ICT in Horizon 2020

To bring the benefits of progress in Information and Communication Technologies to European citizens and businesses.

Information guide

for EU and Balkan research organisations and industries

to prepare for Horizon 2020
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1. Introduction

Horizon 2020 is the financial instrument implementing the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness. Planned to run from 2014 to 2020 with an €70 billion preliminary budget, the EU’s new Programme for research and innovation is part of the drive to create the conditions for new growth and jobs in Europe.

The overall aim of EU research and innovation in information and communication technologies (ICT) under Horizon 2020 is to bring the benefits of progress in these technologies to European citizens and businesses. ICT is essential to address Europe's societal challenges. It brings unique responses e.g. to the growing needs for sustainable healthcare and ageing under good conditions, for better security and privacy, for a lower carbon economy and for intelligent transport.

This EU investment will support the ICT research and innovation that can best deliver new business breakthroughs, often on the basis of emerging technologies. In particular, ICT in Horizon 2020 will support the development of ICT in Science, ICT in industrial leadership and ICT in societal challenges.

EU investments in ICT represent an increase of about 46% under Horizon 2020 compared to the current EU research programme (FP7). This is in line with the Commission's proposed increase in funding across all themes.

In particular, Horizon 2020 will support the development of:

- A new generation of components and systems including Micro- / nano-electronics and photonics technologies, components and embedded systems engineering.
- Next generation computing, Advanced computing systems and technologies.
- Infrastructures, technologies and services for the future Internet,
- Content technologies and information management, including ICT for digital content and creativity.
- Advanced interfaces and robots and Robotics and smart spaces

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1 The European Parliament has recently closed the budget discussions and has fixed the total budget for H2020 as of 70B€. However, as no official communication on the budget distribution has been done at this stage, the numbers indicated in this document (e.g. distribution to single parts of the programme) are based on the initially communicated 80B€ total budget.
2. What we build upon: ICT in FP7

FP7 is the main instrument for scientific and technological cooperation in Europe, running from 2007-2013 with a budget of 50.5 billion €, funding basic and market oriented research, applied development and fellowships.

There are five major building blocks:

1. Cooperation (Budget: 32.4B €)
   - The core of FP7, representing two thirds of the overall budget, it fosters collaborative research across Europe and other partner countries; divided into 10 key thematic areas, of which one is ICT.

2. Ideas (Budget: 7.5B €)
   - Supports « frontier research » on the basis of scientific excellence; projects are implemented by individual teams without obligation of cross-border partnerships; the programme is implemented via the European Research Council (ERC).

3. People (Budget: 4.7B €)
   - Provides support for researcher mobility and career development, both inside the EU and internationally; implemented via a set of Marie Curie actions, providing fellowships and other helping measures.

4. Capacities (Budget: 4.1B €)
   - Strengthens Europe’s research capacities in order to become a knowledge-based economy, by diverse activities such as research infrastructures, regions of Knowledge, Science in Society, etc.

5. Euratom (Budget: 2.7B €)
   - Specific programme for nuclear research and training activities.
2.1. Participation of Balkan ICT researchers in FP7

Balkan researchers of the field of ICT (or more specifically Monitoring and Control) were able to participate in FP7 in the following programme sections:

1. Cooperation
   - Collaborative research projects with EU partners in the ICT thematic area

2. Ideas
   - Participation in a scientific excellence project

3. People
   - Researcher mobility and career development: exchange with EU institutions and researchers
   - Participation in Marie Curie actions, providing fellowships and other helping measures

4. Capacities
   - Participation in activities such as research infrastructures, regions of Knowledge, Science in Society, etc

2.2. ICT challenges in the FP7 Cooperation programme

- **Structure:**
  - yearly Work Programmes (WP) for each thematic area
  - last WP of the FP7 period: WP2013, published on 10 July 2012

- **Work Programme 2013 – ICT: The challenges**

  - Challenge 1: Pervasive and trusted network and service infrastructures
  - Challenge 2: Cognitive systems and robotics
  - Challenge 3: Alternative Paths to Components and Systems
  - Challenge 4: Technologies for Digital Content and Languages
  - Challenge 5: ICT for Health, Ageing Well, Inclusion and Governance
  - Challenge 6: ICT for a low carbon economy
  - Challenge 7: ICT for the Enterprise and Manufacturing
  - Challenge 8: ICT for Creativity and Learning
Horizon 2020 will operate from 2014 to 2020 with the potential for a budget of around €70 billion.

