Il panorama dei finanziamenti europei per la Ricerca e l'Innovazione

Arianna Morelli

10 Gennaio 2018

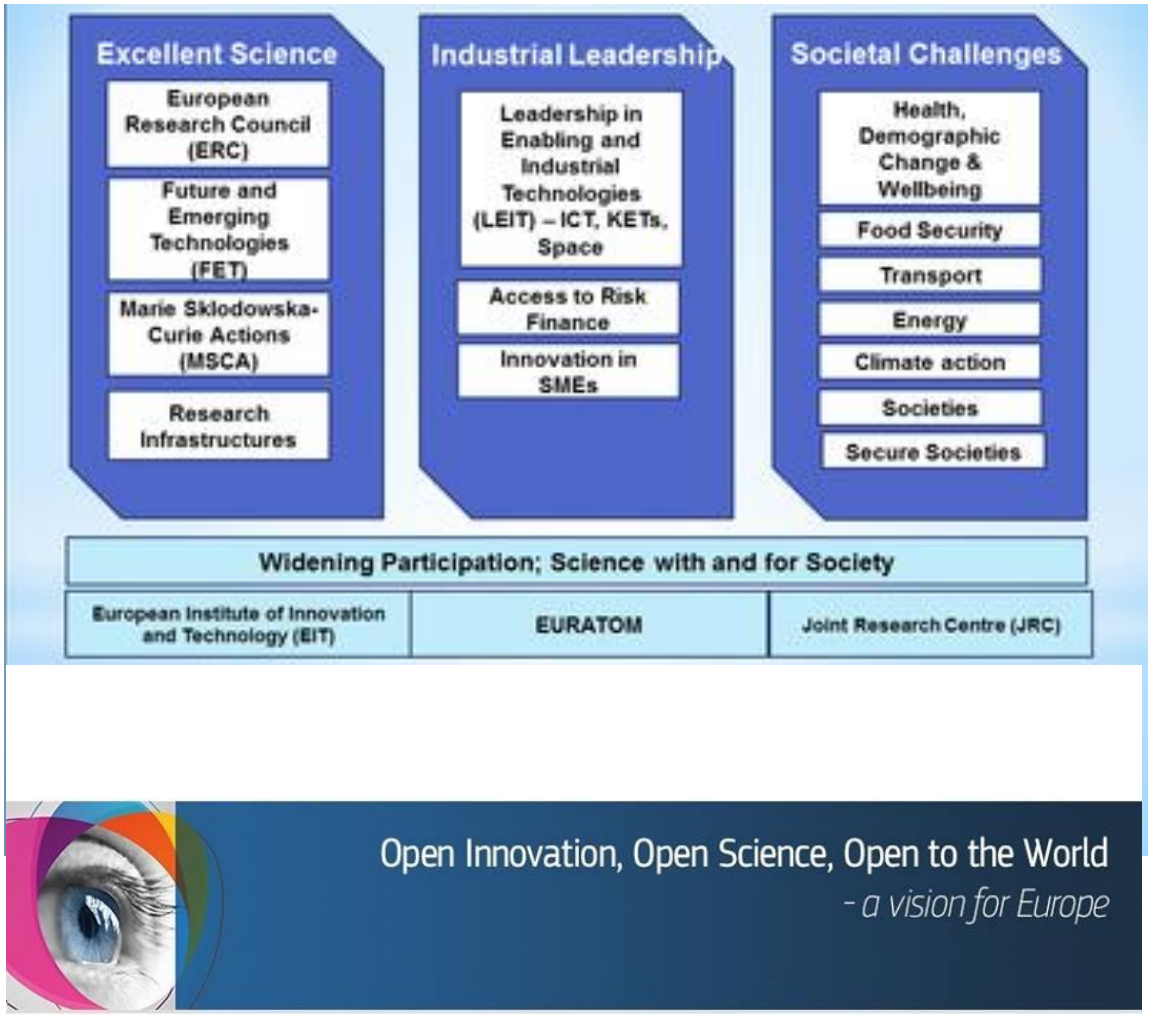
Horizon 2020

Framework Programme for research and innovation (2014- 2020) implementing the Innovation Union priorities with nearly €80 billion of funding available – in addition to the private investment that this money will attract

A challenge based and flexible approach to ensure Europe produces world-class science, removes barriers to innovation in Business practice and makes it easier for the public and private sectors to work together in adressing societal major concerns

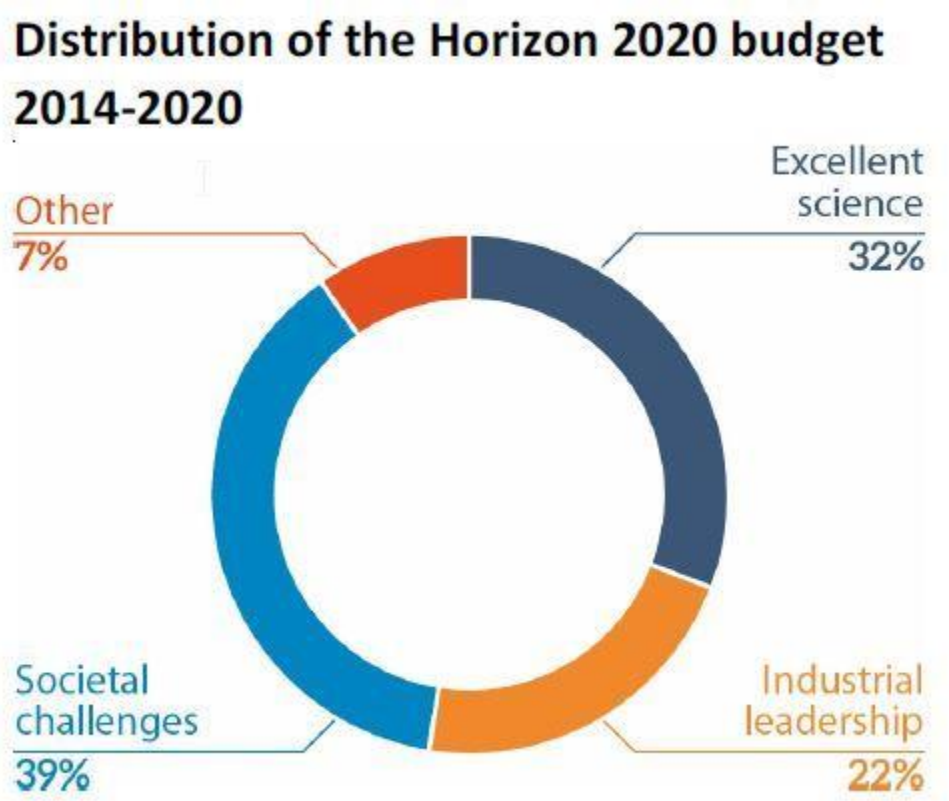
Horizon 2020 is designed to be a different kind of EU research programme - funding the entire value creation chain from fundamental research through to market innovation

H2020 structure: 3 main Pillars & Three Os – Open Innovation, Open Science, Open to the World



