

# Guide to H2020

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## EO Services in H2020

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This is a brief guide to the EU Horizon 2020 research programme from a perspective of suppliers and researchers in the domain of EO Geo-information Services. A more detailed assessment is available to EARSC members through the [EO Portal Research Corner](#).

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## 1. Overview

Horizon 2020 is the new EU programme for R&D following the 7<sup>th</sup> Framework Programme and which will apply from 2014 to 2020. It has the objective to boost the knowledge-driven economy of Europe and create jobs by supporting R&D activities which address societal challenges. As such it has many areas to which EO services can be applied and for which R&D activities could be conducted. Whilst there are other sources to get information on H2020 which will be referenced wherever possible in this document, this guide is specifically aimed to support EO Service providers find their place in the programme.

EARSC intention is to help the EU EO services community develop new and innovative products under the H2020 programme and to find the partners they need to complement their own R&D activity. Hence the guide will be useful both for EO services companies and experts or organisations in other fields which are looking for specific EO skills in their projects.

On 11<sup>th</sup> December the EC published the first work-programmes covering the first two years ie 2014 and 2015. An exception is the European Research Council (ERC) part of H2020 which will publish annual programmes.

## 2. H2020 Description and Budgets

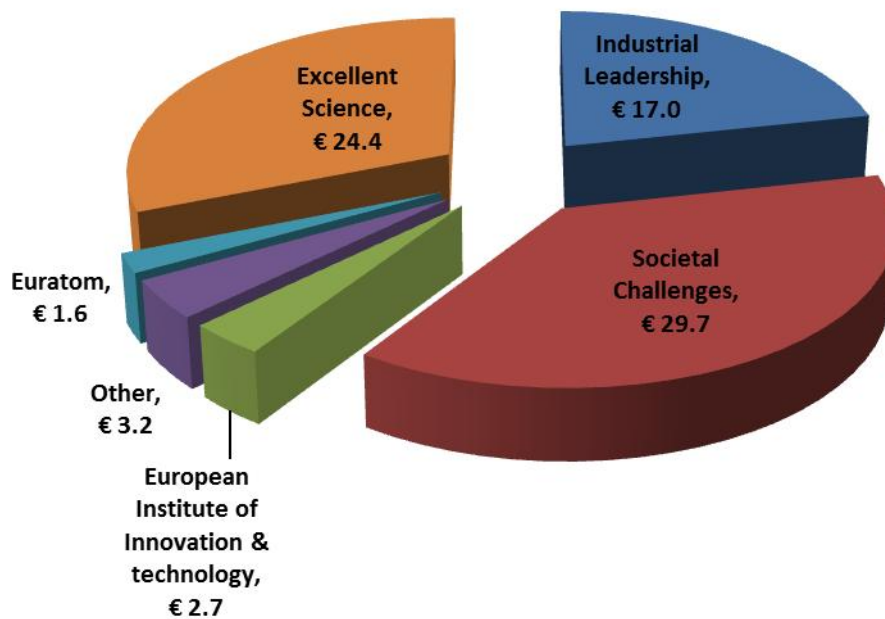
Horizon 2020 combines three previously separated programmes for research and innovation; the 7<sup>th</sup> Framework Programme, the competitiveness and innovation programme (CIP) and the EU contribution to the EIT (European Institute of Innovation and Technology).

The main changes are the focus on 3 pillars with nearly 95% of the allocated budget being directed towards these. Outside the three pillars described below, funding will go to The EIT and the JRC. In addition, there are increased opportunities for SME's with a dedicated instrument and simplified rules and procedures. It is anticipated that 15% of the total budget under *societal challenges* and *Leadership in enabling and industrial technologies* will go to SME's.

Interest for companies in EO services will be spread right across the H2020 programme. Whilst the space line and that for the societal challenge on climate change have specific actions linked to EO, many of the other societal challenges will also present opportunities and this guide will attempt to highlight and provide a road map for those which are most promising.

The total budget over the 7 years of H2020 is €70b split between the main pillars as shown:

## Horizon 2020 Budgets (2014 Basis)



The main three pillars of the H2020 programme are:

Pillar 1: Excellent Science: which focuses on supporting the European science base by enabling collaborative science through the development of new innovative talent, developing future enabling technologies (FET) and improving underpinning infrastructures.

The Excellent Science pillar has main four specific objectives:

The European Research Council (ERC) will provide attractive and flexible funding to enable talented and creative individual researchers and their teams to pursue the most promising avenues at the frontier of science, on the basis of Union-wide competition.

