

FP7 Projects

Overview of all partners and financial contributions
in projects where CERN is a partner or coordinator



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Executive Summary

This report intends to present some of the statistics of the FP7 EU Projects CERN has been involved in. The key statistics are:

- CERN has received funding in 87 projects and coordinated 36 of these.
- The total budget for all FP7 projects CERN has taking part in is 692 million euro, 404 million from the European Commission and 288 million matched by the partners.
- From all of these projects CERN received in total 111 million euro and provided matching funds of 93 million euro.
- Partners located in CERN's member and associate states received 281 million euro from the European Commission in projects where CERN is a partner.
- In total CERN has collaborated with 526 partners through the projects, of these 73 partners are SMEs and 53 are larger companies. The number of partners and funding is shown on the next page.
- Slightly more than 550 researchers will be trained through the FP7 Marie Curie projects that CERN is taking part in and more than half of those hosted at CERN.

Acknowledgements

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Distribution of funding from the Commission in million euro and number of partners in all FP7 projects where CERN is involved

Country	Funding from the EC	Partners
Albania	0.1	1
Armenia	0.1	1
Australia	-	2
Austria	5.3	17
Belarus	0.3	2
Belgium	4.7	15
Boznia and Herzegovina	0.2	1
Brazil	0.1	1
Bulgaria	1.1	6
Croatia	0.6	3
Cyprus	0.8	1
Czech Republic	3.4	10
Denmark	1.6	6
Estonia	0.9	3
Finland	8.6	21
France	31.6	37
Georgia	0.2	2
Germany	53.9	68
Greece	12.3	23
Hungary	2.2	9
Iceland	0.0	1
Indonesia	-	1
Ireland	1.4	4
Israel	1.0	4
Italy	41.2	45
Japan	0.0	1
Korea	-	2
Latvia	0.7	3
Lithuania	0.9	4
Macedonia	0.2	1
Malaysia	0.2	1
Malta	0.1	2
Moldova	0.3	1
Montenegro	0.1	1
Netherlands	11.0	23
Norway	1.9	5
Philippines	0.3	2
Poland	5.8	13
Portugal	2.5	7
Romania	2.2	10
Russia	1.7	7
Serbia	0.7	2
Singapore	-	1
Slovakia	0.9	3
Slovenia	1.5	5
Spain	16.2	34
Sweden	5.6	9
Switzerland	11.7	16
Taiwan	-	1
Thailand	-	1
Turkey	1.4	4
Ukraine	0.6	6
United Kingdom	37.1	47
USA	0.9	7

A more detailed breakdown of the numbers can be found in appendix 1 and 2.

Introduction

The European Organization for Nuclear Research (CERN) is an international organization operating the world's largest high energy physics laboratory. As an international organization funded mostly by its European member states¹, CERN collaborates extensively with other institutes. One of the frameworks CERN is collaborating under is the FP7 programme.

FP7 stands for the *7th Framework Programme for Research and Technological Development*. FP7 was the main framework for funding research in the European Union, from 2007 to 2013. With several programmes and sub-programmes and over 50 billion euros available, it has been the main funding source for research, development and innovation in the European Union. The subsequent programme called Horizon 2020 started in 2014.

CERN has been involved in many FP7 projects the last years, spanning from R&D for accelerator upgrades for the LHC, through particle therapy for cancer treatment, to developing research grids and smart cities. This document has been created to give a quantitative look at the total financial contribution from the Commission and which actors CERN has collaborated with through FP7 projects.

Methodology

The data was collected from the grant preparation forms for all FP7 projects CERN has been involved in. Collected data included: project name, programme, sub-programme, financial instrument, information about all the participants, including if they are a public entity, private company or a small or medium enterprise (SME). In addition all the information on financial contribution per institute from the European Commission and the matching funds from the institute itself were collected.

The data is taken from the grant preparation forms or grant agreements and even though it has been sought to use the latest most updated versions, changes in the distribution might have been done at a later stage. The reason for using the grant preparation forms as the source of data is that they are available for all projects in the same format. For two of the projects, however, details on the financial distribution were not available, and for these two projects the financial distribution was calculated based on the number of researchers per institute as both were initial training networks. This might give rise to some small errors, however, as they were small projects the impact is limited. Taking these error sources into account, it is important to state that the numbers are meant to be used as a metric for collaboration, rather than providing a detailed financial statement.

The data was analyzed using Excel because of the simplicity, albeit, with the final size of the dataset, creating a database might have proven to be a better solution. The final size of the dataset contained 1162 entries, one entry per partner per project. The data is used to present an easily accessible and visual way of getting an overview of CERN's involvement in FP7 projects, and

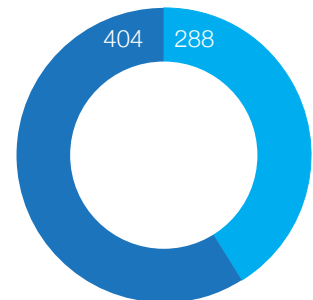
¹ The CERN member states are; Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, Netherlands, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland and United Kingdom. Candidate for Accession; Romania Associate Member State in the pre-stage to Membership; Republic of Serbia.

no advanced calculations or statistical methods have been used. In addition a separate file was created for collecting the information about the number of Marie Curie fellows trained. Some of the aggregated datasets are available in the appendices for further reviewing.

