have no involvement with industry; it would be difficult and somewhat artificial to force such projects to add an industrial component, and that is why the community is calling for European funding to take into account the peculiarities of the field; problems have also been faced in the applications for grants for "initial training networks", formerly known as "research training networks" and now relating primarily to PhD students; it so happens that the particle physics theory community does not have any difficulty finding PhD students but crucially lacks post-doctoral research associates, who bring a lot of added value to theory projects but are not covered by the "initial training networks" scheme (Professor ZWIRNER, Preparatory Group);
- this problem is not unique to particle physics and can be solved by ensuring the relevant committees have one or several members capable of explaining the peculiarities of the field to the other committee members (Professor DE JONG, Netherlands);

The European Strategy Group <u>took note</u> of the first reactions to the Open Symposium and <u>agreed</u> to address the scientific issues at an informal meeting at CERN on the afternoon of 18 September 2012 (see Item 5).

4. STATUS REPORT BY THE FIVE WORKING GROUPS ON THEIR PROGRESS AND THEIR WORKING PLAN

(Item 4 of the Agenda)

The CHAIRMAN invited the Working Group convenors to present the status of their group's activities since the 2nd meeting of the ESG in June 2012.

- Working Group 1 - Mandate and organisational structure for the Council for the European Strategy and its implementation

Professor SPIRO, the Council President, reported that the WG1, which corresponded to the CERN Council's "President's Group", had so far dedicated several discussions to the question of the mandate and organisational structure for the Council in the context of the European Strategy and its implementation, but had not yet reached any firm proposals. The starting point and primary reference source for the Group's discussions was the Convention, according to which CERN, as an intergovernmental organisation, was governed by two bodies: the Council, supreme decision-making body, and the Director-General(s), Chief Executive Officer(s). In its capacity as supreme decision-making body, the Council had the authority and responsibility to decide on all aspects of CERN's mission, including the construction or operation of the laboratory (or laboratories), the organisation or sponsoring of international cooperation in the field of particle physics, and the establishment of the European Strategy for Particle Physics. As the Organization's Chief Executive Officer(s), the Director-General(s) was/were responsible for the preparation and execution of the Council's decisions and for the Management of the Organization. Although the Convention foresees having several Director-Generals, in practice there is only one Director-General at the Geneva Laboratory and it is the most natural and efficient to give a dual role to a single Director-General for running the Geneva Laboratory and implementing the European Strategy.

Four main responsibilities with regard to the Strategy had been identified, namely

- Definition of the Strategy? → the Council through the European Strategy Group chaired by Scientific Strategy Secretary;
- Setting up concrete plans for implementing the Strategy? → the Council through the CERN Director-General;
- Putting the Strategy plans in place? → the Council through the CERN Director-General;
- Monitoring the implementation? → the Council through the Scientific Strategy Secretary and the Strategy Secretariat.

In the ensuing discussion, the following points were made:

- the meaning of "monitoring the implementation" (fourth bullet point) is unclear and further discussion is needed (Professor NAKADA, ESG Chairman)

- since the continued operation and improvement of the LHC will be high on the list of priorities in the Strategy Update it is hard to see how "monitoring the implementation" could be done by anybody other than the Council itself; the Scientific Secretary and the Strategy Secretariat certainly can play a key role in the Strategy monitoring process, but the precise wording of their mandate will require more thought (Professor HEUER, CERN Director-General);
- the question of "monitoring implementation" also raises a possible confusion of roles between the CERN Council and ESFRI, which has recently set up an expert assessment group to monitor the financial implementation of the projects on its roadmap, including the three FP7 projects in the field of particle physics, namely sLHC, ILC Hi-Grade and TIARA; considerable sums of money are at stake, so it is important to have clarity on who is responsible for monitoring the Strategy (Professor ALEKSAN, Preparatory Group);
- the ESFRI expert committee has been mandated by the European Commission to monitor whether or not the projects in receipt of EU funding have delivered the expected results, which is entirely appropriate; any questions from that committee on the motivations for the particle physics projects mentioned should be referred directly to the Strategy process (Dr WOMERSLEY, Director STFC-LAL, UK);
- another body ECFA also has the mandate of "monitoring the implementation of the European Strategy" in the Member States during their country visit (Professor KRAMMER, ECFA Chairman);
- ECFA's role in the monitoring of the Strategy is acknowledged through the presence of the ECFA Chair in the Strategy Secretariat (Professor SPIRO, Council President);
- the Council might decide that it wants executive responsibility for the implementation of the Strategy, including discussions with the national laboratories and with authorities in other regions, to reside in the hands of the CERN Director-General and to make that part of his mission statement (Professor NAKADA, ESG Chairman);
- insofar as the European Strategy for Particle Physics refers to resources which are outside the direct control of the Organization and therefore of the CERN Director-

