

Science Funding in Europe

HORIZON 2020

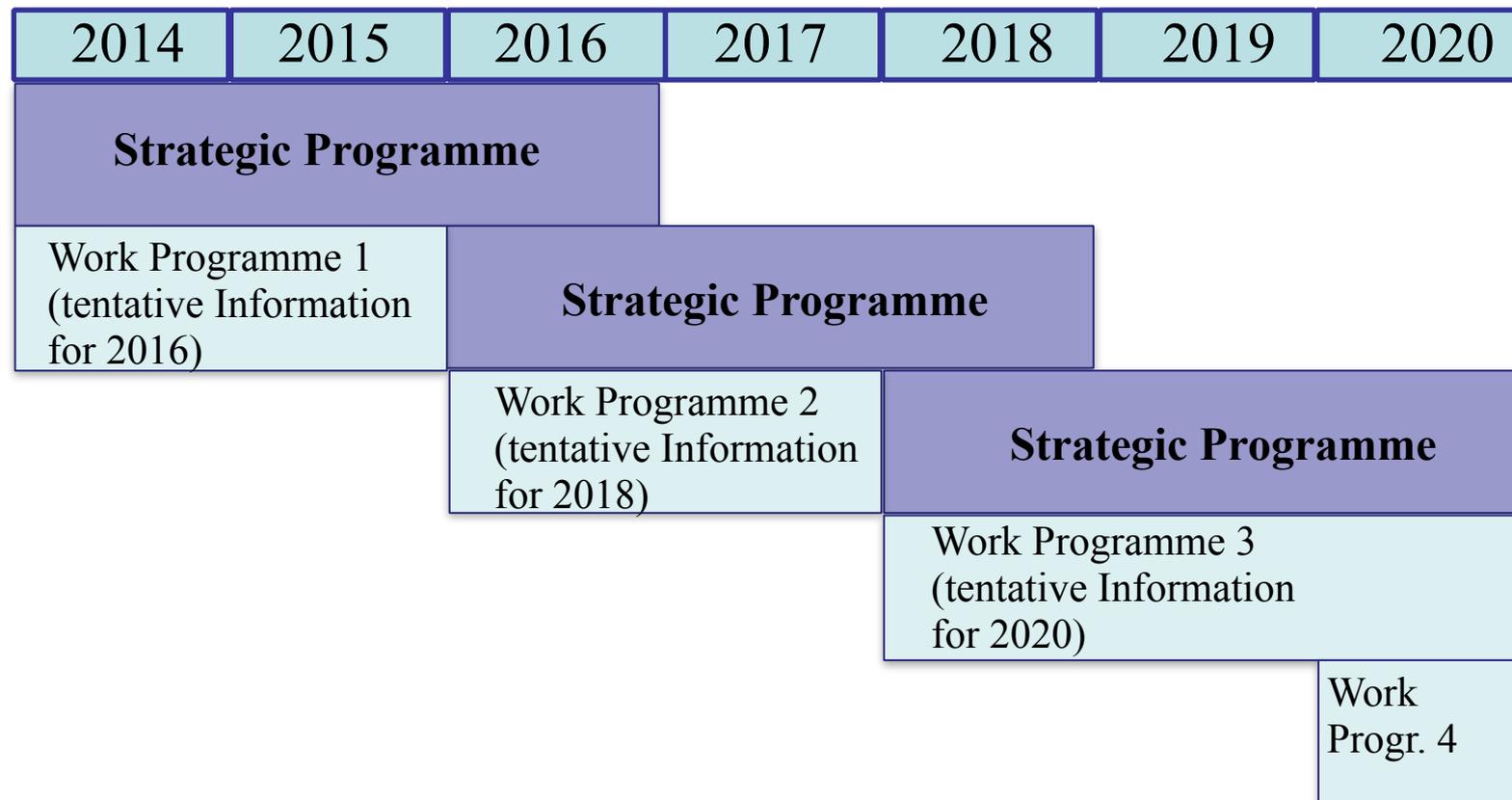
Dieter Grzonka, Forschungszentrum Jülich, IKP