CERN and FP7

CERN has received funding in 87 projects and coordinated 36 of these. Most of the projects had multiple partners, except 10, which had CERN as the sole partner and beneficiary; these 10 projects were mostly mono-site initial training networks and ERC grants. However, even for the projects where CERN is the only beneficiary, this does not exclude that there has been any collaboration with other institutes, and in many of the projects there have been knowledge exchanges through as an example secondments. This will not be apparent in the analysis as it will only look at the data from the grant preparation forms, and should thus be taken into account when looking at the results. In addition to the 87 projects CERN has hosted 15 individual fellows financed by the by FP7 Marie Curie actions.

Total budget for all FP7 projects where CERN is a partner: 692 million euro



- Funding from the European Commission
- Matching funds from the partners

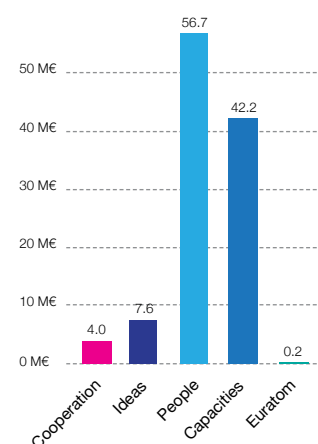
Financial Data

For all the projects where CERN participated the total budget was 692 million euro, where 404 million are from the FP7 funding and the remaining 288 million are matching funds provided by the different partners in the projects. From all of these projects CERN received 111 million euro and provided matching funds of 93 million. For the projects coordinated by CERN the total budget was 341 million euro and for the projects where CERN was a partner the total budget was 351 millions, with the contributions from the European Commission being 173 million and 222 million, respectively.

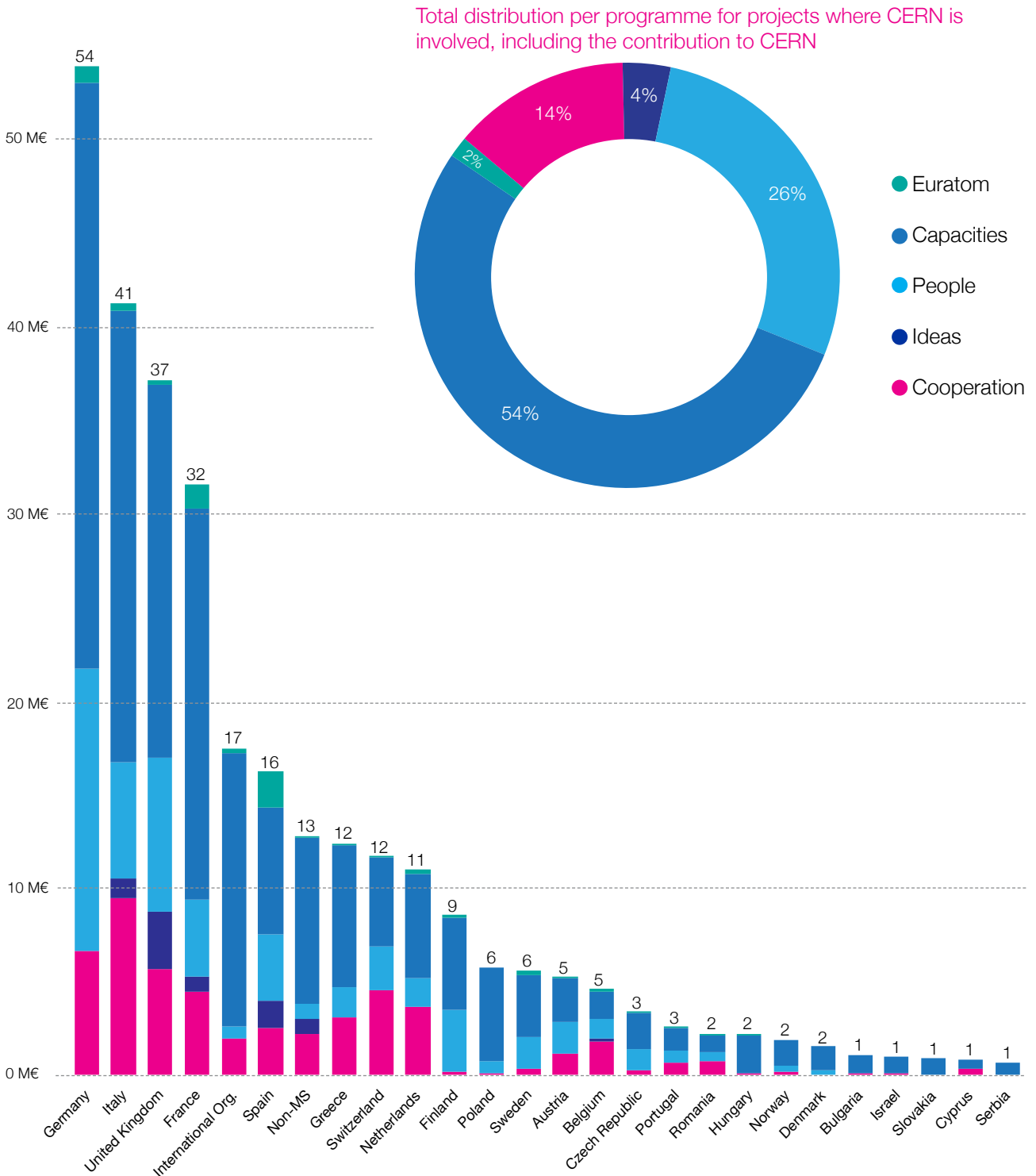
The graph overleaf shows how the funding from the European Commission has been distributed to CERN's member states and a total for all non-member states and for international organizations. This graph includes all projects that CERN has coordinated or been a partner in. The funds are grouped per programme, showing which programme CERN has been most active in. The distribution of the 111 million CERN received is shown in the graph to the right, also grouped per programme.