General – it is difficult to see how the Director-General can be made responsible for how such resources are used; the question of attributing responsibility for monitoring the implementation of the Strategy clearly requires further reflection (Dr WOMERSLEY, Director STFC-LAL, UK);

- precisely the same logic applies to the particle physics projects receiving funding from the EU, which rely to a large degree on funding outside the CERN ambit (Professor ALEKSAN, Preparatory Group).

The European Strategy Group <u>took note</u> on the interim report from Working Group 1 and of the points raised during the discussion.

- Working Group 2 – Organisational structure for European participation in global projects, including the role and definition of the National Laboratories and the CERN Laboratory in the European Strategy

Professor DE JONG (Netherlands) said that WG2 had some 19 members and had met on two occasions since the June ESG meeting, namely on 27 July and 9 September. Given the considerable overlap with the substance of Working Groups 1 and 3, regular coordination meetings had also been held with the convenors of those groups. Advice had also been sought from the CERN Legal Service whenever required. At the 27 July meeting, the Group had explored various options for European participation in a global project taking place inside and outside Europe (e.g. LHC luminosity upgrade, linear collider, high-intensity neutrino facility) with a view to bringing forward the viable models to the present meeting. It had also worked on a definition of the "national laboratories", based on the recommendations of the laboratory directors. All the deliberations took account of earlier work on governance performed by bodies such as ECFA, ILC, OECD-GSF, EU ERIC etc. At the 9 September meeting, agreement had been reached on the definition of a global facility, namely "a project of which there is only one in the world, or which is only possible or feasible by global co-operation" which had led to the question as to whether a European co-ordination was required for a global facility and, if so, how such coordination would be organised. He then presented a number of organisational flow-charts depicting the various models which the Working Group had deemed to be viable for the consideration of the ESG at its present meeting. Finally, he announced that the Group had scheduled two more meetings, both at CERN, on 22 November and 11 December with a view to finalising its input to the Drafting meeting in Erice.

In the ensuing discussion, the following points were made:

¹ See presentation on the Indico website.

- the graphics provide a useful illustration of the various options available but they crucially lack information on money flows; one important question in this context is whether or not CERN, as the coordinator of a potential European participation in a linear collider in Japan, would have to fund the European contribution from its ordinary budget (Professor VAN DONINCK, Belgium);

- other questions in this context are, firstly, to what extent CERN is entitled to enter into binding agreements on behalf of its Member States and, secondly, whether the employees of European national laboratories working at a global ILC project in Japan would enjoy the same tax privileges as CERN staff if CERN were coordinating the European participation (Dr WOMERSLEY, Director STFC-LAL, UK);
- add to that the question of liability for people and materials (Professor ALEKSAN, Preparatory Group);
- official answers to such questions can only be given on the basis of input from the CERN Legal Service but, broadly speaking, if the Member States agree, in the framework of a Council decision, to include in CERN's Basic Programme a European contribution to the construction of a linear collider in another region, then the Director-General would have full authority to negotiate with the other project partners on behalf of the CERN Member States and to commit whatever funds they decide to make available via the CERN Budget; at present, all collaboration agreements concluded between CERN and non-Member States contain a clause on privileges and immunities, which the State in question must accept; however, whether such provisions would still apply under an international treaty for a global facility and whether the employees of national laboratories could be brought under the same umbrella will need to be clarified by the Legal Service (Professor HEUER, CERN Director-General);
- it is important to separate the various issues, i.e. (1) the specific legal framework proposed by the host country of a future global project, (2) the financial framework for European contributions (via CERN Budget and/or in-kind contributions from the national laboratories), (3) the optimum number of partners for such a project to operate efficiently and (4) the desirability that the host region of a future global facility should commit to reciprocal support for projects in the other regions (Professor NAKADA, ESG Chairman);
- it is likely that the EU would grant funds to support a European participation in a global facility in another region and such resources should ideally be channelled through CERN (Professor ALEKSAN, Preparatory Group);