H2020: budget

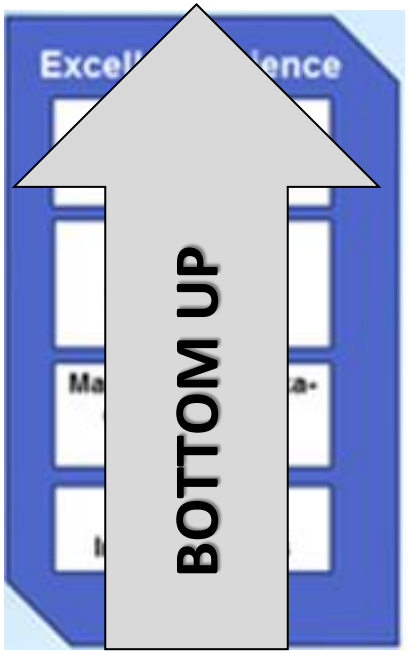
A budget of close to €80 billion for the 2014 to 2020 period



Source: European Commission

H2020 Pillar I: Excellent Science

OVERALL AIM: TO REINFORCE AND EXTEND THE EXCELLENCE OF THE UNION'S SCIENCE BASE AND TO CONSOLIDATE THE EUROPEAN RESEARCH AREA IN ORDER TO MAKE THE UNION'S RESEARCH AND INNOVATION SYSTEM MORE COMPETITIVE ON A GLOBAL SCALE. 4 DIFFERENT OBJECTIVES AND RELATED FUNDING SCHEMES



EUROPEAN RESEARCH COUNCIL (ERC)
FRONTIER RESEARCH FOR TALENTED AND CREATIVE INDIVIDUAL RESEARCHERS AND THEIR TEAMS

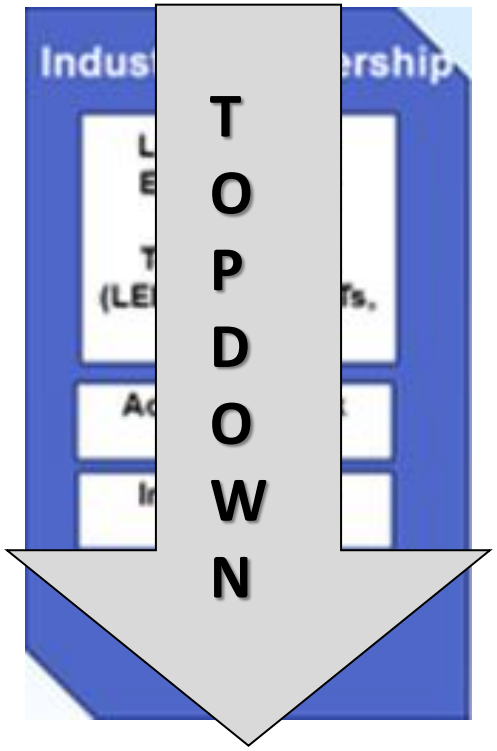
FUTURE AND EMERGING TECHNOLOGIES (FET)
COLLABORATIVE RESEARCH IN NEW ADVANCED AND PARADIGM-CHANGING INNOVATION AREAS (NOT ONLY ICT)

MARIE SKLODOWSKA-CURIE ACTIONS
TRAINING AND KNOWLEDGE-EXCHANGE OPPORTUNITIES FOR RESEARCHERS

RESEARCH INFRASTRUCTURES (AND E-INFRASTRUCTURE)
DEVELOP AND SUPPORT EUROPEAN RESEARCH INFRASTRUCTURES, FOSTER THEIR INNOVATION POTENTIAL, ATTRACTING WORLD-LEVEL RESEARCHERS AND TRAINING HUMAN CAPITAL

H2020 Pillar II: Industrial Leadership

OVERALL AIM: TO SPEED UP THE INVESTMENT IN TECHNOLOGIES AND INNOVATIONS VIA ACTIVITIES ESPECIALLY DEDICATED TO THE INDUSTRIES AND TO HELP INNOVATIVE EUROPEAN SMES TO GROW INTO WORLD-LEADING COMPANIES.



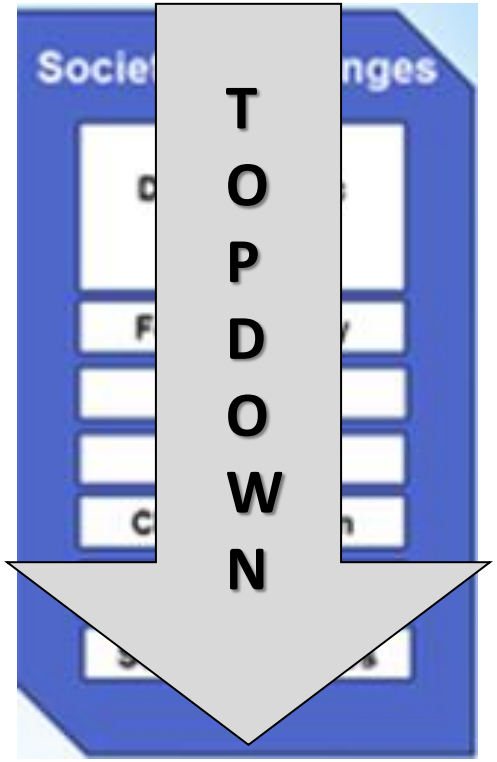
LEIT – LEADERSHIP IN ENABLING TECHNOLOGIES: RESEARCH, DEVELOPMENT, DEMONSTRATION AND INNOVATION ACTIVITIES IN MULTI-DISCIPLINARY, KNOWLEDGE AND CAPITAL-INTENSIVE TECHNOLOGIES (**KEY ENABLING TECHNOLOGIES**) THAT CUT ACROSS MANY DIVERSE SECTORS PROVIDING THE BASIS FOR COMPETITIVE ADVANTAGE FOR EUROPEAN INDUSTRY.

ACCESS TO FINANCIAL RISK – LEVERAGING PRIVATE FINANCE & VENTURE CAPITAL AND FAVOUR EASY ACCESS FOR THE SMES ,COMPANIES AND OTHER TYPES OF ORGANISATION ENGAGED IN RESEARCH AND INNOVATION (R&I).