- HORIZON 2020 Overview
- Excellent Science Programme
- Proposals in Preparation
- HadronPhysics Activities
- Funding in H2020
- Summary

HORIZON 2020 Overview

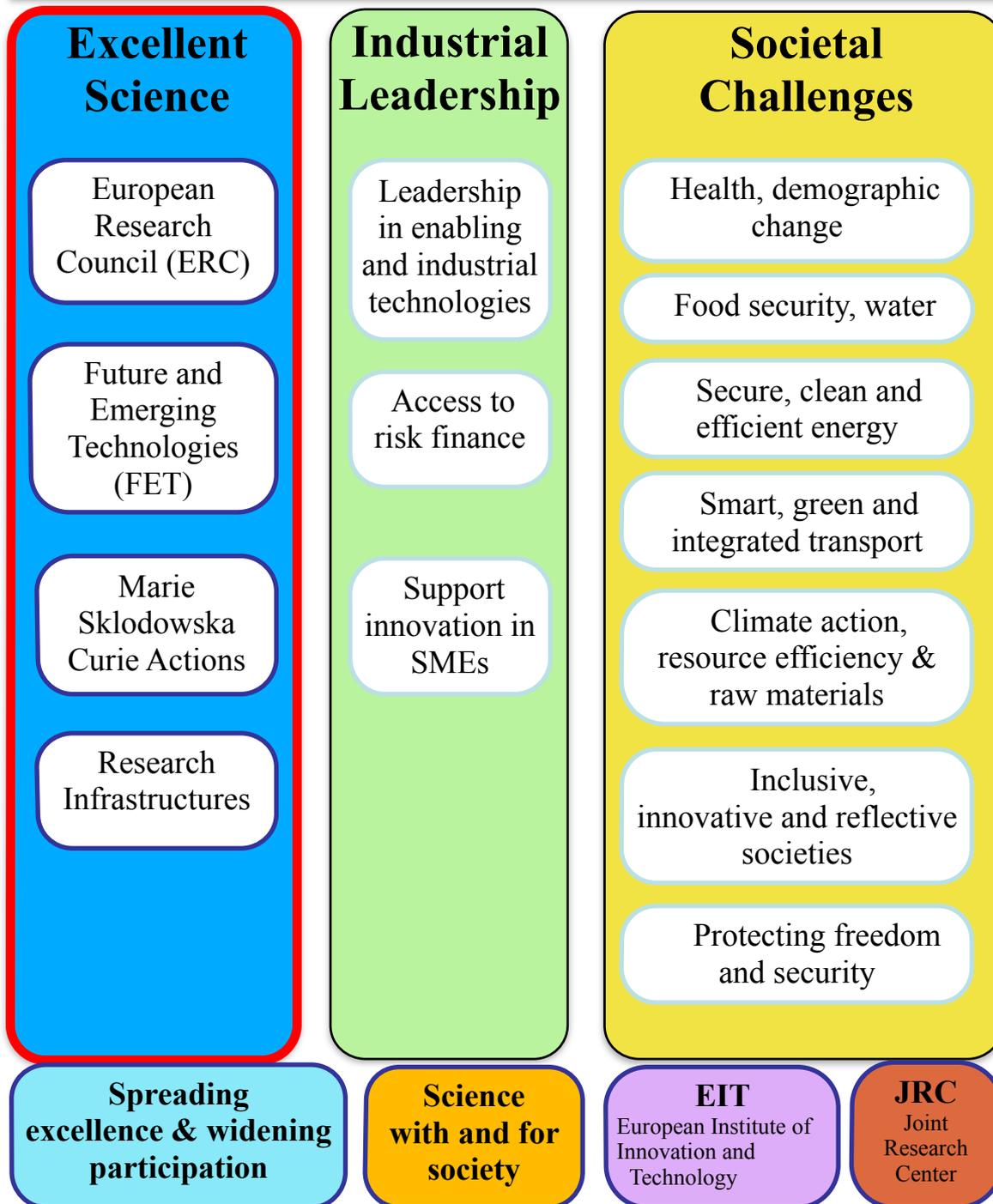
Budget: ≈ 77 Billion Euro

Timeline:

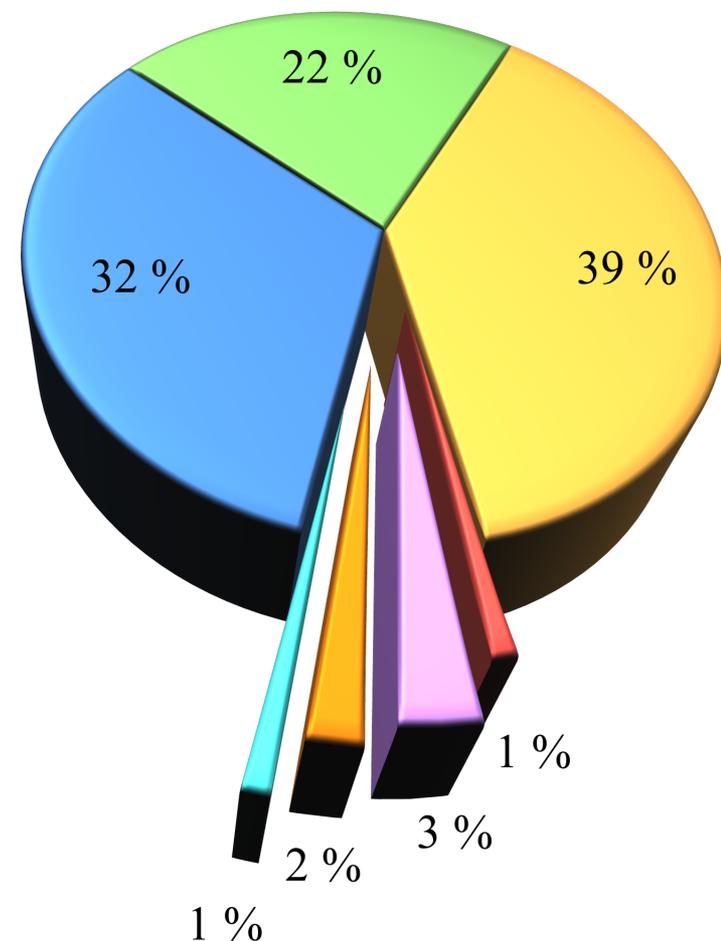


<p><i>simplification of rules and procedures</i></p>	<ul style="list-style-type: none"> • simpler programme architecture → easier identification of funding opportunities single set of participation rules electronic signature of grants → simplify administrative procedures • simpler funding rules: broader acceptance of accounting practices, possibility of unit personnel costs simplification of time-recording for staff single flat rate for indirect cost (25%) VAT reimbursement • revised control strategy: reduction of certificate number reduction of audit burden
<p><i>coupling of research and innovation</i></p>	<p>single set of rules for whole innovation chain: frontier research → technological development → „close to market“ applications stronger role of industry and SME's</p>
<p><i>coherence</i></p>	<p>common legal frame:</p> <div data-bbox="1044 1166 1942 1361" style="border: 1px solid black; border-radius: 15px; padding: 10px; display: flex; justify-content: space-around; align-items: center;">    </div> <div data-bbox="1315 1409 1666 1485" style="border: 1px solid black; background-color: #4a7ebb; color: white; padding: 5px; text-align: center; margin-top: 10px;"> <p>HORIZON 2020</p> </div>

HORIZON 2020 - Overall Structure



Budget distribution



Aim: reinforce and extend excellence of Union's science base, consolidate European Research Area \Rightarrow make Union's research and innovation system more competitive on a global scale