- on the question of EU funding, it should be underlined that the prime criterion for the award of grants under the Commission's recently-adopted "Horizon 2020" Framework Programme is excellence; however, it should not be forgotten that funding can also be obtained through the EU's Cohesion Policy, which provides a framework for financing a wide range of projects and investments with the aim of encouraging economic growth in EU Member States and their regions; all representatives of national laboratories and government authorities in the CERN Council's Strategy Group are therefore strongly encouraged to find synergies between the Cohesion Policy and Horizon 2020 and to use these structural funds to build up their research capacity (Dr R. LEČBYCHOVÁ, European Commission);

- for the purposes of the present discussion, the term "global project" is strictly limited to accelerator-based facilities since the enlargement of the Strategy to cover non-accelerator-based activities is a separate matter, outside the scope of the working group (Professor DE JONG, in reply to Professor KIRCH, Switzerland).
- it is important that the particle physics community avoids impinging on the activities of other communities, so the focus of the Strategy Group's discussions in this context must remain large-scale, globally-financed accelerator-based facilities (Professor HEUER, CERN Director-General);
- even though a long baseline neutrino project in the US would not fall into the "global facility" category, it might be desirable to consider asking CERN to be the coordinator of a possible future European participation in such an undertaking (Dr WOMERSLEY, Director STFC-LAL, UK);
- the question of access for foreign nationals to US facilities raises a variety of complex issues which sit firmly within the jurisdiction of the US State Department; for that reason, consultations regarding any future international participation in US-based facilities must begin at the earliest stage (Professor SCHOCHET, United States, in reply to Professor DE JONG);

The European Strategy Group <u>took note</u> on the interim report from Working Group 2 and of the points raised during the discussion.

- Working Group 3 - Relations with external bodies, in particular EU-related issues

Professor ÅSMAN (Sweden) said that WG3 had eleven members and had met on three occasions since June. Using as a starting point the Strategy Brochure produced in 2006, the Group had drawn up a list of organisations in fields related to particle physics, with which it might be desirable to foster relations, namely ESO, ESA, EIROforum, ApPECC, NuPPEC,

FALC, APIF and OECD-GSF². A further crucial issue that the Working Group needed to tackle was the connection with the European Strategy Forum on Research Infrastructures (ESFRI) and the inclusion of the European Strategy for Particle Physics in the ESFRI roadmap. The Working Group was planning to meet on two further occasions before the end of 2012 to finalise background material on all aspects of its mandate, to discuss possible areas of improvement and to produce a full document as input for the Drafting Session 2013.

In the ensuing discussion, the following points were made:

- it is vital for the European Strategy for Particle Physics to figure prominently on the ESFRI roadmap, since the latter is used in several countries as the basis for setting national priorities, with the inevitable implication that projects not on the ESFRI list are not considered a priority (Professor DE JONG, Netherlands, supported by Professor EEROLA, Finland);
- following the adoption of the first Strategy Statements in Lisbon in 2006, ESFRI agreed to devote a special section of its roadmap to the European Strategy for Particle Physics but the formats were not the same; as a result, particle physics still appeared to be detached from other scientific disciplines; it would seem logical and desirable for the connection to ESFRI to be re-negotiated within the framework of the present Strategy Update and, in particular, for particle physics to have formal representation within that forum (Professor BERTOLUCCI, Director of Research, CERN, supported by Professors ALEKSAN, RAPIDIS and MNICH);
- the lesson about the need for specific projects appearing on the ESFRI roadmap has been well learned since 2006 and the time is now right to discuss with ESFRI the inclusion in its future roadmaps not only of the European Strategy for Particle Physics *in extenso* but also of the individual major projects which make up the Strategy (Professor HEUER, CERN Director-General);
- ESFRI is a forum of EU Member State governments, and that is why it is difficult to envisage membership for a dedicated representative of the European particle physics community; nonetheless, it should not be difficult to reach an agreement along the lines proposed by entering into discussions with the European Commission under the auspices of the CERN-EC Memorandum of Understanding (Professor SPIRO);
- the European Commission increasingly wishes to promote global projects and connections between European research organisations and the rest of the world, so