Future and emerging technologies will support collaborative research in order to extend Europe's capacity for advanced and paradigm-changing innovation. They will foster scientific collaboration across disciplines on radically new, high-risk ideas and accelerate development of the most promising emerging areas of science and technology as well as the Union-wide structuring of the corresponding scientific communities.

Marie Skłodowska-Curie Actions will provide excellent and innovative research training as well as attractive career and knowledge-exchange opportunities through cross-border and cross-sector mobility of researchers to best prepare them to face current and future societal challenges.

Research infrastructure (including e-infrastructures) will develop European research infrastructure for 2020 and beyond, foster their innovation potential and human capital, and complement this with the related Union policy and international cooperation.

<p><b>European Research Council (ERC)</b> <i>Frontier research by the best individual teams</i></p>	13,095m
<p><b>Future and Emerging Technologies</b> <i>Collaborative research to open new fields of innovation</i></p>	2,696m
<p><b>Marie Skłodowska-Curie actions (MSCA)</b> <i>Opportunities for training and career development</i></p>	6,162m
<p><b>Research infrastructures (including e-infrastructure)</b> <i>Ensuring access to world-class facilities</i></p>	2,488m

Pillar 2: Industrial Leadership: developing industrial leadership in Europe by boosting job creation, supporting innovation, increasing market uptake, stimulating private investment, and increasing the participation of innovative SMEs.

This pillar aims to speed up development of the technologies and innovations that will underpin tomorrow's businesses and help innovative European SMEs to grow into world-leading companies.

It consists of three specific objectives:

"Leadership in enabling and industrial technologies" will provide dedicated support for research, development and demonstration and, where appropriate, for standardisation and certification, on information and communications technology (ICT), nanotechnology, advanced materials, biotechnology, advanced manufacturing and processing and space. Emphasis will be placed on interactions and convergence across and between the different technologies and their relations to societal challenges. User needs will be taken into account in all these fields.

"Access to risk finance" will aim to overcome deficits in the availability of debt and equity finance for R&D and innovation-driven companies and projects at all stages of development. Together with the

equity instrument of the Programme for the Competitiveness of Enterprises and small and medium-sized enterprises (COSME) (2014-2020) it will support the development of Union-level venture capital.

"Innovation in SMEs" will provide SME-tailored support to stimulate all forms of innovation in SMEs, targeting those with the potential to grow and internationalise across the single market and beyond.

<p><b>Leadership in enabling and industrial technologies (LEITs)</b></p> <p><i>(ICT, nanotechnologies, materials, biotechnology, manufacturing, space)</i></p>	13,557m
<p><b>Access to risk finance</b></p> <p><i>Leveraging private finance and venture capital for research and innovation</i></p>	2,842m
<p><b>Innovation in SMEs</b></p> <p><i>Fostering all forms of innovation in all types of SMEs</i></p>	616m*

\*complemented by expected 20% of budget of societal challenges + LEITs and 'Access to risk finance' with strong SME focus

Pillar 3: Societal Challenges: the largest area of H2020 with nearly 40% of the overall budget is aimed at addressing societal challenges at a European and global scale through research in areas such as health, food security, clean and efficient energy, green transport and protection against climate change.

A challenge-based approach will bring together resources and knowledge across different fields, technologies and disciplines, including social sciences and the humanities. This will cover activities from research to market with a new focus on innovation-related activities, such as piloting, demonstration, test-beds, and support for public procurement and market uptake. It will include establishing links with the activities of the European Innovation Partnerships ([EIP](#)).

Funding will focus on the following challenges:

- Health, demographic change and wellbeing;
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bio-economy;
- Secure, clean and efficient energy;
- Smart, green and integrated transport;
- Climate action, environment, resource efficiency and raw materials;

Europe in a changing world - inclusive, innovative and reflective societies;  
Secure societies - protecting freedom and security of Europe and its citizens.