The two largest programmes are by far Capacities and People, together covering more than three quarters of the total funding. The most EC funding went to the projects in the Capacities programme, which is aimed at enhancing the research and innovation capacities in Europe. CERN is most involved in the sub-programmes research infrastructures with 14 projects and e-infrastructures with 20 projects. The second programme called People includes the Marie Curie actions and is aimed at increasing capabilities in people and providing them with training, where CERN participated in 28 projects and in addition hosted several individual fellows financed by the same programme. Distributed between the partners these projects had the second largest budget, however, it was for the projects in the People programme that CERN received the most funding. A significant amount of fellows at CERN has been funded through this programme, especially through the COFUND actions, partially funding 185 fellows.

Distribution of the FP7 funding to CERN



Distribution of funding from the European Commission from projects in which CERN is involved



Overview on how the funds from the European Commission are distributed to countries involved in FP7 projects with CERN. The funding is classified after which programme it is handed out under, and the donut graph is showing the distribution between the different programmes. Non MS stands for all the countries that are not member states of CERN. The data is available in appendix 2.

For the three other programmes; Cooperation, Ideas and Euratom, CERN is less involved, and together this programmes accounts for only 20% of the total funding received from the Commission, and 21 of the projects CERN has coordinated or taken part in. Cooperation aims at stimulating trans-national cooperation between universities, industry, research centers and public authorities. Ideas is for investigator driven “frontier-research”, and thus the projects are focused on smaller groups and projects. The Euratom programme is dedicated to nuclear research and training.

It is interesting to notice that 96 % of all the funding from the European Commission for projects where CERN is involved went to national and international organizations, universities and companies located in CERN’s member and associate member states. This correlates well with the fact that many of the countries that are taking part in FP7 are also CERN member states. It shows that the EU framework programmes are a good instrument for fostering collaboration between CERN and industry and academia in the European countries.

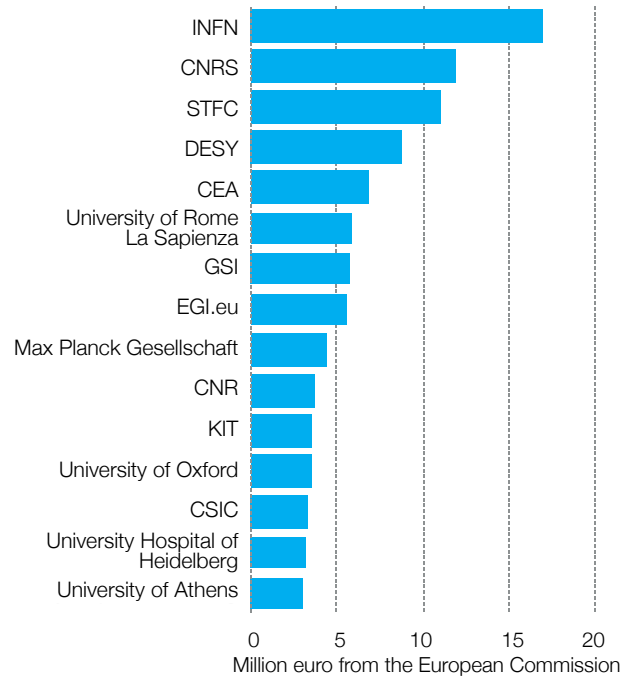
Most Active Partners

The figures to the right shows the partners that CERN collaborates the most with in regards to funding received from the Commission, and the number of projects they have been involved in together with CERN. For the five largest institutes, both in terms of projects and financing, all of them are governmental institutes involved in basic research. This shows that many of the organizations that collaborate the most with CERN are also the ones which operate in the same field on a national level.