² OECD-GSF was added to the list during the Krakow meeting.

such discussions would be a good opportunity to underline that particle physics is leading the way in this respect and is already doing what the EC would like to see other scientific fields do (Dr WOMERSLEY, Director STFC-LAL, UK);

- the ESFRI Chair, Dr Vierkorn-Rudolph, is an official observer of the Strategy Group (unable to attend the present meeting), so informal discussions should be held with her at the earliest opportunity to ascertain how to proceed (Professor NAKADA);
- the TIARA collaboration has gone through the exercise of identifying bodies with which it needs to interact on accelerator R&D issues; that list can be made available to the members of WG3 (Professor ALEKSAN, Preparatory Group).

The European Strategy Group <u>took note</u> on the interim report from Working Group 3 and of the points raised during the discussion.

- Working Group 4 - Knowledge and technology transfer, relations with industry

Professor AUGÉ, noting that the small Working Group 4 had so far met on two occasions, said that, for the purposes of the Strategy, it was appropriate to divide knowledge and technology transfer (KTT) broadly into two categories, namely, on the one hand, the activities done at CERN, by and through its dedicated service, and, on the other hand, the technological developments undertaken jointly by several institutions in the Member States, often in collaboration with CERN, which were co-owned and therefore included a strong intellectual property component.

The Working Group also wished to alert the Strategy Group to the fact that certain misconceptions were rife in the community regarding CERN's role in KTT compared with that of ESA, which was channelling significant amounts of funding back into its Member States via industrial contracts, but as part of its core mission. Although comparisons between ESA and CERN on that level were somewhat meaningless, since CERN's core mission was fundamental research, it was important that CERN and the particle physics community be seen to be active in the field of KTT; the Strategy Update represented a good opportunity to do that and at the same time to dispel all misconceptions about CERN's core mission. The natural tool for communicating about the technological spin-offs of particle physics research in Europe was the HEPTech network, created as a result of the previous Strategy process in 2006. HEPTech was currently quite active but for the time being only 13 Member States were represented among its 20 member institutions. A certain amount of effort would be required to transform the HEPTech network into a viable tool carrying the whole responsibility for industrial relations for the particle physics community.

The following additional point was made:

- although HEPTech and the CERN ILO Forum have quite different compositions and missions, the two bodies have much in common so it might be desirable to reflect on possible mechanisms for connecting the two fora (Professor AUGÉ in response to a suggestion by Professor SPIRO, Council President).

The European Strategy Group <u>took note</u> on the interim report from Working Group 4 and of the point raised by the President of Council.

- Working Group 5 - Outreach and education

Professor BETHKE presented the outcome of discussions at the teleconference meeting of WG5 on July 20³, at which J. Gillies had given a status report on the European Particle Physics Communication Network (EPPCN), which had been set up following the Lisbon 2006 Strategy process, and I. Melo had reported on the activities of the international particle physics outreach group (IPPOG). The main issues raised at this meeting were as follows:

- activities in neighbouring fields (NuPECC, ASPERA) should be analysed;
- future activities should make best use of existing structures (EPPCN, IPPOG etc.);
- increased communication is desirable on societal benefits (c.f. ICFA brochure "Beacons of Discovery");
- more emphasis is needed on relations with industry (synergy with WG4) and public education in the field of accelerators;
- certain Member States are still not represented in EPPCN (optimum is to have 2 members per country: one senior scientist, one government representative);
- particle physics needs to enter mainstream physics education in secondary schools and appropriate teaching materials need to be developed;
- other ideas to be considered include establishment of science teacher organisations, academies and more programmes like CERN teachers schools;
- particle physicists need more training in communication skills (media, teaching at schools etc.);
- in general, there is a lack of manpower in particle physics outreach (possible wider use of doctoral students);

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³ See Indico site: https://indico.cern.ch/conferenceDisplay.py?confId=200877

should connections be made to other, broader activities such as the UK Science and Discovery Centres?