<b>Health, demographic change and wellbeing</b>	7,472m
<b>Food security, sustainable agriculture, marine and maritime research &amp; the Bio-economy</b>	3,581m
<b>Secure, clean and efficient energy *</b>	5,931m
<b>Smart, green and integrated transport</b>	6,339m
<b>Climate action, resource efficiency and raw materials</b>	3.081m
<b>Inclusive and reflective societies</b>	1.309m
<b>Secure societies</b>	1,695m
<b>Science with and for society</b>	462m
<b>Spreading excellence and widening participation</b>	816m

\* Additional funding for nuclear safety and security from the Euratom Treaty activities (2014#2018)

### 3. Rules of Participation

Compared to FP7, the participation rules are much easier. The main changes are:

- There is the possibility of closer to market activities
- Stronger focus on innovation and on SME participation
- Time to grant should be shorter; 8 months is the target with successful candidates informed within 5 months.
- Funding rules are simplified to cover 100% of direct costs in the majority of cases (70% for innovation / close-to-market actions)

The instruments to be used are:

- Research & Innovation for the large majority of research projects
- Co-ordination and Support; networking activities
- Innovation for close-to-market actions (70% funding will apply)
- SME dedicated calls

**Participation:** The EU28 plus associated countries are all eligible for funding. A number of countries have stated their intention to become associated to Horizon 2020 by the time the first grant agreements are being signed; Albania, Bosnia and Herzegovina, Faroe Islands, former Yugoslav Republic of Macedonia, Iceland, Israel, Moldova, Montenegro, Norway, Serbia, Switzerland and Turkey.

For collaborative instruments (the majority of calls) require independent legal entities from at least 3 EU member states. Exceptions are made for calls from the ERC, under MSCA, Co-ordination and support and the SME actions.

**Funding Rules:** In the majority of cases, reimbursement will be made on the basis of actual costs.

- Direct costs paid at 100% for research activities or 70% for innovation actions
- Indirect costs paid at a flat rate of 25% of direct costs.

Auditing will be simplified and for persons working 100% on H2020 projects, no time-sheets will be required.

## 4. 2014 & 2015 calls with relevance for EO Services

The analysis of the potential for the inclusion of R&D linked to EO services is based around the various “challenges” of H2020. The general structure is shown:

### EO Services

Within this section, you will find an analysis of each of the programme lines from a perspective of where EO services could find a place. Note that this is an analysis only and that it should not be taken as an assurance that the relevant programme managers are in agreement except if it is explicitly stated that this is the case.



The primary areas of H2020 which are applicable for companies or organisations dealing in EO services are explained below. These are taken from an analysis of the calls published for 2014 and 2015. Future calls may have present further opportunities.

### Industrial Leadership: Space:

This is the call where EO is specifically included as a topic (as opposed to being mentioned). Beyond those topics listed, there may be some opportunities linked to navigation/location based services under the Galileo/GNSS part of the call. The most relevant lines are:

EO-1-2014: New ideas for Earth-relevant space applications

EO-2-2014: Climate Change relevant space-based Data reprocessing and calibration

EO-3-2014: Observation capacity mapping in the context of Atmospheric and Climate change monitoring

EO 1–2015: Bringing EO Applications to the market



EO-2-2015: Stimulating wider research use of Copernicus Sentinel Data

EO-3-2015: Technology developments for competitive imaging from space

### **Industrial Leadership – ICT:**

The focus of this area is very wide but some topics align with the goals of big data and hence could be used by organisations wishing to develop tools for the distribution and/or processing of EO data. This could include complementary technologies such as cloud, crowd-sourcing, etc. Specific examples are:

ICT 7–2014: Advanced Cloud Infrastructures and Services

ICT 8–2015: Boosting public sector productivity and innovation through cloud computing services

### **Societal Challenge: Climate Change**

Under this action, a number of topics are well-suited to inclusion of EO:

SC5-16-2014: Making Earth Observation and Monitoring Data usable for ecosystem modelling and services

SC5-18-2014/2015: Coordinating and supporting Earth Observation research and innovation in the EU, and in the North African, Middle East, and Balkan region

WATER-1-2014/2015: Bridging the gap: from innovative water solutions to market replication

SC5-15-2015: Strengthening the European Research Area in the domain of Earth Observation

### **Societal Challenge: Secure Societies – protecting freedom and security of Europe and its citizens**

A number of the calls are linked with mitigating the impacts of natural and man-induced disasters. Within these, EO may find a role to play:

DRS-1-2015: Crisis management topic 1: Potential of current and new measures and technologies to respond to extreme weather and climate events.

DRS-3-2015: Crisis management topic 3: Demonstration activity on large scale disasters and crisis management and resilience of EU external assets against major identified threats or causes of crisis.

In addition, there are a number of specific research areas where EO players could find a place. A more extended analysis is available to members of EARSC.