Excellent Science

European Research Council (ERC)

Future and Emerging Technologies (FET)

Marie Skłodowska Curie Actions

Research Infrastructures

ERC activities

- *Highest quality research in Europe*
- *Most promising avenues at the frontier of science*
- *Investigator initiated, path-breaking frontier research*
- *All fields of research*

- *Talented and creative researchers of any nationality and age*
- *Research activity in EU member state or associated country*

3 types of calls

- *Starting grant: 2-7 year since completion of PhD*
- *Consolidator grant: 7-12 year since completion of PhD*
- *Advanced grant: exceptional, established researcher*
(e.g. FP7 / ERC Prof. Ströher, POLPBAR - Production of polarized antiprotons)

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Research Infrastructures

Aim: reinforce and extend excellence of Union's science base, consolidate European Research Area



make Union's research and innovation system more competitive on a global scale

FET activities

- *extend Europe's capacity for advanced and paradigm changing innovation*
 - *radically new, high risk ideas (high risk - high gain)*
 - *accelerate development of most promising emerging areas of science and technology*
-
- *collaborative research across disciplines*
 - *multinational, multidisciplinary consortia*
-
- *open to any topic*
 - *predefined topics to build communities*
 - *large-scale, long-term*

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make Union's research and innovation system more competitive on a global scale

MSCA activities

- *excellent and innovative research training*
- *career and knowledge-exchange opportunities*
- *cross-border and cross-sector mobility*

- *early-stage researchers*
 - *experienced researchers*
- } *from academia & industry*

several types

- *research networks (ITN), support innovative training networks*
- *individual fellowships (IF)*
- *research and innovation staff exchanges (RISE)*
- *co-funding of non-EU programmes for mobility (COFUND)*
- *European researchers' night (NIGHT)*

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Aim: reinforce and extend excellence of Union's science base, consolidate European Research Area



make Union's research and innovation system more competitive on a global scale

RI activities

- *development of new European research infrastructures*
- *open up broad access to national and European infrastructures*
- *support innovation potential of RI*

- *multi-national consortia of RI*
- *projects on the ESFRI roadmap*
(European strategy forum on research infrastructures)

- *ESFRI projects (preparation, operation)*
- *design studies for RI*
- *access to RI*

Excellent Science

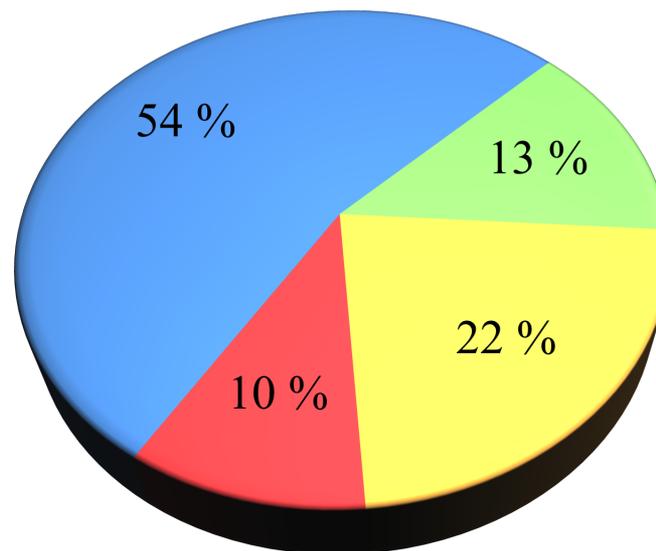
European Research Council (ERC)

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Marie Skłodowska Curie Actions

Research Infrastructures

Budget distribution
(≈ 25 Billion Euro)