INNOVATION IN SMES - SUPPORT PROJECTS WITH A EUROPEAN DIMENSION THAT LEAD TO RADICAL CHANGES IN BUSINESS (PRODUCT, PROCESSES, SERVICES, MARKETING ETC.)IN ALL KIND OF SMES

H2020 Pillar III: Societal Challenge

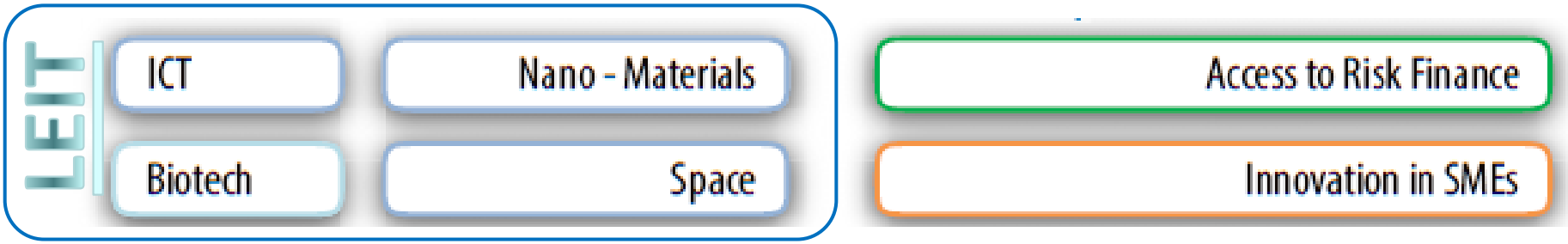
OVERALL AIM: TO ADDRESS MAJOR CONCERNS SHARED BY CITIZENS IN EUROPE AND ELSEWHERE AS IDENTIFIED IN THE POLICY PRIORITIES OF THE EUROPE 2020 STRATEGY



- BREAKTHROUGH SOLUTIONS COME FROM MULTI-DISCIPLINARY COLLABORATIONS, INCLUDING SOCIAL-SCIENCES AND HUMANITIES
- CHALLENGE-BASED APPROACH FOCUSING ON POLICY PRIORITIES WITHOUT PREDETERMINING THE PRECISE CHOICE OF TECHNOLOGIES OR SOLUTIONS THAT SHOULD BE DEVELOPED
- ADDRESSING CHALLENGES REQUIRES FULL INNOVATION CYCLE: RESEARCH + INNOVATION

PILLAR 2. INDUSTRIAL LEADERSHIP

PILLAR II: Leadership industriale



- Obiettivi specifici:
  - **Leadership in enabling and industrial technologies (LEIT)**
    - Rafforzamento della leadership industriale dell'Europa, mediante la ricerca, lo sviluppo tecnologico, la dimostrazione e l'innovazione nel settore delle tecnologie abilitanti e industriali (soprattutto le Key enabling technologies - **KET**)
  - Migliorare **l'accesso al capitale di rischio** per investire nella ricerca e nell'innovazione
  - Rafforzare l'innovazione nelle **piccole e medie imprese**

H2020: SME Instrument

- Indirizzato a tutti i tipi di SME innovative che presentino una forte volontà di crescere, svilupparsi e internazionalizzarsi
- Solo SME potranno richiedere finanziamenti (sostegno a una sola impresa è possibile, ma collaborazione certamente consigliabile)
- Competitivo, dimensione EU → solo le migliori idee passano la fase 1
- Orientato al mercato; attività close-to-market: finanziamento al 70%
- Costituito da 3 fasi – piu' il coaching
- Applicato in tutte le 'societal challenges' e 'key enabling technologies'

H2020: SME Instrument

Approccio senza soluzioni di continuità – 3 fasi

IDEA BUSINESS COACHING durante il progetto MERCATO

H2020: SME Instrument

Fase 1: concetto e valutazione della fattibilità	Fase 2: R&D, dimostrazione, market replication	Fase 3: Commercializzazione
Input: Idea/Concept in "Business Plan I" (~ 10 pages)	**Input:** "Business plan II" + "Description of activities under Phase2" (~ 30 pp.)	**Input:** "Business plan III" + **Opportunities:** 'Quality label' for successful Phase 1 & 2
Main Activities: Feasibility of concept Risk assessment IP regime Partner search Design study Pilot application	**Main Activities:** Development Prototyping Testing Piloting Miniaturisation Scaling-up Market replication	Easier access to private finance Support via networking, training, coaching, information, addressing i.a. IP management, knowledge sharing, dissemination SME window in the EU financial facilities (debt facility and equity facility)
Output: elaborated "Business plan II"	**Output:** investor-ready "Business plan III"	
Lump sum: around 50.000 € ~ 6 months	Output based payments: 1 to 3 M€ EU funding ~ 12 to 24 months	No direct funding

