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# Towards a HadronPhysics project in Horizon 2020

Workshop dedicated to the memory of Paul Kienle  
LNF, 19 June 2013

# *Contents*

- Horizon 2020: what it represents
- Horizon 2020: structure
- **Allocation of resources**
- Road map to prepare a proposal for Horizon 2020

## *What it represents*

“Horizon 2020”, the Framework Programme for Research and Innovation, brings together

1. the successor of the 7<sup>th</sup> Framework Programme
2. the successor to the Competitiveness and Innovation Framework Programme (CIP) comprising:
  - *the innovation-related parts of the Entrepreneurship and Innovation Programme (EIP)*
  - *the Information Communication Technologies Policy Support Programme (ICT-PSP)*
  - *the Intelligent Energy Europe Programme (IEE)*
3. the European Institute of Innovation and Technology (EIT)

## *Horizon 2020: structure*

Horizon 2020 is structured around three complementary and interlinked priorities:

- Excellent Science
- Industrial Leadership
- Societal Challenges

## *Excellent science*

- The block includes:
  1. the European Research Council (ERC)
  2. the Future and Emerging Technologies (FET)
  3. the Marie Curie Actions (MCA)
  4. the Research Infrastructures (RI)

## *1. European Research Council (ERC)*

ERC aims to stimulate scientific excellence in Europe by encouraging competition for funding between the very best, creative researchers of any nationality, age and theme.

The ERC's three funding schemes are:

- Starting Grants
- Advanced Grants
- Synergy Grants

## *2. Future and Emerging Technologies (FET)*

- FET Open aims at fostering new ideas, collaborative research for embryonic, high risk visionary science and technology
- FET Proactive aims at nurturing emerging themes and communities
- FET Flagship addresses projects on a global scale, tackling interdisciplinary science and technology challenges.

## 4. *Research Infrastructures (RI)*

Research infrastructures refer to:

- major scientific equipments, like accelerator, or set of instruments
- knowledge based-resources such as collections, archives or structured scientific information
- ICT-based infrastructures such as Grid, computing, software and communications.

Support will be provided for:

- **integrating activities**
- e-infrastructures.



## *Integrating activities*

Integrating activities aim:

- to provide a wider and more efficient access to, and use of, the research infrastructures
- to structure better and integrate, on a European scale, the way research infrastructures operate
- to foster their joint development in terms of capacity and performance.

This action will follow:

- a **bottom-up** approach to respond to the needs of the scientific community in **all fields of science and technology**
- a **targeted** approach to respond to strategic research needs.

## *Integrating activities*

An Integrating Activity shall combine, in a closely co-ordinated manner:

- Networking activities
- Trans-national access and/or service activities
- Joint research activities.

All three categories of activities are **mandatory** as **synergistic** effects are expected from these different components.

## *Initial allocation of resources*

The funding for Horizon 2020 amounted initially  
to  
about € 80 billions  
which represented a 46% increase  
with comparable funding under the Multi-annual  
Financial Framework (MFF) 2007-2013.

## *Actual unofficial allocation of resources (June 2013)*

The actual (June 2013)  
unofficial budget of Horizon 2020 amounts  
to  
about € 72 billions,  
to be fixed by the Parliament in next months.

*Initial distribution of the Horizon 2020 budget normalized to € 80 billions  
To normalize to € 72 billions  
scale down by 10% each items*

BLOCKS	PRELIMINARY AMOUNTS (in billion €)
Excellent Science	24.6
<i>ERC (+77%)</i>	13.2
<i>FET</i>	3.1
<i>Marie Curie (+21%)</i>	5.7
<i>Research Infrastructures (+41%)</i>	2.4
Industrial Leadership	17.9
<i>Enabling technologies (ICT, nano, bio)</i>	13.7
<i>Risk finance</i>	3.5
<i>Innovation SMEs</i>	0.619
Societal Challenges	31.7

## *Road map to prepare a proposal for Horizon 2020*

Announcement to the community of the launch of  
an internal call for projects to be included in a  
proposal for Horizon 2020

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End May 2013

Publication of an internal call

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Estimated date  
5 August 2013

## Advice of the Commission

The new proposal must contain strong and convincing justifications for a fourth hadron physics project

Examples



## Project title (vision)

« HadronPhysicsHorizon - A horizon  
for HadronPhysics: mastering  
challenges in a globalised world »





# Noncomprehensive list of contents

- ✓ sustainability over a long period
- ✓ ongoing growth
- ✓ achievements obtained by the three successful HadronPhysics projects in establishing the European Research Area (ERA)



integration of the three communities (e.m. probes, hadronic probes, qgp), key scientific and technical results, publications, citation, PhD students, further developments, perspectives

- ✓ new research infrastructures (FAIR, ...)



✓ mastering the **high tech challenge**



particle acceleration techniques, significant developments on cryogenically cooled beam targets (cluster-jet sources, cryogenic micro-jet sources, pellet beam sources), R&D on detectors, applications in medicine

✓ mastering the **precision challenge**



the key for success of precision experiments

✓ mastering the **complexity challenge**



high performance computing, development of supercomputers for lattice QCD calculations

✓ mastering the **data challenge**



data treatment methods, analysis topics



- ✓ collaboration with American laboratories
- ✓ collaboration with Russians laboratories
- ✓ green technology
- ✓ mastering the international collaborations challenge



possibility for young people working in big collaborations to spend a limited amount of time at a different laboratory

- ✓ mastering the outreach challenge



by getting general public interested in physics, aware and understanding project achievements and training aspects

## Actions to be undertaken by the Steering Committee for Horizon 2020 (the HP3 Management Board)

- i. To present to the actual and to the future Program Committee members, specifically to the delegations of the countries most involved in the HadronPhysics projects (Germany, United Kingdom, France, Italy), the justifications for a fourth hadron physics project, with the strong request of its inclusion in the first Horizon calls, acting in a coordinated way, to reinforce the request
- ii. To advance analogous request to the Advisory Board which the Commission is implementing

iii. To inform the Commission, which will formally negotiate with the new Program Committee the contents of the first Calls of Horizon 2020, of the steps that the hadron physics community is planning to make

Dead line to the community to deliver the proposed activities for Horizon 2020

**Estimated date**  
**15 November 2013**

Oral presentation of the proposed activities

**Estimated date**  
**30 November 2013**

Start of the work of the Steering Committee (HP3 Management Board plus the appointed new project coordinator) to draft the proposal.

The work includes, in particular

- selection of the proposed activities
- definition of the dimensions of the consortium
- budget allocations

**Estimated date**  
**December 2013**

Publication by the EU of the first Calls of  
Horizon 2020

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01 January 2014

Delivery to Bruxelles of the HadronPhysics  
proposal for Horizon 2020, if Integrating  
Activities are included in the first Calls

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Estimated date  
31 March 2014

Thank you  
for your attention

*Carlo Guaraldo*