

Horizon 2020: opportunities for CLIC in 2014-2015

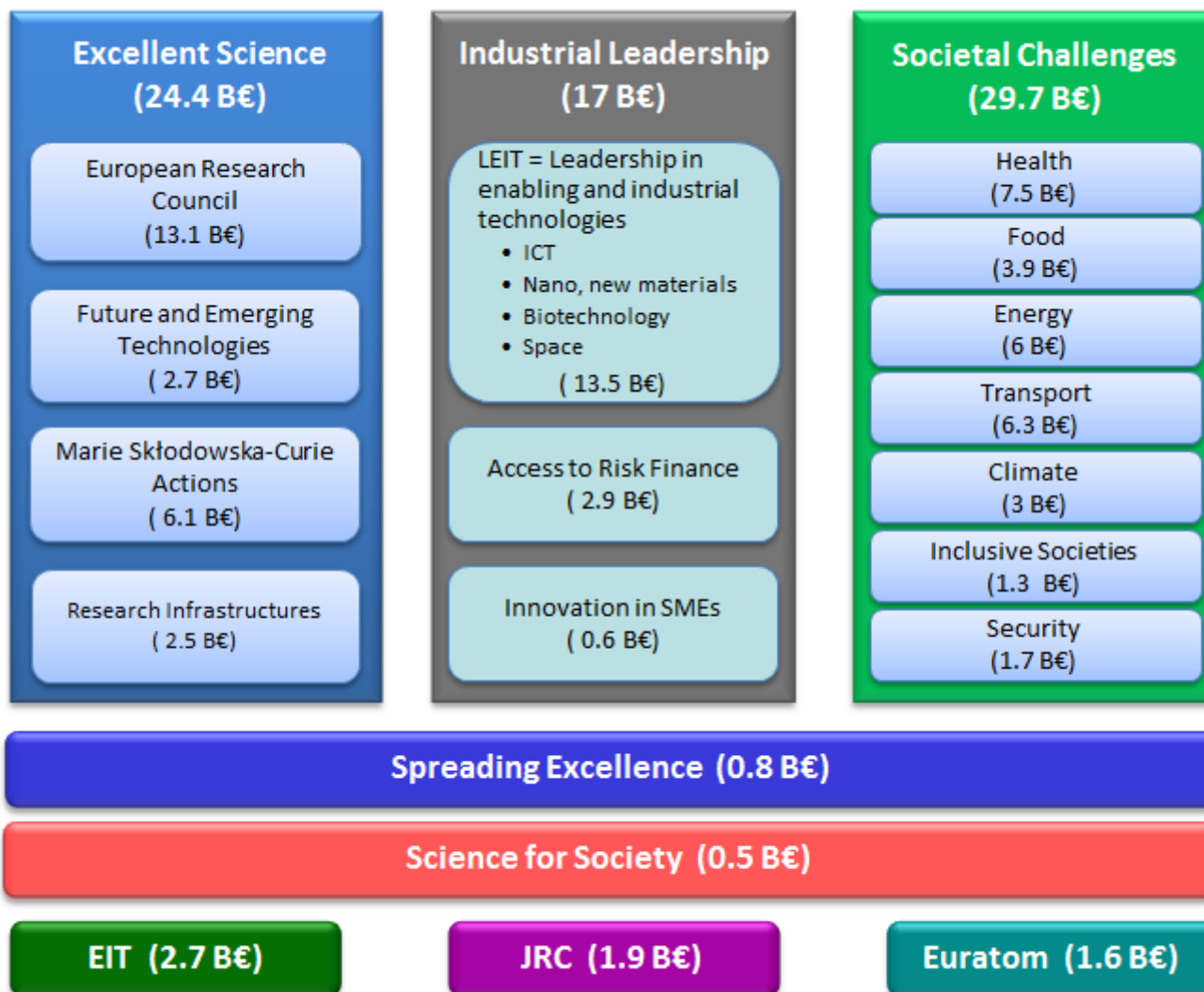
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- Horizon 2020 (overview)
- H2020 Calls in 2014-2015 with potential relevance to CLIC

EU funding and CLIC

- The EU Framework Programmes **are not designed to support** R&D in particle physics and related technologies
- Proposals from the CLIC Collaboration can be successful only for EU projects that **fully match the objectives** of the specific Work Programme / Call / Action
- **Fully bottom-up** H2020 programmes:
 - ✓ Marie-Curie
 - ✓ ERC
 - ✓ FET - Open
- All other H2020 programmes contain a number of Calls and Actions / Topics, which are **defined in advance by the EC** with focus on applications and innovation (however, less prescriptive than in FP7)
- Significant **budget increase**, especially for ERC and Marie-Curie
- CERN-EC MoU: **vehicle for communication** with the EC on priority topics, e.g. the European Strategy for Particle Physics