PILLAR 3. SOCIETAL CHALLENGES

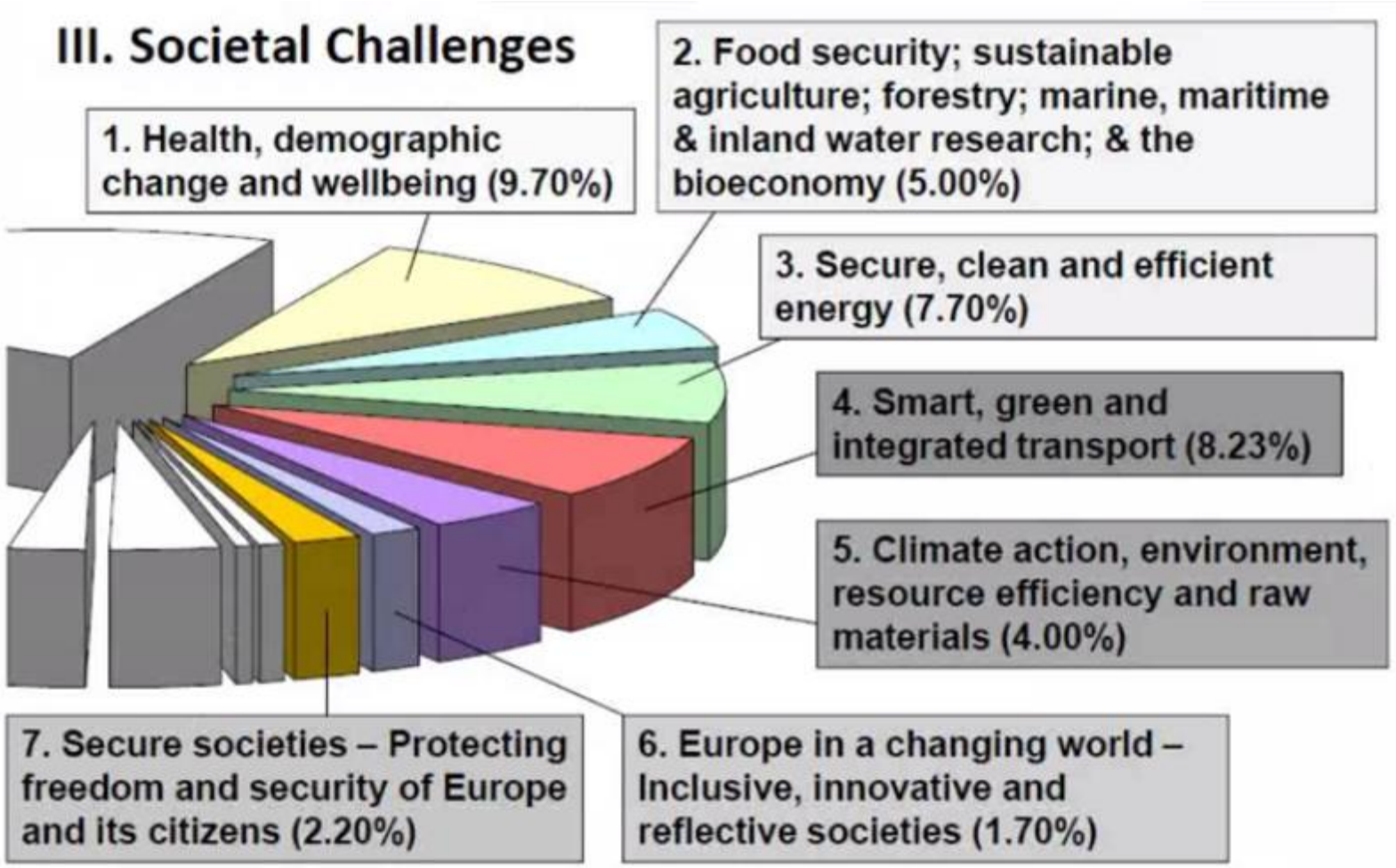
Societal challenges: rationale

- Concerns of **citizens and society/EU policy objectives** (climate, environment, energy, transport, etc.) cannot be achieved without innovation
- Breakthrough solutions come from **multi-disciplinary collaborations**, **including social-sciences and humanities**
- Addressing challenges requires **full innovation cycle**: research + innovation
- **Challenge-based approach focusing on policy priorities** without predetermining the precise choice of technologies or solutions that should be developed

PILLAR III: Sfide sociali

- Per sostenere attività lungo la catena “ricerca di laboratorio – accesso al mercato” nel quadro di priorità di Europa 2020:
  1. Health, demographic change and wellbeing;
  2. Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy;
  3. Secure, clean and efficient energy;
  4. Smart, green and integrated transport;
  5. Climate action, environment, resource efficiency and raw materials
  6. Europe in a changing world - inclusive, innovative and reflective societies;
  7. Secure societies - protecting freedom and security of Europe and its citizens.

Pillar III: budget



Priority 3. Societal Challenges

1. **SC1: SALUTE, EVOLUZIONE DEMOGRAFICA E BENESSERE**

- Comprendere le determinanti della salute, migliorare la promozione della salute e la prevenzione delle malattie
- Sviluppo di programmi di screening efficaci e miglioramento della valutazione della predisposizione alle malattie
- Migliorare i metodi diagnostici
- Invecchiamento attivo, vita indipendente e assistita
- Miglioramento degli strumenti e dei metodi scientifici a sostegno dell'elaborazione delle politiche e della regolamentazione
- Ottimizzare l'efficienza e l'efficacia dei sistemi sanitari
- diffusione delle migliori pratiche e di tecnologie e approcci innovativi

Priority 3. Societal Challenges

2. SC2: SICUREZZA ALIMENTARE, AGRICOLTURA SOSTENIBILE, RICERCA MARINA E MARITTIMA E BIOECONOMIA

- Agricoltura e silvicoltura sostenibili
- Un settore agroalimentare sostenibile e competitivo per un'alimentazione sicura e sana
- Liberare il potenziale delle risorse biologiche acquatiche
- Bioindustrie sostenibili e competitive

Priority 3. Societal Challenges

3. SC3: ENERGIA SICURA, PULITA ED EFFICIENTE

- Ridurre il consumo energetico
- Fornitura di energia elettrica a basso costo e a basse emissioni
- Combustibili alternativi e fonti energetiche mobili
- Un'unica rete elettrica europea intelligente
- Nuove conoscenze e tecnologie
- Smart Cities and communities

Priority 3. Societal Challenges

4. SC4: TRASPORTI INTELLIGENTI, ECOLOGICI E INTEGRATI

- Trasporti efficienti dal punto di vista delle risorse che rispettino l'ambiente
- Migliorare la mobilità, diminuire il traffico e aumentare la sicurezza
- Primato mondiale per l'industria europea dei trasporti
- Ricerca socioeconomica e attività orientate al futuro per l'elaborazione delle strategie politiche

Priority 3. Societal Challenges

5. SC5: AZIONE PER IL CLIMA, EFFICIENZA DELLE RISORSE E MATERIE PRIME

- Lotta e adattamento ai cambiamenti climatici
- Gestione sostenibile delle risorse naturali e degli ecosistemi
- Garantire un approvvigionamento sostenibile di materie prime non energetiche e non agricole
- Consentire la transizione verso un'economia verde grazie all'innovazione ecocompatibile
- Sviluppare sistemi completi e stabili di informazione e osservazione ambientali a livello mondiale

Priority 3. Societal Challenges

6. SC6: <u>L'Europa in un mondo che cambia - società inclusive, innovative e riflessive</u>

- Società inclusive:
  - Promuovere una crescita intelligente, sostenibile e inclusiva
  - Costruire in Europa società inclusive e flessibili
- Società innovative:
  - Rafforzare il ruolo svolto dall'Europa sulla scena mondiale
  - Esplorare nuove forme di innovazione, che includano l'innovazione e la creatività sociale
- Società riflessive patrimonio culturale e identità europea:
  - lo studio del patrimonio culturale, della memoria, dell'identità, dell'integrazione e delle interazioni e traduzioni culturali in Europa