- the optimum use of social media (offensive or defensive strategy?) needs to be discussed;
- EPPCN is looking into publicising ESG strategy brochure for Council meeting in May 2013 (Brussels);
- "targeted information" needs to be provided to political audiences in Member States (e.g. by placing dedicated correspondents in CERN's communication group).

In the ensuing discussion, the following points were made:

- the idea of providing "targeted information" to politicians arises from the fact that when national researchers travel to CERN to work for medium-to-long-term periods they lose a certain amount of visibility to politicians; to resolve this problem, the UK has placed a science communication specialist inside the CERN Communication Group, entrusted with the task of writing a weekly newsletter about the activities of UK people at CERN; the model could be easily replicated by other Member States (Dr WOMERSLEY, Director STFC-LAL, UK);
- the TIARA collaboration has set up a database, available on the web, of all the accelerator science and technology lectures given in Europe and will also be publishing a 3-page brochure, "Accelerators for society", for promoting how accelerators are used in society; the coordinator of these initiatives, P. Burrows, will be happy to provide input to the Working Group's deliberations (Professor ALEKSAN, Preparatory Group);
- other Member States might wish to follow the example of France, where the highschool teachers trained at CERN in the framework of the Teachers Programme are identified by the Education Ministry and automatically registered in a network where they can exchange views and discuss further joint initiatives to promote particle physics nationwide (Professor AUGÉ, France);
- the Working Group should reflect on possible solutions ensuring outreach material gets translated into the languages of all CERN's Member States and not just the three or four major European languages (Professor ÅSMAN, Sweden);
- gender issues should be taken up by Working Group 3, since gender equality and gender mainstreaming in research are among the priorities of the European Research

Area, as communicated in the ERA Press Conference on 17 July⁴ (Dr LEČBYCHOVÁ, European Commission, in response to a suggestion by Professor EEROLA, Finland);

- the International Particle Physics Outreach Group (IPPOG) does excellent work with practically no budget beyond the small measures of funding provided by CERN and the EPS HEPP Board; thought should be given to how IPPOG could be provided with more sustained funding (Professor NAKADA, ESG Chairman);
- recent public interest in CERN and the Higgs boson, which culminated in the 4 July announcement at CERN, has led to a massive demand for CERN-related merchandise; consideration could be given to signing licensing agreements with suitable distributors in the Member States for the marketing of CERN merchandise, and the resulting income could be used to self-finance outreach activities such as those pursued by IPPOG (Professor BUTTERWORTH, Unite Kingdom).

5. PLAN FOR THE COMING MEETINGS

(Item 5 of the Agenda)

On the proposal of Professor HEUER, it was agreed to hold an informal meeting of the ESG at CERN on Tuesday 18 September, from 2.00 to 4.00 p.m. aimed at holding a first discussion of the scientific views expressed by the community at the Open Symposium.

The European Strategy Group <u>took note</u> of the schedule and work plan for its forthcoming meetings, namely:

- <u>Fourth meeting</u> (informal): 18 September 2012 (2.00-4.00 p.m.) at CERN with EVO remote conferencing connection if possible
 - first discussion on the scientific issues raised at the Open Symposium
- Fifth meeting: 11 December 2012 (2.30-6.00 p.m.) at CERN with EVO remote conferencing connection if possible
 - delivery of the Briefing Book by the Preparatory Group
 - preparation of the drafting session
 - working group reports

Strategy drafting session: 21-26 January 2013, Erice

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⁴ See http://ec.europa.eu/research/era/consultation/era_communication-programme_en.htm

- Strategy Statements
- Strategy Deliberation Document
- Strategy Brochure

The meeting rose at 4.25 p.m.