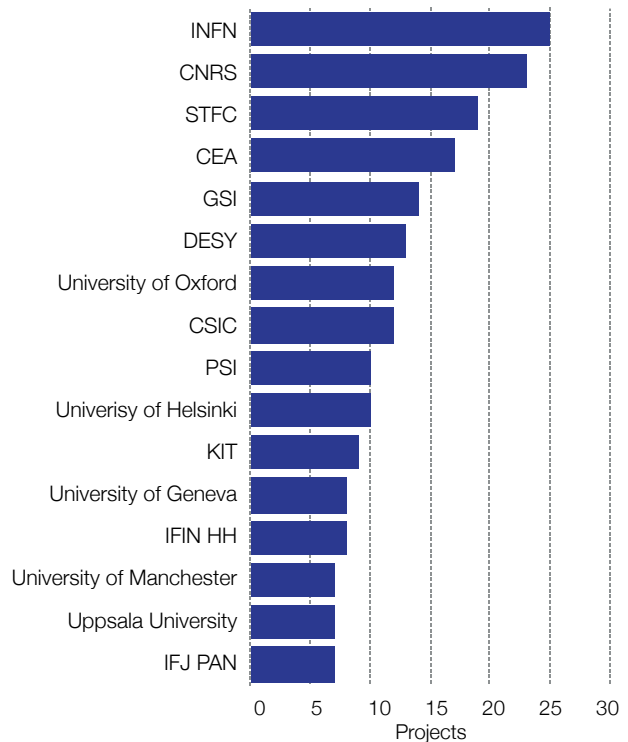
Going down the list, more universities appear, and for the ranking according to funding, they are often high up because they coordinate a project; this is especially true for the University of Rome La Sapienza.

On the next page the most active institutes in terms of funding received from the European Commission are presented per country for the 6 most active countries in terms of collaborations with CERN. It is interesting to notice that some countries have many different institutes with extensive collaborations with CERN, and others have it focused more in very large bodies, such as

Most active partners by funding



Most active partners by projects



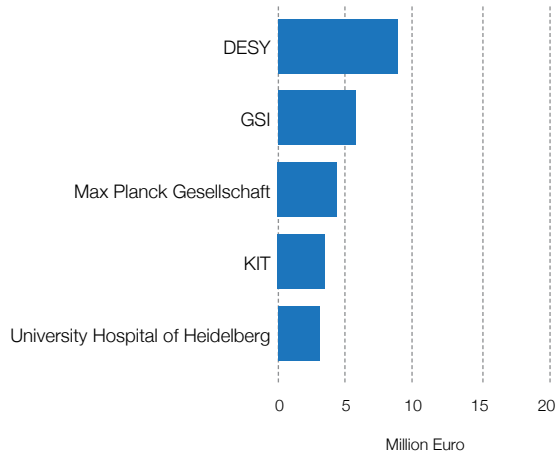
The top graph show the largest institutes ranked by the amount of funding they have received from the European Commission. The one below show the ranking of institutes by the number of projects they have participated in.

Top 5 for the most active countries

The graphs below shows the five institutes that received the most funding in projects where CERN was involved from the six most active countries in terms of funding. The overview of the total amount of funding and participants for all counties are found in appendix 1 and 2.