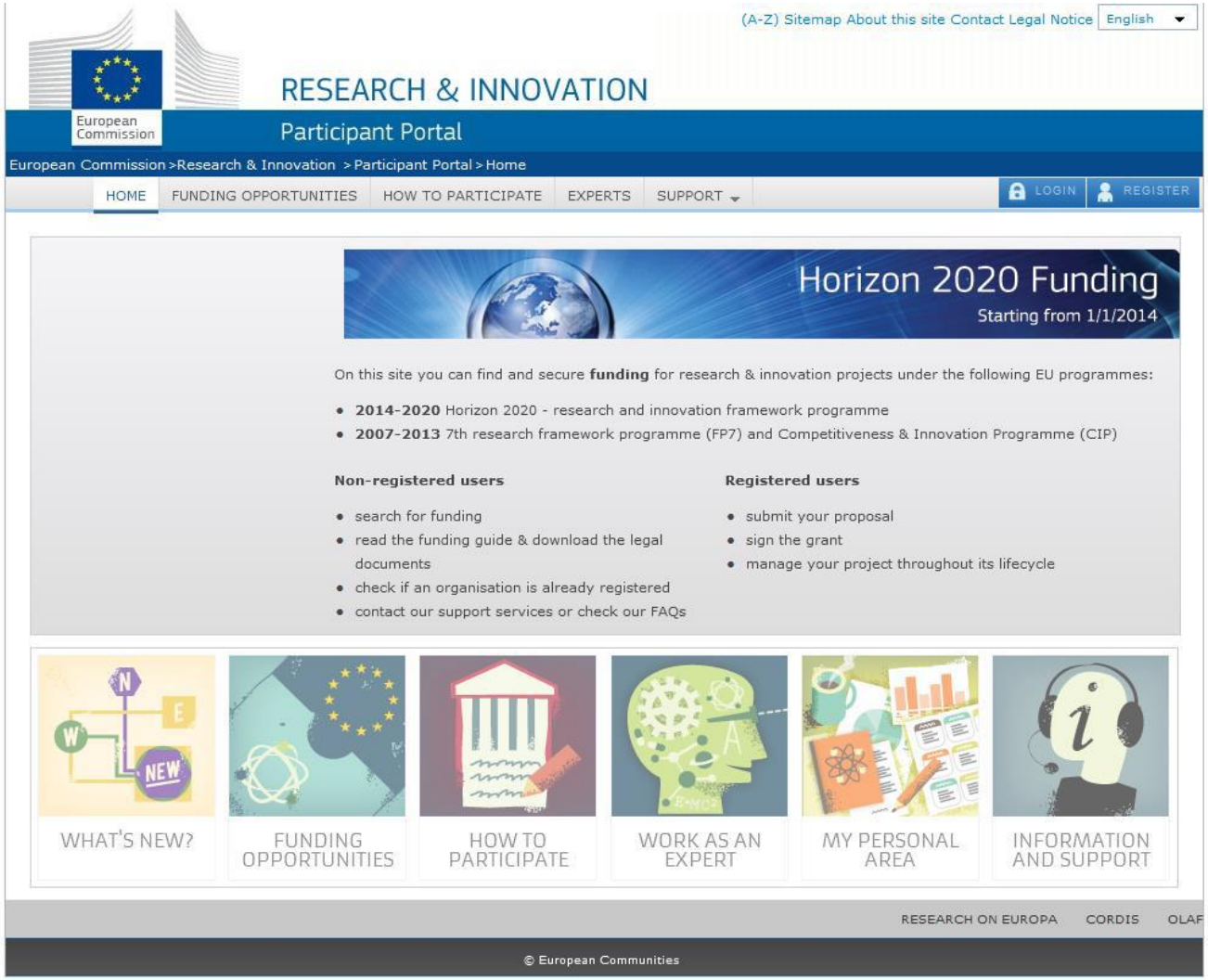
Priority 3. Societal Challenges

7. SC7: SOCIETA' SICURE

- Lotta contro la criminalità e il terrorismo
- Potenziare la sicurezza mediante la gestione delle frontiere
- Garantire la sicurezza informatica
- Migliorare la capacità di reazione dell'Europa di fronte alle crisi e alle calamità
- Garantire la tutela della vita privata e della libertà su Internet e rafforzare la dimensione sociale della sicurezza