New FP: 78.6 B€ to support Research and Innovation in 2014-2020



H2020 Calls in 2014-2015, with some relevance to CLIC

Research Infrastructure programme

- ✓ Design Studies (2014)
- ✓ Implementation Phase (2014)
- ✓ Pre-commercial procurement (2015)

Marie-Sklodowska-Curie programme

- ✓ Innovative Training Networks (2014 and 2015)
- ✓ Research and Innovation Staff Exchange (2014 and 2015)

ERC

- ✓ Starting, Consolidator and Advanced Grants (2014 and 2015)

FET

- ✓ FET Open (2014 and 2015)

SME instrument

- ✓ Innovation in SMEs (2014 and 2015)

Research Infrastructures: Design Studies

Call H2020-INFRADEV-1-2014-1, deadline **02.09.2014**

Topic: Design Studies

Scope: Design studies should address all key questions concerning the technical ... feasibility of new or upgraded facilities, leading to a 'conceptual design report' showing the maturity of the concept and forming the basis for identifying and constructing the next generation of Europe's and the world's leading research infrastructures. Conceptual design reports will present major choices for design alternatives and associated cost ranges

Activities: Scientific and technical work, i.e. (1) the drafting of concepts and engineering plans for the construction, as well as the creation of final prototypes for key enabling technologies and implementation plans for transfer of knowledge from existing prototypes to the new research infrastructure; (2) scientific and technical work to ensure that the beneficiary scientific communities exploit the new facility from the start with the highest efficiency (3) the identification of the best possible site(s) for setting up new facilities; (4) the estimated budget for construction and operation ...

 **The CLIC project has already produced a CDR, so it does not fit readily as a main topic of a DS proposal. However, a DS for novel FELs based on CLIC technology is an interesting option.**

Research Infrastructures: Implementation Phase

Call H2020-INFRADEV-4-2014/2015, deadline **02.09.2014**

Topic: Implementation of ESFRI and other WCRI

Scope: Proposal should define synergies and complementarity, optimise technological implementation, define workflows and ensure coordination, harmonisation, integration and interoperability of data, applications and other services between the ESFRI and other research infrastructure initiatives in specific thematic areas. ... technological innovation and innovative processes with key industry partners....

Activities: Coordination of joint activities, development of common technologies and services, exploiting synergies between clusters of RIs of pan-European relevance

✓ Budget per proposal: between € 6 and €15 million

✓ CRISP-II is under preparation and CERN/BE provided input to the CRISP Steering Committee indicating the following main priorities

- Infrastructures for superconducting RF assembly and tests
- Efficient RF High-Power generation and distribution

✓ The top and most common priorities identified by the partners for CIRSP-II are, for the moment: IT, Detectors and DAQ

 **Most likely topics relevant for CLIC will not be part of this new project.**

Research Infrastructures: Procurement schemes

Call H2020-INFRA-SUPP-2015-2, deadline **14.01.2015**

Topic: Innovative procurement pilot action in the field of scientific instrumentation

Scope: The aim of this action is to foster the innovation capacity of research infrastructures by stimulating R&D partnership with industry so as to develop the EU capacities and industrial supply in high-tech areas such as scientific instrumentation.

Activities:

Pre-commercial procurement in the field of scientific instrumentation (PCP)

Proposals will define requirements and terms of reference for common procurement of scientific instrumentation and organise joint PCP action encouraging research, development and validation of breakthrough solutions that can bring radical scientific and efficiency improvements in research infrastructures services.

Public procurement of innovative scientific instrumentation (PPI)

Proposals will focus on organizing joint procurement of innovative instrumentation by research infrastructures to enhance their services, better serving their communities.

N.B. Funding mode (t.b.c.): EC contribution of 20% of the costs. The major part is to be committed by the funding agencies launching the calls / tenders for public procurement.

Marie Curie ITNs

Call H2020-MSCA-ITN-2014, deadline 09.04.2014

- ✓ Networks of research institutes, universities (and industrial partners) for providing training to young scientists and engineers through research projects and other training activities
- ✓ Fully bottom-up approach (beam instrumentation and accelerator technologies would fit into the Work Programme)
- ✓ Marie Curie funding may be used for covering 100% personnel costs (junior fellows, no post-docs) + training activities
- ✓ Involvement of industrial partners is practically mandatory in ITNs
- ✓ Emphasis on multidisciplinary and intersectorial projects
- ✓ Enrolment of fellows in PhD programmes expected
- ✓ ITNs in H2020 will remain very competitive as in FP7 (success rate ~ 10%)