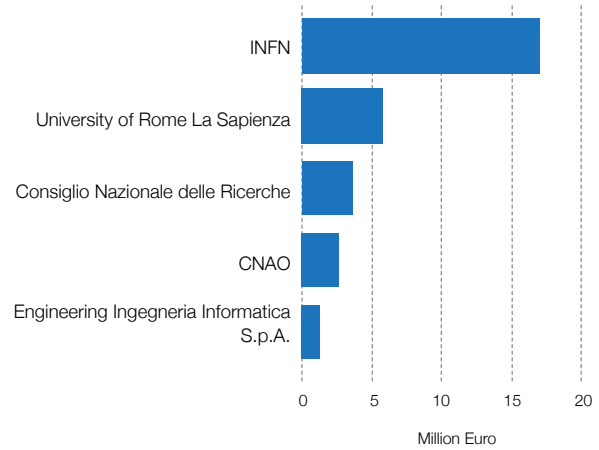
Germany

Total EU funding: 53.9 million euro



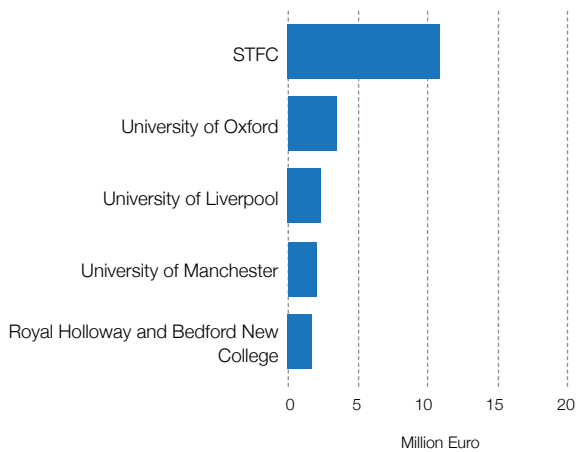
Italy

Total EU funding: 41.2 million euro



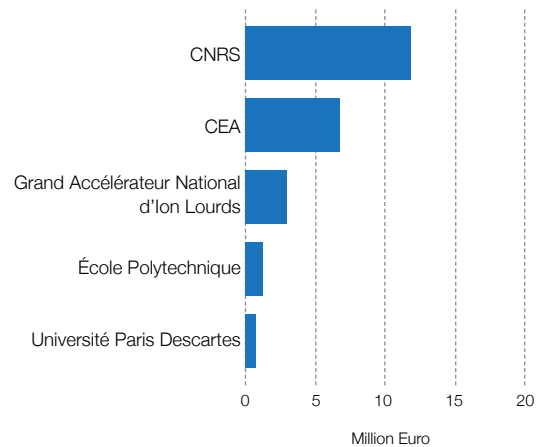
United Kingdom

Total EU funding: 37.1 million euro



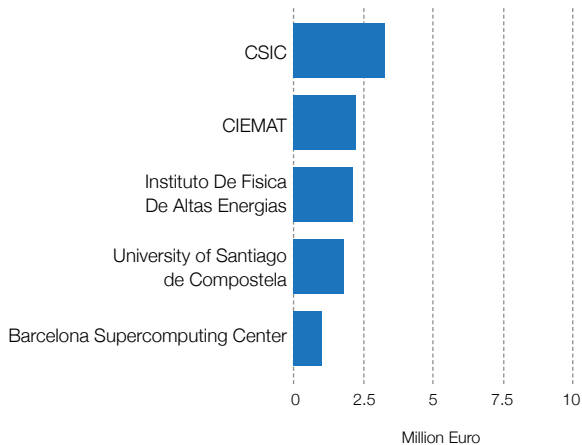
France

Total EU funding: 31.6 million euro



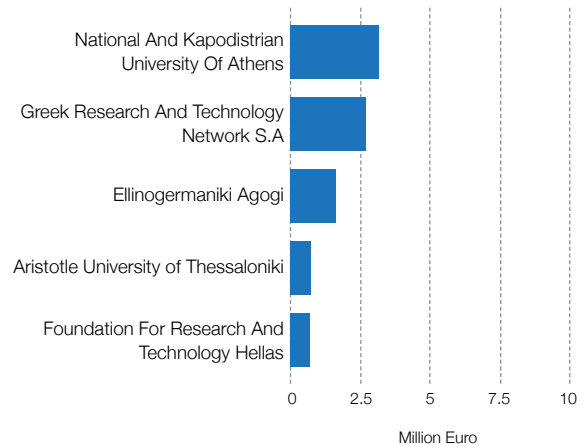
Spain

Total EU funding: 16.2 million euro



Greece

Total EU funding: 12.4 million euro



STFC in the UK and INFN in Italy.

Collaboration

There is a total of 526 unique partners in the FP7 projects that CERN takes part in. Several of these partners participate in multiple projects and on average each partner participates in slightly less than two projects. Of the partners, 73 are SMEs and 53 are larger enterprises, the remaining 400 consist of governmental agencies, universities, non-governmental organizations (NGOs) and other international organizations (IGOs).

Even though companies are well represented with nearly 24% of all participants, in the projects where CERN is a partner or coordinator, they only get 7% of the total funding from the projects. Some of the reason for this is that as opposed to universities and governmental agencies, most companies and especially SMEs only participate in one project and they often take a smaller role, at least in financial terms. For SMEs this might be because they do not have the capacity to work in multiple projects and in addition that they chose to focus only on projects which are directly relevant for their current business.

When looking at the involvement per country it is also interesting to look at the total number of partner-project combinations (counting the partner n times if it participates in n projects). This will give a better overview of the amount of collaboration between CERN and the given country as it better reflects that certain countries have institutes that are involved in up to 25 projects (see figure on page 6). The number of partner-project combinations for all the countries if CERN is excluded is 1068. Of these, 950 or 89% are located in member or associate member states of CERN. On the next page there is a “map” visualizing these project-partner combinations per country.

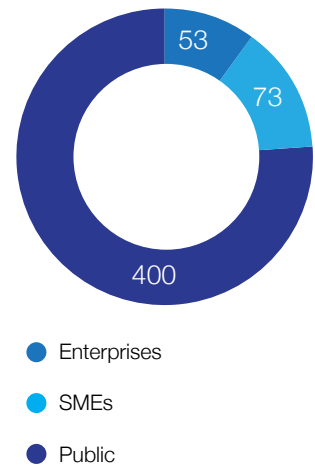
Training of Researchers

Of the FP7 programmes, People is the one where CERN received the most funding from the Commission. Through the People programme CERN has taken part in 28 Marie Curie projects and has hosted 15 individual fellows; in addition CERN has been involved in two researchers night projects.

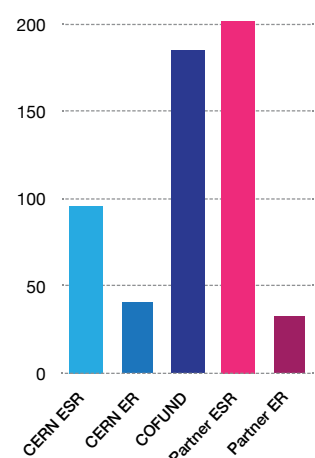
The budget received through different Marie Curie actions, provided funding for both Early Stage Researchers (ESR) and Experience Researchers (ER). The most common funding instruments CERN has been involved in are the Initial Training Network and COFUND. COFUND differs slightly in that it is not a fully funded fellowship, but as the name hints, an additional financial support to existing programmes.