Come partecipare

Participant portal

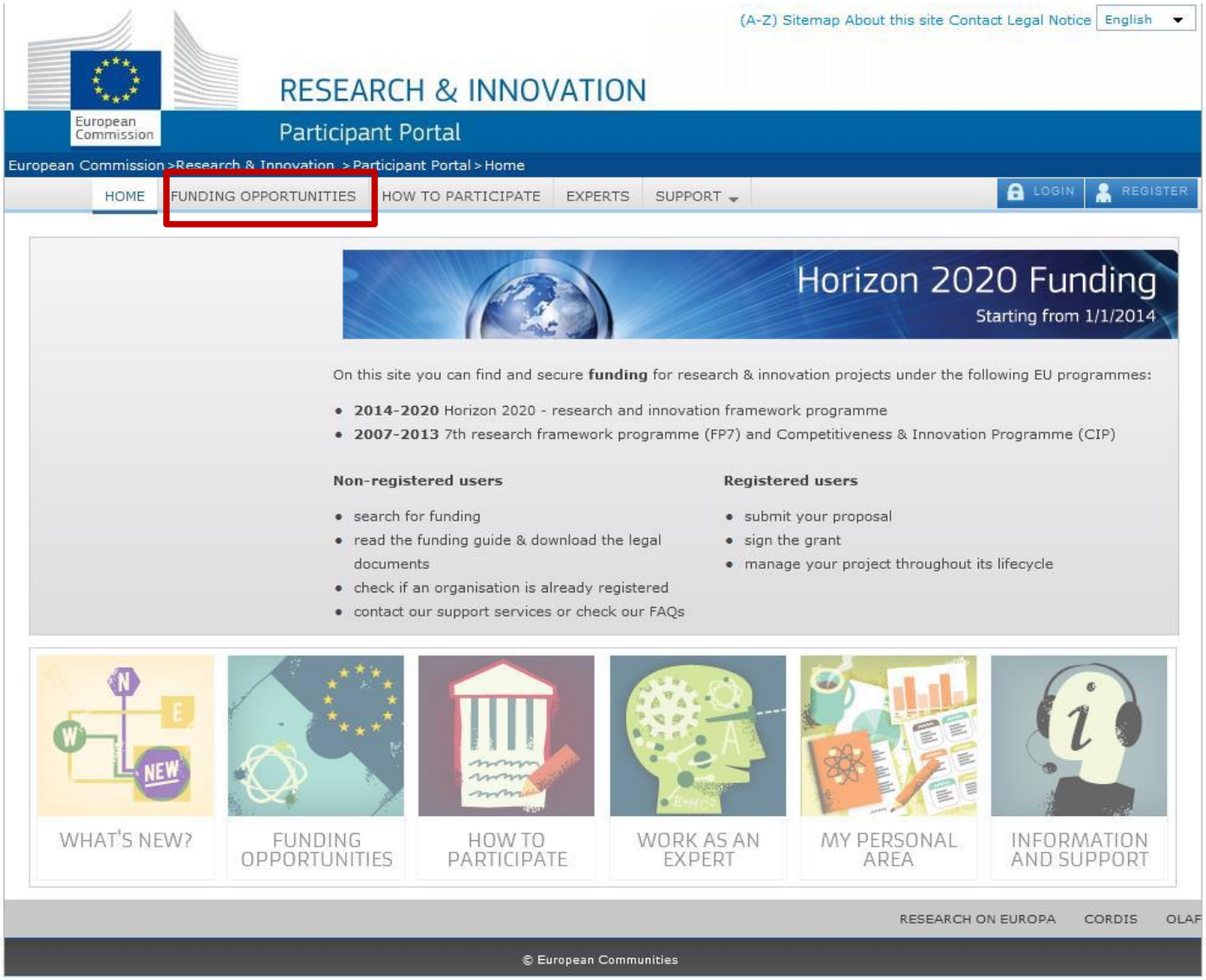


It is the only authoritative source of information to

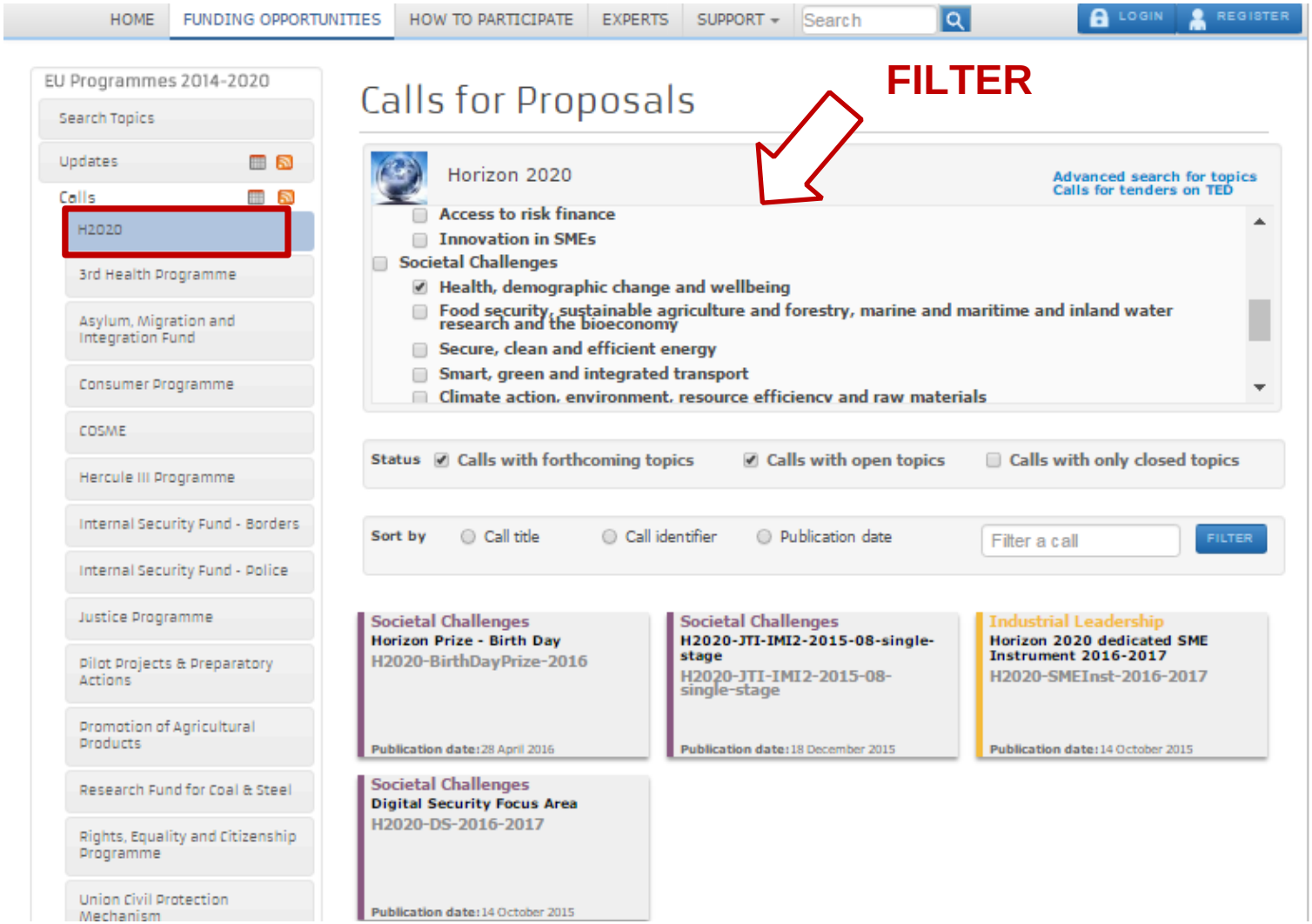
- Find calls and submit proposal to them
- Access to the H2020 Online manual (step by step instructions on how to prepare and submit your proposal, register your organisation, and prepare or manage your grant) and the reference documents

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

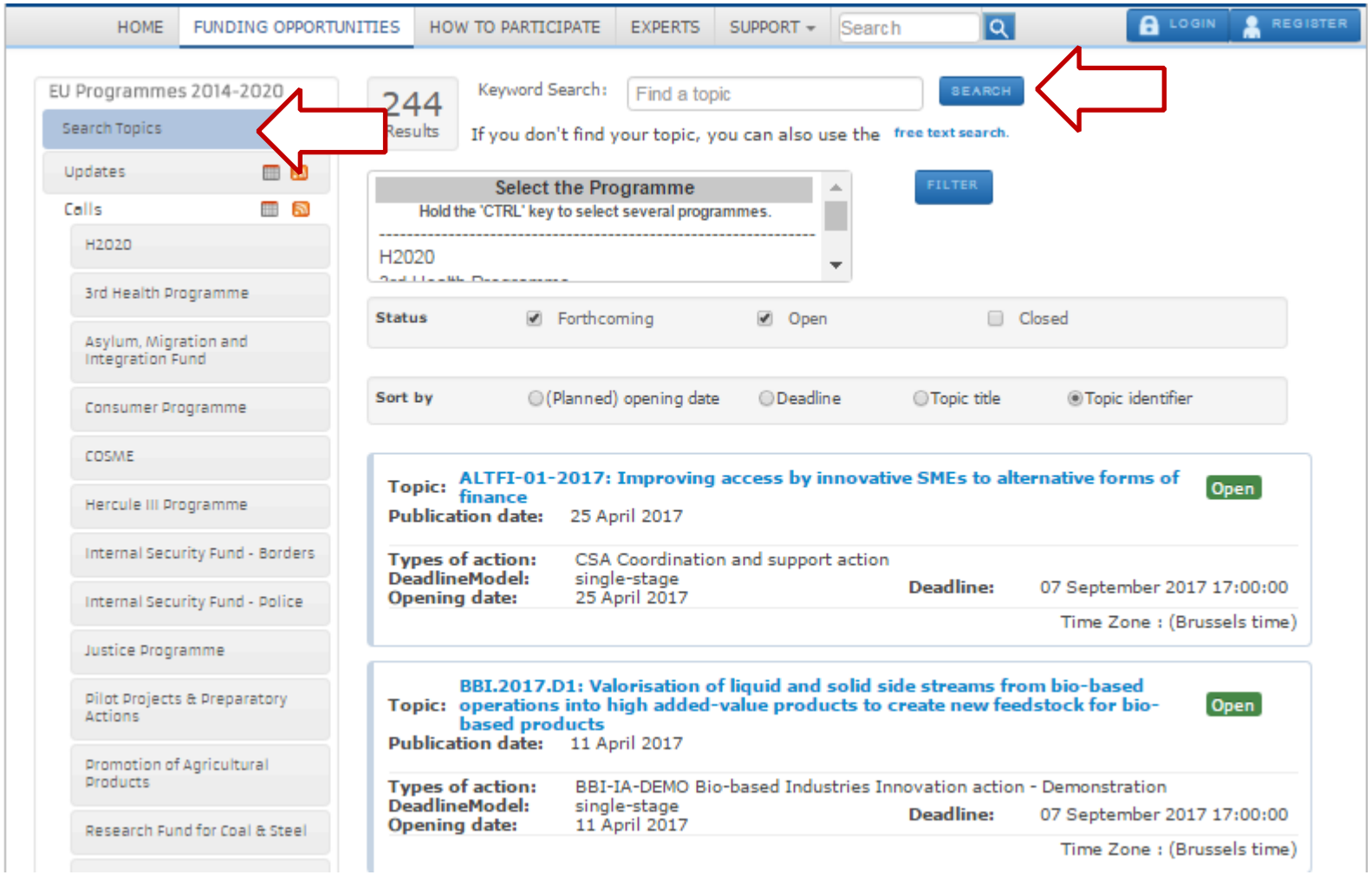
Participant portal: search opportunities



