Report on HadronPhysics / FP6

Status of HadronPhysics2 / FP7

Carlo Guaraldo
Project Coordinator

NuPECC Meeting – Bucharest, 26-27 October 2007
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Report on HadronPhysics / FP6
Blocks of Activities

NETWORKING ACTIVITIES (7)

TRANSNATIONAL ACCESS ACTIVITIES (9)

JOINT RESEARCH ACTIVITIES (12)
Transnational Access

A1: Laboratori Nazionali di Frascati
A2: DESY-HERMES
A3: FZJ-COSY
A4: FZJ-NIC/ZAM
A5: GSI
A6: MAMI
A7: ZIB
A8: MAX-LAB
A9: The Svedberg Laboratory

UPPSALA UNIVERSITY
Interconnections among different types of activities
The HadronPhysics project

- Coordinator: INFN, Italy
- Project Coordinator: Carlo Guaraldo (INFN–LNF)
- Consortium: 49 European Organizations
- Other involved Institutions: 138
- Involved researchers: 2,000
- Involved Countries: 27
- EC budget: 17.4 M€
- Start of the contract: 01/01/2004
- Contract duration: 60 months (1 year extension)
Activities’ leaderhips per country

- Germany: 16
- Italy: 6
- Sweden: 3
- UK: 2
- France: 1
Distribution of EC Contribution per Country

- Austria: 6%
- Cyprus: 5%
- Czech Republic: 6%
- France: 25%
- Germany: 25%
- Hungary: 5%
- Italy: 25%
- Netherlands: 5%
- Norway: 5%
- Poland: 5%
- Portugal: 5%
- Romania: 5%
- Spain: 5%
- Sweden: 5%
- UK: 53%
- Norway: 5%
HadronPhysics Managerial Structure

- European Commission
- Management Team
- Coordinator
- Management Board
- Governing Board
- Council
- Collaboration Committee
- Scientific Advisory Committee
- Dissemination Board
Scientific Advisory Committee

- Recently implemented
- First meeting on 1 June 2007
- First report submitted
**SAC composition**

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claude Amsler</td>
<td>Univ. Zürich, CERN</td>
</tr>
<tr>
<td>Sergio Bertolucci</td>
<td>LNF Frascati, INFN</td>
</tr>
<tr>
<td>Jean-Paul Blaizot</td>
<td>CEA, ECT* Trento</td>
</tr>
<tr>
<td>Stan Brodsky</td>
<td>SLAC Stanford</td>
</tr>
<tr>
<td>Larry Cardman</td>
<td>JLab Newport News</td>
</tr>
<tr>
<td>Don Geesaman</td>
<td>ANL Argonne</td>
</tr>
<tr>
<td>Paul Kienle</td>
<td>TUM Munich</td>
</tr>
<tr>
<td>Richard Milner</td>
<td>MIT-Bates</td>
</tr>
<tr>
<td>Shoji Nagamiya</td>
<td>J-PARC Tokai</td>
</tr>
<tr>
<td>Madeleine Soyeur</td>
<td>CEA Saclay</td>
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<tr>
<td>Tony Thomas</td>
<td>JLab Newport News</td>
</tr>
<tr>
<td>Hiroshi Toki</td>
<td>RCNP Osaka</td>
</tr>
</tbody>
</table>
HadronPhysics managerial achievements

- 5 reports approved by the Commission:
  - 3 Annual Reports
  - 1 Complementary Periodic Report
  - 1 Mid Term Review

- 3 approved amendments to the Contract
## Financial situation of the Consortium

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>EU Total Funding</td>
<td>17.400.000,00 €</td>
</tr>
<tr>
<td>Received pre-financings</td>
<td>15.734.880,19 €</td>
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</table>
HadronPhysics2 Call for Proposals

- Issued by the Steering Committee on 4 July 2007, providing the templates for each block of activities
- Deadline 15 September 2007
- Oral Presentations in a Town Meeting held on 28–29 September 2007
1. SUBMITTED PROPOSALS
Received proposals

- 13 Networking Activities
- 11 Transnational Access Activities
- 21 Joint Research Activities
List of received proposals for Networking Activities

N1: TORIC - Theory of Relativistic Heavy Ion Collisions
N2: NextPWA - Generalized amplitude analysis formalisms, algorithms, tools and libraries
N3: TMD-Net - Mapping out the Transverse Structure of the Nucleon
N4: QCDnet - Hadron physics in non-perturbative QCD
N5: PrimeNet - Meson Physics in Low-Energy QCD
N6: SPHERE - Strange Particles in Hadronic Environment Research in Europe
N7: FAIRnet - A worldwide research networking activity for experiments on QCD at FAIR
N8: LMX – Lattice QCD studies of Matter in Extreme Conditions