More than 550 researchers have been trained through the FP7 Marie Curie actions CERN has been involved in. Slightly more than half of them have been hosted at CERN and the rest in one of the partner institutes, distributed as shown in the figure to the right. At CERN the bulk of fellows were funded through the 4 COFUND grants CERN received; for the other fellows it was mainly through Initial Training Networks.

The different sectors that CERN collaborates with through EU projects.

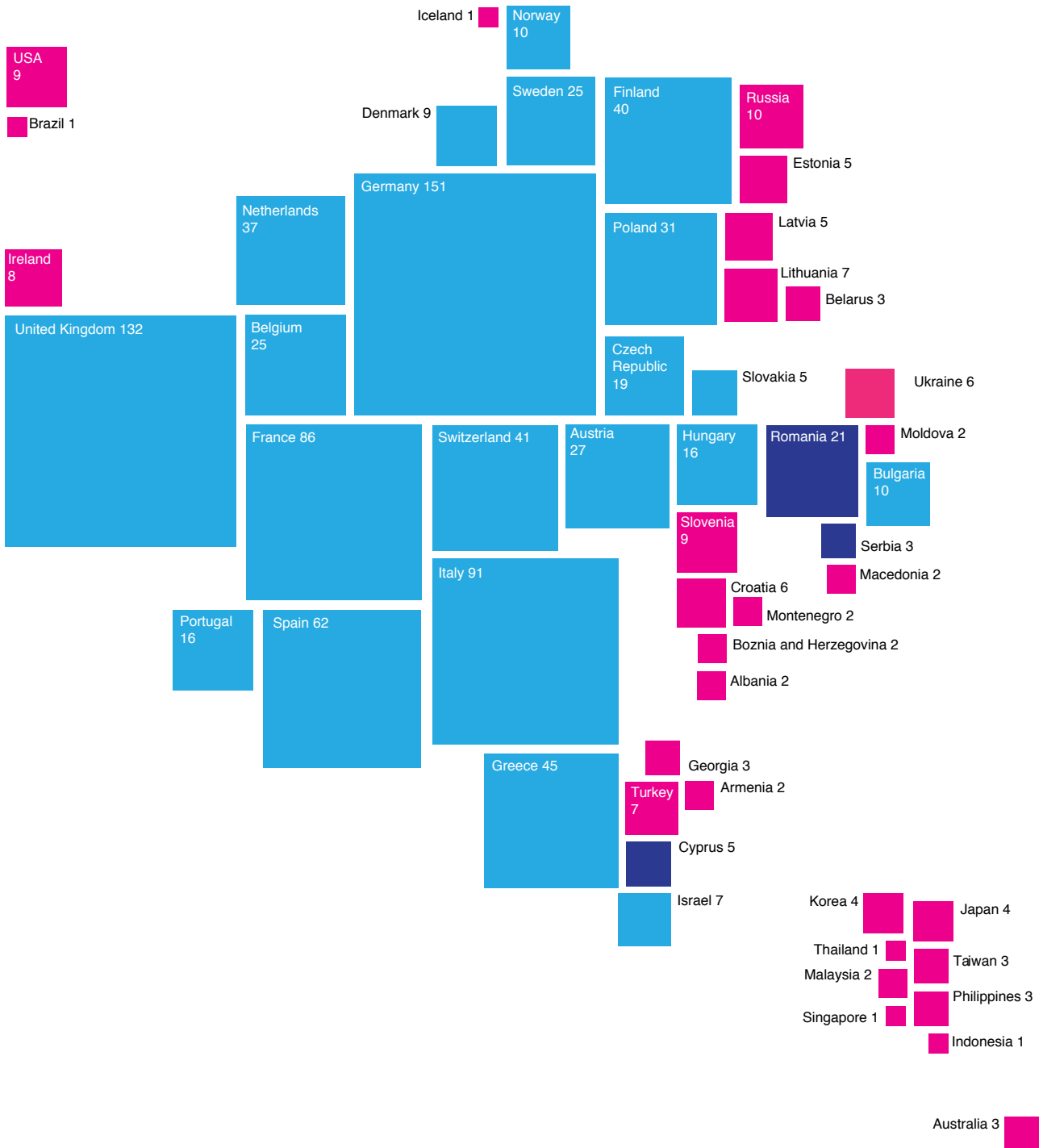


Overview of researchers trained through fellowships at CERN and partner institutes in projects CERN is a part of



Collaboration “Map”

The figure shows a “map” of all countries with one or more partners in FP7 projects that CERN coordinates or is a partner in. The relative size of the square represents the number of project-partner combinations in the country. The light blue squares are member states and the dark blue associate and candidate members, the pink squares represents all other countries that CERN has collaborated with through FP7. For details on how many unique partners and projects there are per country, see appendix 2.