Participant portal: search opportunities by H2020 parts



Participant portal: search opportunities by keywords



Call page

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Internal Security Fund - Police
Call budget overview
CALL: INTERNET OF THINGS
Call identifier: H2020-IOT-2016-2017
Publication date: 14 October 2015
Horizon 2020
Pillar: Industrial Leadership
Work Programme Year: H2020-2016-2017
Work Programme Part: Cross-cutting activities (Focus Areas)
H2020 website
Call summary
+ More
Scene Setter:
Internet of Things - Focus Area (IoT- FA) ambition is to foster the take up of IoT in Europe and to enable the emergence of IoT ecosystems supported by open technologies and platforms. It will be
Call updates
+ More
08 December 2016 00:30 The submission session is now available for: IoT-03-2017(RIA)

Topic page

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Asylum, Migration and Integration Fund
Consumer Programme
COSME
Hercule III Programme
Internal Security Fund - Borders
Internal Security Fund - Police
TOPIC : R&I on IoT integration and platforms
Topic identifier: IoT-03-2017
Publication date: 14 October 2015
Types of action: RIA Research and Innovation action
DeadlineModel: single-stage
Opening date: 08 December 2016
Deadline: 25 April 2017 17:00:00
Time Zone : (Brussels time)
Horizon 2020
Pillar: Industrial Leadership
Work Programme Year: H2020-2016-2017
Work Programme Part: Cross-cutting activities (Focus Areas)
Call : H2020-IOT-2016-2017
H2020 website
Call budget overview
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11 January 2017 17:51
As of 1st January 2017, Switzerland is associated to the entire H2020 programme. In

Topic page: description

Specific Challenge:

The future design of the Internet of Things applications will depend crucially on the development of sophisticated platform architectures for smart objects, embedded intelligence, and smart networks. Most of the today's IoT systems are however mainly focused on sensors, whereas in the future actuation and smart behaviour will be the key points.

Research driven by ambitious use cases and benefiting from innovation areas in components, systems, networking and web technologies needs to be carried out to respond to the ever increasing needs of future IoT systems in terms of scalability, heterogeneity, complexity and dynamicity. IoT platforms should be open and easy-to-use to support third party innovation

Scope:

- Architectures, concepts, methods and tools for open IoT platforms integrating evolving sensing, actuating, energy harvesting, networking and interface technologies. Platforms should provide connectivity and intelligence, actuation and control features, linkage to modular and ad-hoc cloud services, Data analytics and open APIs as well as semantic interoperability across use cases and conflict resolution. The work may also address the emergence of an open Web of Things like environment with search capabilities, so that "thing events" can be published, consumed, aggregated, filtered, re-published and searched for. Platforms should be compatible with existing international developments addressing object identity management, discovery services, virtualisation of objects, devices and infrastructures and trusted IoT approaches. Proposed research and innovation should take advantage of previous work and build on existing platforms, such as FIWARE, CRYSTAL or SOFIA, if appropriate.

Expected Impact:

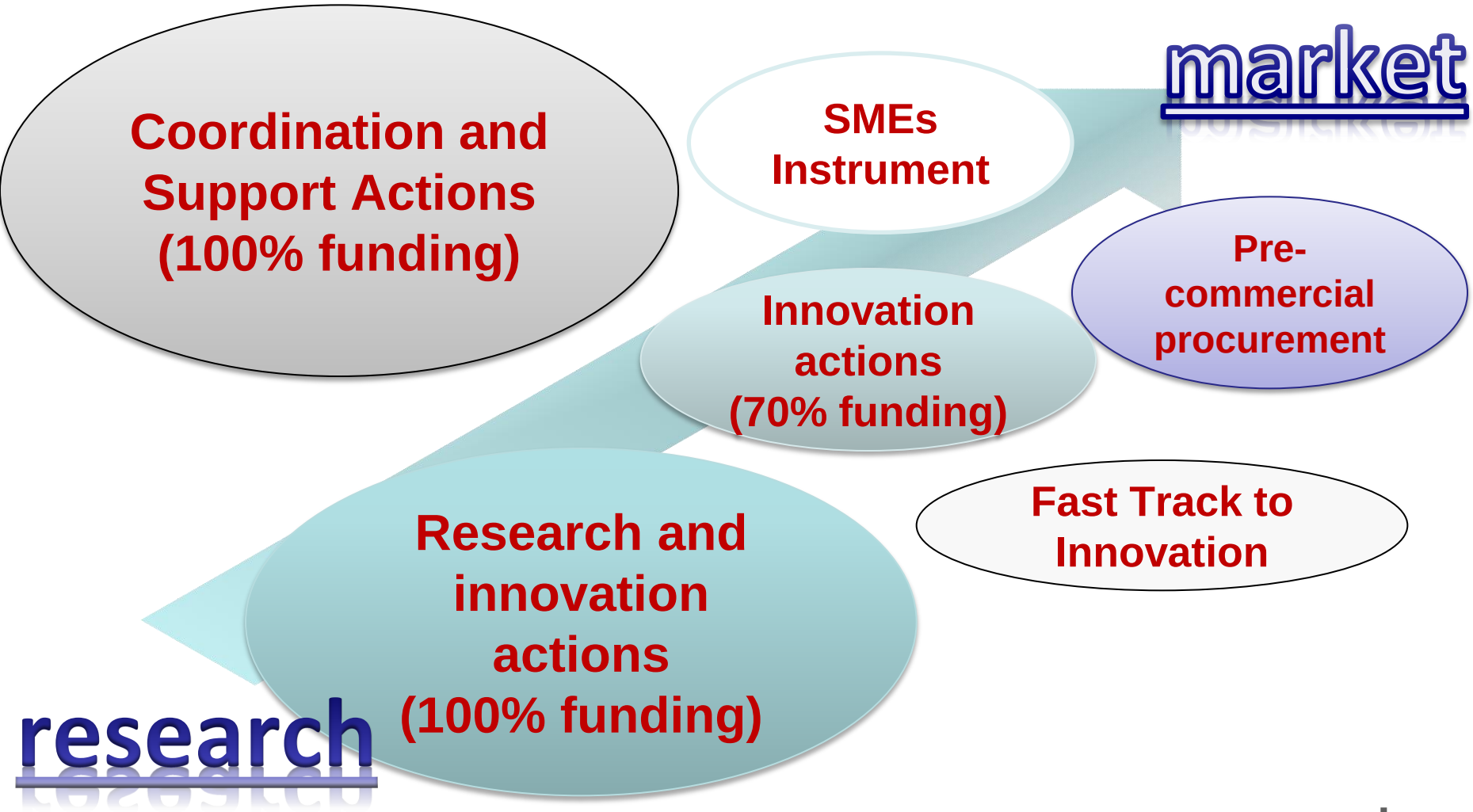
Two or more of the following criteria should be addressed, with success metrics where appropriate.