Calls about Excellent Science

e-Infrastructures

From 11/12/2013 - 01:00 to 02/09/2014 - 02:00

Integrating and opening research infrastructures of European interest

From 11/12/2013 - 01:00 to 02/09/2014 - 02:00

Support to innovation, human resources, policy and international cooperation

From 11/12/2013 - 01:00 to 02/09/2014 - 02:00

FET-Open - novel ideas for radically new technologies

From 11/12/2013 - 01:00 to 30/09/2014 - 02:00

COFUND - Co-funding of Regional, National and International Programmes

From 10/04/2014 - 02:00 to 02/10/2014 - 02:00

FET-Proactive - Towards Exascale High Performance Computing

From 11/12/2013 - 01:00 to 25/11/2014 - 01:00

e-Infrastructures

From 11/12/2013 - 01:00 to 14/01/2015 - 01:00

Support to innovation, human resources, policy and international cooperation

From 11/12/2013 - 01:00 to 14/01/2015 - 01:00

Developing new world-class research infrastructures

From 11/12/2013 - 01:00 to 14/01/2015 - 01:00

FET-Open - novel ideas for radically new technologies

From 11/12/2013 - 01:00 to 29/09/2015 - 02:00

Examples: Proposals for Activities

INTEGRATING AND OPENING RESEARCH INFRASTRUCTURES OF EUROPEAN INTEREST

H2020-INFRAIA-2014-2015

Publication date	11-12-2013	Deadline Date	02-09-2014 17:00:00 (Brussels local time)
Budget	€140,000,000	Main Pillar	Excellent Science
Status	Open	OJ reference	OJ C361, p. 9 of 11.12.2013



Integrating Activity (≈ 10 M€)

advanced community:
 focus on innovative aspects,
 clear added value,
 progress beyond continuation project

<i>Networking activities</i>	foster a culture of co-operation between RI, scientific communities, industries and other stakeholders, develop more efficient and attractive European research area
<i>Trans-national access</i>	support scientific communities in their access to RI, more effective and optimised use of RI
<i>Joint research activities</i>	improve (quality and quantity) integrated services provided at European level by the infrastructures

INTEGRATING AND OPENING RESEARCH INFRASTRUCTURES OF EUROPEAN INTEREST

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Developing new world-class research infrastructures

H2020-INFRADEV-1-2014-1 Sub call of: H2020-INFRADEV-2014-2015

Publication date	11-12-2013	Deadline Date	02-09-2014 17:00:00 (Brussels local time)
Total Call Budget	€95,000,000	Main Pillar	Excellent Science
Status	Open	OJ reference	OJ C361, p. 9 of 11.12.2013

Topic: Design studies **INFRADEV-1-2014**

⇒ design study for an EDM machine

New leading-edge RI

address all key questions concerning the technical, legal and financial feasibility of new or upgraded facilities

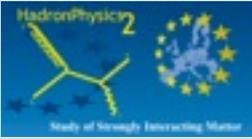
⇒ conceptual design report

basis for identifying and constructing next generation of Europe's world leading RI