The largest projects

This section will present the five largest projects with some details, followed by a list of fifteen that CERN has been involved in. They are listed by total budget of the project.

- 1 EGI-InSPIRE**
Coordinated by European Grid Infrastructure - EGI.eu
Total budget: 72.6 million euro EU Funding: 25.0 million euro
Public partners: 44 Enterprise partners: 7

The project aims to establish a sustainable European Grid Infrastructure taking over the work started in EGEE-III.

- 2 EGEE-III**
Coordinated by CERN
Total budget: 46.9 million euro EU Funding: 32.0 million euro
Public partners: 35 Enterprise partners: 7

Directed towards optimizing and expanding Europe's largest grid infrastructure the EGEE, deliver support for user communities, and adding more computational resources.

- 3 EuCARD**
Coordinated by CERN
Total budget : 31.2 million euro EU Funding: 10.0 million euro
Public partners: 35 Enterprise partners: 2

The project's goal is to upgrade the large European research accelerators, offering researchers the best facilities. A strong emphasis is put on R&D on new technologies and concepts.

- 4 AIDA**
Coordinated by CERN
Total budget: 26.0 million euro EU Funding: 8.0 million euro
Public partners: 37

The project is working on upgrades, improvements, and integration of research infrastructures in Europe and developing advanced detector technologies.

- 5 COFUND-III**
Coordinated by CERN
Total budget: 25.0 million euro EU Funding: 10.0 million euro
Public partners: 1

This is a Marie Curie Actions programme where senior fellowships at CERN are co-financed by CERN and FP7 funding. It offers longer contracts than the regular fellowships and possibilities to spend up to one year at another institution.

The following projects

6	EMI	23.7 million euro
7	EuCARD-2	23.4 million euro
8	HiLumi LHC	21.0 million euro
9	CityMobile2	19.3 million euro
10	EUDAT	16.3 million euro
11	CRISP	15.9 million euro
12	SLHC-PP	15.6 million euro
13	EURONU	13.5 million euro
14	Go-Lab	13.2 million euro
15	COFUND-CERN-2010	12.5 million euro
16	COFUND-CERN-2009	12.5 million euro
17	LAGUNA-LBNO	11.1 million euro
18	ENSAR	11.0 million euro
19	EndoTOFPET-US	10.4 million euro
20	ILC-HiGRADE	9.8 million euro

Conclusion

Through FP7 projects, CERN has taken part in 87 projects and in addition 15 individual fellows are financed by the by FP7 Marie Curie actions. This is showing that the framework programme is a good instrument for fostering collaboration between CERN, industry and academia. Even though some of the projects are related to high-energy physics, most of the projects CERN has been involved in are related to more general problems or ideas. The FP7 projects thus allow CERN to share its unique expertise in many different fields it would typically not interact with.

The projects have connected CERN to a vast network of different actors. In addition to other public bodies, CERN has worked with and shared its knowledge and expertise with SMEs and other enterprises. In FP7, 24% of all the unique partners in projects where CERN was involved were enterprises. It is also interesting to note that the majority of these enterprises were SMEs.

Training through the People programme is a very important part of CERN's involvement in FP7, and some of the larger projects are training projects with an emphasis on career development of researchers. Especially through the Initial Training Networks and COFUND, CERN is transferring its knowledge to early stage and experienced researchers. In all more than 550 researcher has received grants through projects CERN has been involved in and more than half of those have been hosted at CERN.

Appendix 1

Funding from the European Commission per Country and Programme

Overview of all the funding from the European Commission to the different countries grouped by programme. All values in million euro. Note that some countries have values of 0.0, this is because they have received less than fifty thousand euro.