Marie Curie Industry-Academia partnerships

Call H2020-MSCA-RISE-2014, deadline 24.04.2014

- ✓ Inter-sectorial partnerships based on exchange of scientists, engineers and other staff for research collaborations and knowledge sharing activities
- ✓ Fully bottom-up approach (beam instrumentation and accelerator technologies would fit into the Work Programme)
- ✓ Marie Curie funding covers a flat-rate contribution (subsistence) for each month of exchange stays in a partner institute or industry, plus lump-sums for the hosting partners and for management / overheads
- ✓ Involvement of industrial partners is mandatory
- ✓ Focus on implementation of the joint research and innovation activities by seconding and/or hosting eligible staff members (not only researchers)

Marie Curie International cooperation partnerships

Call H2020-MSCA-RISE-2014, deadline 24.04.2014

- ✓ International partnerships based on exchange of scientists, engineers and other staff for research collaborations and knowledge sharing activities
- ✓ Fully bottom-up approach (beam instrumentation and accelerator technologies would fit into the Work Programme)
- ✓ If Academia-Academia partnership, the project has to expand to outside the EU
- ✓ Marie Curie funding covers a flat-rate contribution (subsistence) for each month of exchange stays in a partner institute or industry, plus a lump-sum for the hosting partners
- ✓ Focus on implementation of the joint research and innovation activities by seconding and/or hosting eligible staff members (not only researchers)

N.B. Participants from industrialised countries (USA, Japan, China, etc.) are expected to fund their costs for the exchange programmes.

ERC Grants

Call for Starting, Consolidator and Advanced Grants,

deadlines **25.03.2014, 20.05.2014 and 21.10.2014**

- ✓ Funding to support excellent investigators and their research teams to pursue ground-breaking, frontier high-gain/ high-risk research
- ✓ Large budget increase (+ 5 B€) compared to FP7
- ✓ StG, CoG, AdG provide up to 2.0, 2.5 and 3.5 M€ for 5 years. ERC funding may be used for personnel, equipment and other direct costs
- ✓ Fully bottom-up approach (research topics are not defined by the EC)
- ✓ Excellence of the Principle Investigator (PI) and of the project are the only evaluation criteria
- ✓ The PIs must have outstanding track record
- ✓ Short proposals (15 pages + 5-page abstract + CV and track record of PI)

FET Open scheme

Call for FET Open research projects,

deadlines **30.09.2014, 31.03.2015 and 29.09.2015**

✓Funding to support early stage, high risk visionary science and technology collaborative research projects for exploration of new foundations for radically new future technologies.

✓New programme (in FP7 limited to ICT only)

✓FET Open will provide typically 2-4 M€ per project. EC funding may be used for personnel, equipment and other direct costs.

✓Fully bottom-up approach (S&T topics are not defined by the EC)

✓Long-term vision, breakthrough S&T target, foundational, novelty, high-risk and interdisciplinarity will be assessed

✓Light application and approval procedure (short proposals of max. 15 pages)

 **Could be interesting for novel accelerator concepts.**

SME instrument

Call for support to innovative SMEs

Implemented as part of the Industrial Leadership and Societal Challenges WPs

Deadlines: several cut-off dates; approx. every 3 months starting in June 2014

Phase 1: a feasibility study shall be developed verifying the technological/practical as well as economic viability of an innovation idea/concept with considerable novelty to the industry sector in which it is presented (new products, processes, design, services and technologies or new market applications of existing technologies). Funding will be provided in the form of a **lump sum of EUR 50,000**. Projects should last around 6 months.

Phase 2: innovation actions will be supported that address the challenges identified in the specific programmes and that demonstrate high potential in terms of company competitiveness and growth. Activities could include e.g. demonstration, testing, prototyping, piloting, scaling-up, miniaturisation, design, market replication and the like aiming to bring an innovation idea (product, process, service, etc) to industrial readiness and maturity for market introduction close to deployment and market. Funding will be provided in the range of **EUR 0.5 and 2.5 million**. Proposals should last 12-24 months.

Phase 3: SMEs can benefit from indirect support measures and services as well as Access to Risk Finance instruments of H2020.




Not a generic Call, so the Work Programmes must be consulted first!

Conclusions

- ✓ Obtaining EC funding for activities relevant to CLIC under H2020 (2014-2015) may be possible under the following programmes:
 - Research Infrastructures (Design Study, Pre-commercial procurement scheme)
 - Marie-Curie (ITN networks or partnerships with industry, international coll.)
 - ERC (grants for exceptional PI leading a small team)
 - Future Emerging Technologies (FET)
 - Other thematic programmes (e.g. new manufacturing technologies) but only for specific applications and oriented towards the needs of European industry
- ✓ Detailed information about H2020 Calls and Work Programmes is available from the EU Projects Office

<http://cern.ch/cerneu>

 **Competition will be fierce across the board in H2020, but one has to dare to excel!**