- Evolution of platform technologies and contribution to scientific progress enabling novel, advanced semi-autonomous IoT applications.
- Strengthen the industrial EU technological offer of innovative IoT solutions
- Contribution to emerging or future standards and pre-normative activities
- Increase of IoT usability and user acceptance, notably through strengthened security and user control
- Support emergence of an open market of services and innovative businesses
- Promote the adoption of EU platforms in European and international context

Cross-cutting Priorities:

Cross-cutting Key-Enabling Technologies (KETs)

Type of Actions in H2020



RIA

produzione di nuove conoscenze per verificare/migliorare l'efficacia di nuove tecnologie, prodotti, processi, servizi, soluzioni

ricerca di base o applicata, sviluppo o integrazione di tecnologie, validazione e test su scala ridotta (in lab. o in ambiente simulato)

100% dei costi ammissibili

3 legal entities, each established in different MS/AC

IA

produzione di impianti e disegni per nuovi o migliori prodotti, processi o servizi

attività di prototipazione, test, dimostrazione, "piloting", validazione su larga scala e progetti di prima applicazione commerciale

100% per enti no-profit (70% dei costi ammissibil)

3 legal entities, each established in different MS/AC

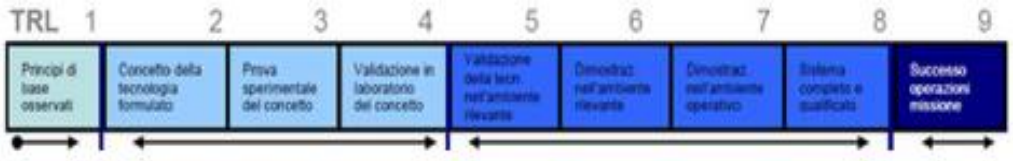
CSA

Coordinare e supportare attività di ricerca e innovazione

attività di standardizzazione, disseminazione, comunicazione,, rete, studi sui risultati di ricerca

100% dei costi ammissibili

1 legal entity



CHI PUO' PARTECIPARE?

- Qualsiasi soggetto giuridico stabilito in uno SM/PA
- Soggetti provvisti di personalità giuridica stabiliti in SM/PA
- JRC
- Organizzazioni internazionali di interesse EU
- Organizzazioni internazionali e soggetti stabiliti in Paesi terzi
- Soggetti giuridici no-profit

CHI PUO' RICEVERE FINANZIAMENTO?

- Qualsiasi soggetto giuridico stabilito in uno SM/PA
- JRC
- Paesi ICPC
- Organizzazioni internazionali di interesse EU
- Organizzazioni internazionali e soggetti stabiliti in paesi terzi non ICPC se previsto da WP e accordi bilaterali

CONDIZIONI MINIME

- Almeno 3 soggetti giuridici
- Ognuno in uno SM o PA diverso
- indipendenti gli uni dagli altri

DEROGHE

- Azioni di ricerca di frontiera ERC
- Strumento SMEs
- CSA
- MSCA
- Cofinanziamento di programmi di ricerca
- Dove indicato dai WP

Which countries are eligible for funding?

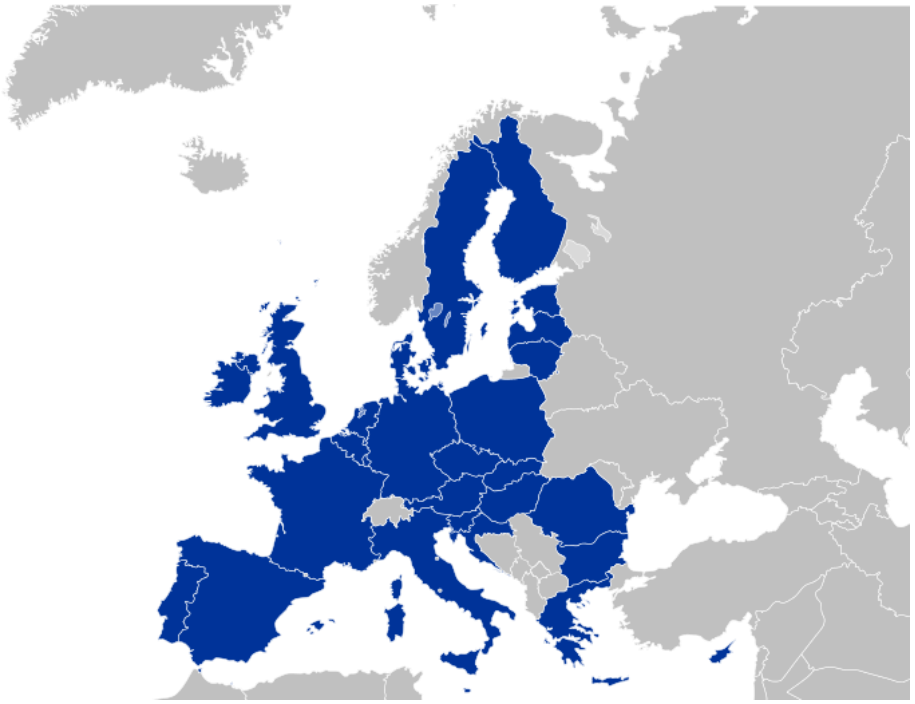
Horizon 2020 is open to participation from across the world

List of countries eligible for funding:

- Member States (MS) including their overseas departments
- The Overseas Countries and Territories (OCT) linked to the Member States (eg British Virgin Islands, French Polynesia …)
- Countries Associated to H2020 (AC)
- Developing countries (list of these countries are available in the annex to the work programme)

Only funding for other countries when provisions is made in the call text

Countries associated to H2020 (updated 01/01/2017)



- Iceland
- Norway
- Albania
- Bosnia and Herzegovina
- the former Yugoslav Republic of Macedonia
- Montenegro
- Serbia
- Turkey
- Israel
- Moldova
- Switzerland
- Faroe Islands
- Ukraine
- Tunisia
- Georgia
- Armenia

References

- Horizon 2020: http://ec.europa.eu/research/horizon2020/index_en.cfm?pg=home&video=none
- Europe 2020: http://ec.europa.eu/europe2020/index_it.htm
- Innovation Union: http://ec.europa.eu/research/innovation-union/index_en.cfm?pg=home
- EIT: eit.europa.eu
- ERC: http://erc.europa.eu/
- Marie Curie Actions: http://ec.europa.eu/research/mariecurieactions/
- ICT-Key Enabling Technologies: http://ec.europa.eu/enterprise/sectors/ict/key_technologies/index_en.htm
- FET: http://cordis.europa.eu/fp7/ict/programme/fet_en.html
- European Strategy Forum on Research Infrastructures - ESFRI: http://ec.europa.eu/research/infrastructures/index_en.cfm?pg=esfri
- EU International strategy for research and innovation http://ec.europa.eu/research/iscp/index.cfm?pg=strategy
- Participant Portal https://ec.europa.eu/research/participants/portal/desktop/en/home.html

UNIBO - Research and Third Mission Division – ARIC

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