N9: GLOBAKONIA – Quarkonia Production in Heavy Ion Collisions

N10: SHINE – Study of Hadron Production in Hadron–Nucleus and Nucleus–Nucleus Collisions at the CERN SPS

N11: LEANNIS – Low Energy Antikaon–Nucleon and –Nucleus Interaction Studies

N12: Astro–EoS – Equation of state in astrophysical applications

N13: LHIOE – Lattice QCD for heavy ion experiment
Research Infrastructures offering Access

A1: ECT*
A2: MAMI
A3: Bergen–Budapest Computational Physics Laboratory (BBCPL)
A4: GSI
A5: TSL
A6: MAXlab
A7: ZIB
A8: FZJ–NIC/JSC
A9: COSY
A10: ELSA
A11: LNF
List of received proposals for JRAs

**JRA1: CARAD** – Characterization of Advanced Diamond for Particle Detection

**JRA2: SPINMAP** – Spin Oriented Nuclei for Structure Mapping

**JRA3: FICC** – Cherenkov Imaging counters for high luminosity and high precision experiments

**JRA4: FTOF** – Development of robust, high resolution TOF counters for (muon) particle identification

**JRA5: RADCALIB** – Precision Monitoring of Radiation Damages and advanced Calibration of Gamma Detectors

**JRA6: FutureGas** – Development of large-area low-mass self-triggered gaseous detectors
JRA7: FutureJet – Cryogenic jets of nano- to micrometer-sized particles for hadron physics

JRA8: SolidRICH – Development of Fast, Compact Cherenkov-counters based on the Detection of Internally Reflected Cherenkov Light

JRA9: SciFi – High density and bright inorganic scintillators for frontier detector concepts

JRA10: LHCrap-gapNET – Diffractive physics at LHC with rapidity gap trigger

JRA11: LatticeHP – Lattice Hadron Physics

JRA12: HardEx – Hard Exclusive Reactions

JRA13: ROC – Relativistic Open Source Transport Code

JRA14: EuroPol – Polarisation observables in hadron physics
JRA15: JointGEM – Ultra-light and ultra-large tracking systems based on GEM technology

JRA16: PolAntiP – Polarized Antiprotons

JRA17: ULISI – Ultra-light silicon tracking and vertex detection systems for frontier precision experiments

JRA18: JETCAL – Electromagnetic Calorimeter for Jet Quenching Study

JRA19: PRT – Particle Recognition Tools for Hadron Studies

JRA20: QCL-MUH – Tunable sources for measurements of proton polarizability

JRA21: Silicon Multiplier – Matrix Geiger-Mode Avalanche Micro-Pixel Photo Diodes for Frontier Detector Systems
Activities’ leaderships per country

- Germany: 24
- Italy: 7
- France: 2
- UK: 3
- Sweden: 3
- Hungary: 1
- Poland: 1
- Norway: 1
- Austria: 2

TOTAL: 45
2. INVOLVEMENT OF THE COMMUNITY
Participating Institutions per country

Bulgaria, Greece, Hungary, Ireland, Israel, Norway, Romania, The Netherlands (2)

- Germany 40
- Italy 37
- France 20
- UK 13
- Poland 13
- Switzerland 7
- Austria 5
- Ukraine 4
- USA 4
- Sweden 4
- Finland 4
- Japan 4
- Turkey (1)

Albania, Armenia, Belgium, China, Cyprus, Denmark, Georgia, Korea, Slovenia, South Africa
Estimated human resources in all submitted proposals

- Total Full Time Equivalents (JRAs and Networks): about **1,000 FTE**
- Total involved Researchers (JRAs and Networks): about **3,400 scientists**
- Total expected Users (Transnational Access): **1,681 users**
3. DIMENSION OF THE CONSORTIUM
The following may receive EC funding in FP7

- Any legal entity established in a Member State or in an Associated Country or created under Community Law

- Any international European organization

- Any legal entity established in a FP7 International Cooperation Partner Country (ICPC)
Contributions to ICPCs

For ICPCs, the EC contribution is in the form of a **lump-sum**, which varies according to the **economic status** of the ICPC (low-income, lower middle income, upper middle income), and is given exclusively **in euros/researcher/year**.
Member States and Associated Countries