Member States	COOPERATION	IDEAS	PEOPLE	CAPACITIES	EURATOM	Total	Total Matching
Austria	1.2	-	1.7	2.3	0.1	5.3	1.7
Belgium	1.8	0.2	1.1	1.4	0.2	4.7	2.4
Bulgaria	0.1	-	-	1.0	-	1.1	0.8
Cyprus***	0.3	-	-	0.5	-	0.8	0.5
Czech Republic	0.3	-	1.2	1.9	0.1	3.4	2.6
Denmark	-	-	0.3	1.3	-	1.6	1.7
Finland	0.2	-	3.3	4.9	0.2	8.6	3.7
France	4.5	0.8	4.1	20.9	1.3	31.6	29.1
Germany	6.7	-	15.1	31.3	0.9	53.9	27.4
Greece	3.1	-	1.6	7.6	0.1	12.4	6.1
Hungary	0.1	-	-	2.0	0.0	2.2	1.2
Israel	0.1	-	-	0.8	-	1.0	1.1
Italy	9.5	1.0	6.3	24.1	0.4	41.2	28.3
Netherlands	3.7	-	1.6	5.6	0.2	11.0	6.7
Norway	0.2	-	0.3	1.4	-	1.9	2.1
Poland	0.1	-	0.7	5.0	-	5.8	5.1
Portugal	0.7	-	0.7	1.2	0.0	2.5	1.3
Romania*	0.8	-	0.5	0.9	0.1	2.2	1.1
Serbia**	-	-	-	0.7	-	0.7	0.8
Slovakia	-	-	-	0.9	-	0.9	1.4
Spain	2.6	1.4	3.6	6.8	1.9	16.2	8.6
Sweden	0.4	-	1.7	3.4	0.2	5.6	3.4
Switzerland	4.6	-	2.4	4.7	0.1	11.7	8.4
United Kingdom	5.7	3.0	8.3	19.9	0.2	37.1	26.8
Total Member States	46.6	6.4	54.1	150.4	5.9	263.3	172.3
Non-Member States							
Albania	-	-	-	0.1	-	0.1	0.1
Armenia	-	-	-	0.1	-	0.1	0.1
Australia	-	-	-	-	-	-	0.4
Belarus	-	-	-	0.3	-	0.3	0.1
Boznia and Herzegovina	-	-	-	0.2	-	0.2	0.2
Brazil	-	-	-	0.1	-	0.1	0.0
Croatia	0.0	-	-	0.5	-	0.6	0.6
Estonia	0.3	-	-	0.6	-	0.9	0.1
Georgia	0.1	-	-	0.1	-	0.2	0.1
Iceland	-	-	-	0.0	-	0.0	0.0
Indonesia	-	-	-	-	-	-	0.0
Ireland	0.1	-	-	1.3	-	1.4	1.7
Japan	-	-	-	0.0	-	0.0	3.5
Korea	-	-	-	-	-	-	0.5
Latvia	-	-	-	0.7	-	0.7	0.4
Lithuania	-	-	-	0.9	-	0.9	0.5
Macedonia	-	-	-	0.2	-	0.2	0.2
Malaysia	-	-	-	0.2	-	0.2	0.0
Malta	-	-	-	0.1	-	0.1	0.1
Moldova	-	-	-	0.3	-	0.3	0.3
Montenegro	-	-	-	0.1	-	0.1	0.1
Philippines	-	-	-	0.3	-	0.3	0.3
Russia	0.5	-	-	1.2	-	1.7	0.8
Singapore	-	-	-	-	-	-	0.2
Slovenia	-	-	0.8	0.6	0.1	1.5	0.8
Taiwan	-	-	-	-	-	-	1.2
Thailand	-	-	-	-	-	-	-
Turkey	0.5	-	-	0.9	-	1.4	1.3
Ukraine	0.6	-	-	-	-	0.6	0.2
USA	0.1	0.8	-	-	-	0.9	0.8
Total Non-Member States	2.4	0.8	0.8	8.9	0.1	12.9	13.9
International Organizations	2.0	-	0.7	14.6	0.2	17.4	7.1
CERN	4.0	7.6	56.7	42.2	0.2	110.8	93.4
Total	54.7	14.8	112.3	216.0	6.4	404.2	287.6

* Candidate for Accession

** Associate Member State in the Pre-Stage to Membership

*** Associate Member State

Appendix 2

Collaborating Partners

Overview of all project-partner combinations, number of unique partners and projects each country is involved in where CERN is a coordinator or partner. The project-partner combinations is the total one gets by counting each partner n times if it participates in n projects.

Member States	Project-Partner Combinations	Partners	Projects
Austria	27	17	23
Belgium	25	15	17
Bulgaria	10	6	10
Cyprus***	5	1	5
Czech Republic	19	10	17
Denmark	9	6	8
Finland	40	21	21
France	86	37	44
Germany	151	68	53
Greece	45	23	25
Hungary	16	9	15
Israel	7	4	6
Italy	91	45	46
Netherlands	37	23	27
Norway	10	5	10
Poland	31	13	20
Portugal	16	7	15
Romania*	21	10	15
Serbia**	3	2	3
Slovakia	5	3	5
Spain	62	34	33
Sweden	22	9	19
Switzerland	40	16	26
United Kingdom	132	47	55
Total Member States	910	431	
Non-Member States			
Albania	2	1	2
Armenia	2	1	2
Australia	3	2	3
Belarus	3	2	2
Boznia and Herzegovina	2	1	2
Brazil	1	1	1
Croatia	6	3	6
Estonia	5	3	4
Georgia	3	2	3
Iceland	1	1	1
Indonesia	1	1	1
Ireland	8	4	8
Japan	4	1	4
Korea	4	2	3
Latvia	5	3	4
Lithuania	7	4	5
Macedonia	2	1	2
Malaysia	2	1	2
Malta	4	2	4
Moldova	2	1	2
Montenegro	2	1	2
Philippines	3	2	3
Russia	10	7	9
Singapore	1	1	1
Slovenia	9	5	8
Taiwan	3	1	3
Thailand	1	1	1
Turkey	6	4	6
Ukraine	6	6	1
USA	9	7	7
Total Non-Member States	117	72	
International Organizations	41	23	24
Total	1068	526	

* Candidate for Accession

** Associate Member State in the Pre-Stage to Membership

*** Associate Member State



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