TSU participation



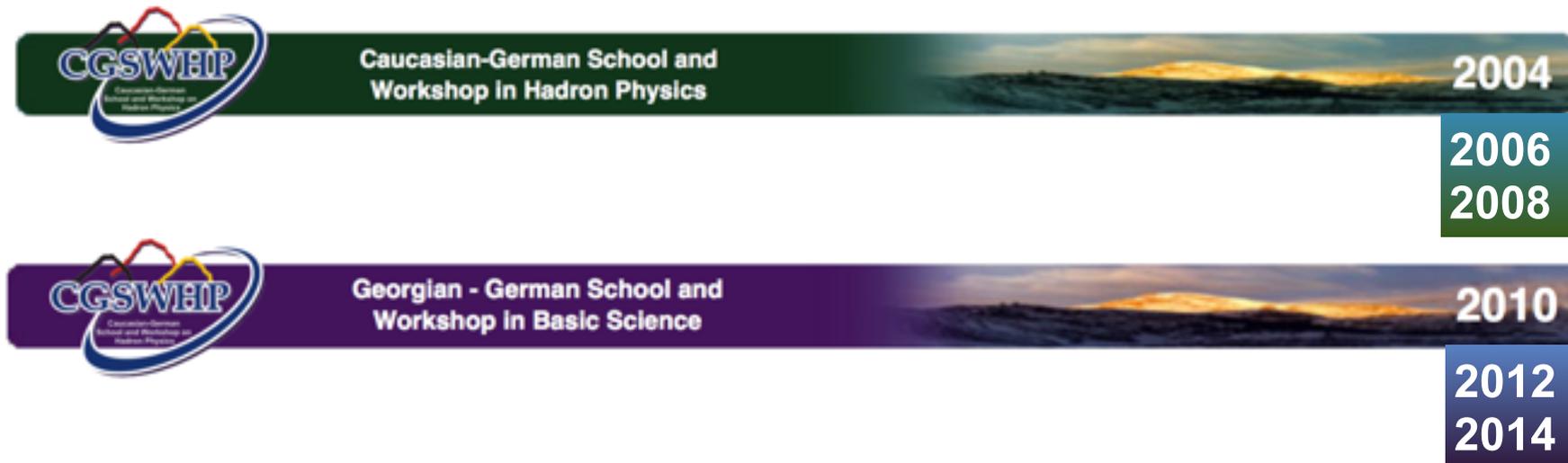
<i>Networking</i>	<i>Access</i>	<i>RTD</i>
<i>MAN - Management of the consortium</i>	<i>MAMI</i>	<i>CryPTA - Cryogenic Polarized Target Application</i>
<i>TheNet - Hadron physics in non-perturbative QCD</i>	<i>COSY</i>	<i>PolAntiP - Polarized Antiprotons</i>
<i>LatticeHadrons - Hadron physics from lattice quantum field theory</i>	<i>ECT*</i>	<i>EDM - Electric Dipole Moment Searches in Storage Rings</i>
<i>GPDlogy - Generalized Parton Distributions</i>	<i>GSI</i>	<i>NextDIS - Challenges for Next Generation DIS facilities</i>
<i>IMPACTS / BASE - In-Medium Properties of Antikaons and Charm Topical Studies / Global Networking Activity Exploring Baryonic Structures with Exotic</i>	<i>INFN-LNF</i>	<i>TRB / PDDSP / PIDstream - TRB3 platform for FAIR and human PET/Digital Signal Processing for Particle Detectors / On-detector particle identification with un-triggered electronics</i>
<i>FAIRnet – Mastering the information challenge for experiments on QCD at FAIR</i>	<i>ELSA</i>	<i>CryoJet - Innovative cryogenically cooled target beams of nano-to micrometer-sized particles for hadron physics</i>
<i>IDHEFIX - Ideas for High-Energy hadron and ion beam FIXed-target experiments</i>		<i>NOVITEC - Novel integration techniques for low-mass silicon tracking detectors and thinned imagers</i>
<i>Multi-gluon-net / TMD-neXt - Multi-gluon effects in hadron 3D structure of the nucleon dynamics / 3D structure of the nucleon in momentum space: opening the next stage</i>		<i>HGGD / JAM-HPH - High gain gas detectors for photon detection and beyond / Joint Advanced Micropattern Gas Detectors</i>
<i>HadronS - Study of the spectrum of hadrons made by light and charm quarks</i>		<i>SiPM2020 - Avalanche Micro-Pixel Photo Sensors and Digitalization of front-end signals</i>
<i>Thinco - Theoretical interpretation of ultrarelativistic pp, pA and AA collision data</i>		<i>NextDIS / GPDlogy - Challenges for Next Generation DIS facilities / Generalized Parton Distributions</i>
<i>HICHEF - Study of heavy ion collisions with heavy flavours: the dawn of the precision era</i>		<i>HIPER-CARDS - High Precision measurements in a broad Energy Range – Compact Advanced Radiation Detector Systems</i>
<i>HPrecisionNet - Precision Hadron Physics: From Intrinsic Structure to Physics Beyond the Standard Model</i>		<i>NextCalor - Towards Future Calorimeters</i>
		<i>DIADEM - Diamond Detectors for Extreme Requirements</i>