- **Member states (27):**
  Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom

- **Associated Countries (9):**
  on 16 July 2007
  - Iceland, Liechtenstein, and Norway
  - Switzerland, Israel
  - Turkey, Croatia, Macedonia and Serbia
ICPCs

- ACP Region (Africa–Caribbean–Pacific)
- Asia
- Eastern Europe and Central Asia (EECA)
- Latin America
- Mediterranean Partner Countries (MPC)
- Western Balkan Countries (WBC)

Total number of ICPCs is 146
## Potential Contractors of HadronPhysics2

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>Nr.</th>
<th>COUNTRY</th>
<th>Nr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>2</td>
<td>Bavaria</td>
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<td>Bulgaria</td>
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<td>Switzerland</td>
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<td>Croatia</td>
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<td>Cyprus</td>
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<td>Czech Republic</td>
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<td>Finland</td>
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<tr>
<td>France</td>
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<tr>
<td>Germany</td>
<td>28</td>
<td>Turkey</td>
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<tr>
<td>Greece</td>
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<td>United Kingdom</td>
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<tr>
<td>Hungary</td>
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<td>Georgia</td>
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<tr>
<td>Ireland</td>
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<td>Russian Federation</td>
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<tr>
<td>Israel</td>
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<td>South Africa</td>
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<tr>
<td>Italy</td>
<td>4</td>
<td>Ukraine</td>
<td>3</td>
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**POTENTIAL CONTRACTORS (including ICPCs): 113**

(compare with what the Commission considers to be a manageable Consortium: maximum 20/25 contractors)
Downscaling actions of the Steering Committee

1. Institutions asking only for travel and workshops or receiving an unsubstantial contribution over the whole duration of the contract will not be accepted as contractors.

2. Following what already done in FP6, Italian Universities may receive EU funds directly through associated INFN units; French Universities may receive EU funds through UMRs with CNRS laboratories.
3. As far as **German Universities** are concerned, it is compelling to adopt a mechanism of distribution of EU funds through few distribution centers, analogously to the procedure followed by BMBF in Germany to allocate nuclear and particle physics funds.

4. **ICPCs** in the actual situation – a Consortium overdimensioned, about a factor 4 greater than the wish of the EC – may participate to the activities, but cannot be included in the Consortium.
4. TOTAL COST OF THE RECEIVED PROPOSALS
## Grand Total of the received budgets

<table>
<thead>
<tr>
<th>Activity</th>
<th>Amount</th>
</tr>
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<tbody>
<tr>
<td>Networking Activities</td>
<td>10,972,300</td>
</tr>
<tr>
<td>Joint Research Activities</td>
<td>30,906,110</td>
</tr>
<tr>
<td>Transnational Access Activities</td>
<td>7,797,092</td>
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<tr>
<td>Management of the Consortium</td>
<td>2,000,000</td>
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<tr>
<td><strong>GRAND TOTAL</strong></td>
<td><strong>51,675,502</strong></td>
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5. PREPARING THE HADRONPHYSICS2 PROPOSAL
## Steering Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlo Guaraldo</td>
<td>INFN-LNF</td>
</tr>
<tr>
<td>Barbara Erazmus</td>
<td>CNRS/IN2P3</td>
</tr>
<tr>
<td>Ludovico Riccati</td>
<td>INFN-TO</td>
</tr>
<tr>
<td>Peter Senger</td>
<td>GSI</td>
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<tr>
<td>Mauro Anselmino</td>
<td>INFN-TO</td>
</tr>
<tr>
<td>Michel Garçon</td>
<td>CEA</td>
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<tr>
<td>Günther Rosner</td>
<td>U. GLASGOW</td>
</tr>
<tr>
<td>Paul Hoyer</td>
<td>U. HELSINKI</td>
</tr>
<tr>
<td>Tord Johansson</td>
<td>U. UPPSALA</td>
</tr>
<tr>
<td>Helmut Koch</td>
<td>U. BOCHUM</td>
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Time Scale

- **20 October 2007**
  Steering Committee Meeting (@Frankfurt)

- **6 November 2007**
  Steering Committee Meeting (@Frankfurt)

- **24 November 2007**
  Steering Committee Meeting (@Paris)

- **14 December 2007**
  Steering Committee Meeting (@Frankfurt)

- **December 2007 – January 2008**
  Writing of the HadronPhysics2 Proposal

- **First week of February 2008**
  Electronic submission to the EC