History:	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<i>EU Programme</i>	<i>FP6</i>				<i>FP7</i>				<i>FP7</i>		
<i>Contract</i>	HadronPhysics Study of strongly interacting matter										
<i>EC contribution</i>	17.4 M€				10 M€				9 M€		
<i>Activities:</i>	28				27				29		
<i>Networking</i>	7				8				10		
<i>Access</i>	9				5				5		
<i>JRA</i>	12				14				14		
<i>Participants</i>	35				46				50		
<i>other involved institutions</i>	60				103				118		
<i>countries</i>	24				35				35		
<i>scientists</i>	>2000				>2500				>2500		

HadronPhysics: Involvement of Georgia

Tbilisi State University: involved in HadronPhysics, HP2, HP3 activities
via co-operation with Research Center Jülich
in Networking and JRA projects

support of conferences by HadronPhysics:



activity in

HadronPhysics **HORIZON**

and design study for EDM @ storage rings

Participants in H2020:

any legal entity (person, company, research organisation, ...) from:

- EU countries

- Associated countries: Iceland, Norway

association agreement expected soon: Albania, Bosnia and Herzegovina, Former Yugoslav Republic of Macedonia, Faroe Islands, Israel, Moldova, Montenegro, Serbia, Turkey.
(Switzerland)

- non-EU (third) countries

automatic eligible for funding

Afghanistan, Albania, Algeria, American Samoa, Angola, Argentina, Armenia, Azerbaijan, Bangladesh, Belarus, Belize, Benin, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Central African Republic, Chad, Chile, Colombia, Comoros, Congo (Democratic Republic), Congo (Republic), Costa Rica, Côte d'Ivoire, Cuba, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Eritrea, Ethiopia, Fiji, Gabon, Gambia, **Georgia**, Ghana, Grenada, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Indonesia, Iran, Iraq, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Korea (Democratic Republic), Kosovo, Kyrgyz Republic, Lao, Lebanon, Lesotho, Liberia, Libya, Macedonia FYR, Madagascar, Malawi, Malaysia, Maldives, Mali, Marshall Islands, Mauritania, Mauritius, Micronesia, Moldova, Mongolia, Montenegro, Morocco, Mozambique, Myanmar/Burma, Namibia, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Palau, Palestine, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Rwanda, Samoa, Sao Tome and Principe, Senegal, Serbia, Seychelles, Sierra Leone, Solomon Islands, Somalia, South Africa, South Sudan, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Sudan, Suriname, Swaziland, Syrian Arab Republic, Tajikistan, Tanzania, Thailand, Timor-Leste, Togo, Tonga, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zambia, Zimbabwe.

not automatically eligible for funding

Participation:

3 independent legal entities from **3 different EU** member or associated states
exception: only 1 legal entity for ERC, TMA, co-fund, ...

Funding:

up to 100% (non-profit up to 100%;
industry, SME: innovative action, co-funding up to 70%)

HORIZON 2020

- funding opportunities in various fields
- attractive programmes and actions
- simplified conditions (but still administrative work needed)

low success rate compared to national funding
(overall in FP7: 10 - 25 % of proposals successful)

- Project:**
- excellent science
 - innovative,
 - new leading-edge research,
 - European added value

→

worth to participate in H2020
good chances for funding

→ Participant portal: <http://ec.europa.eu/research/participants/portal/>
search for funding opportunities
download EU documents, detailed call description

Thank you for your attention!

More information:

Participant Portal (<http://ec.europa.eu/research/participants/portal>)

official documents for H2020:

http://ec.europa.eu/research/participants/portal/desktop/en/funding/reference_docs.html

Research cooperation beyond the EU/Europe – "Open to the world“:

http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/international-cooperation_en.htm