Horizon 2020 objectives are threefold:

- to contribute directly to tackling the major societal challenges identified in Europe 2020 and its flagship initiatives.
- to contribute equally to creating industrial leadership in Europe.
- to increase excellence in the science base, essential for the sustainability and long term prosperity and wellbeing of Europe.

Horizon 2020 sets out plans for a simpler programme which will focus on:

- **Excellent Science** - encompassing European Research Council (ERC), Future and Emerging Technologies (FET), Marie Curie Actions and Research Infrastructures.
- **Competitive Industries** - encompassing leadership in enabling and industrial technologies (ICT, Nanotechnologies, Advanced Materials, Biotechnology, Advanced Manufacturing and Processing, and Space); access to risk finance; and innovation in Small and Medium-Sized Enterprises (SMEs).
- **Better Society** - encompassing Health, demographic change and well-being; Food security, sustainable agriculture marine and maritime research; Bio-economy; Secure, clean and efficient energy; Smart, green and integrated transport; Climate action and resource efficiency including raw materials.

The European Council and the European Parliament are currently discussing the Horizon 2020 proposal. A final decision on the content of Horizon 2020 will probably be made by the end of 2013 and the launch of the first call in respect of Horizon 2020 is expected beginning of 2014\(^2\).

\(^2\) Indeed, the calendar, as the budget already mentioned, is not fixed at this stage (August 2013). As thus, all indicated dates are estimates and have to be understood as such.
3.1. What's new?

- A single programme bringing together three separate programmes / initiatives
- Coupling research to innovation - from research to retail, all forms of innovation
- Focus on societal challenges facing EU society, e.g. health, clean energy and transport
- Simplified access, for all companies, universities, institutes in all EU countries and beyond.
- Strong participation of SMEs

3.2. Preparing the expected launch of Horizon 2020

The final WP for FP7 had an important role to play in preparing for the new approaches proposed to be introduced in Horizon 2020. Activities in 2013 were aimed to already anticipate the adaptation of the strategy towards a more integrated approach between research and innovation, pilot some of the new approaches and prepare for the initiatives to be launched in 2014.

In several areas (e.g Components and systems, Future Internet PPP and Health and Ageing) activities have been reorganised in order to enable further integration and cross-fertilisation between technologies and applications and to favour interdisciplinary R&I activities by bringing together different research constituencies.

In order to prepare for a new major ICT activity on "Next Generation Computing" in H2020, various aspects of computing have been addressed in several Challenges of the 2013 Work Programme. The activities/projects stemming from this will be cross referenced and closely coordinated.

In the areas of robotics and photonics, activities in 2013 were aimed to support the preparation of Public Private Partnerships that are to be launched under H2020.

The area Future and Emerging Technologies (FET) trials a lighter submission process (Xtrack), aiming at a faster evaluation and a simpler project implementation. This pilot bridges to the implementation of the FET Open Scheme in H2020.

Thus, the launch of Horizon 2020 implies a whole new level of cooperation with other research and policy activities in the ICT field.

The expected launch of Horizon 2020 will imply a whole new level of cooperation with other research and policy DGs. In several areas, WP2013 will contribute to reinforcing the cooperation with other DGs in preparation of the next Framework, building in particular on the experience gained in jointly running the recovery package PPPs.
4. ICT in the three key priorities of Horizon 2020

The ICT sector is of high importance for Europe. It represents 4.8% of the EU economy and generates 25% of total business expenditure in research and development (R&D). Investments in ICT account for 50% of all European productivity growth. Thus, the Commission plans to increase the funding for ICT in Horizon 2020. The plans are to increase EU investments in ICT by 46% under Horizon 2020 compared to FP7.

As distinguished from FP7, in Horizon 2020 the ICT sector will be distributed across three priorities (as shown in figure 1):

- Excellent Science
- Industrial Leadership
- Societal Challenges

As things are currently proposed, the ICT budget will be 16 billion euros distributed across the priorities (numbers based on the previously announced total of 80B€, distribution of which is for the moment not updated regarding the 70B€ final budget amount fixed by the European Commission; nevertheless, percentages of distribution can already be estimated). It seems 4 billion euros will be dedicated to the Scientific Excellence priority with most of that going to FET actions. 8 billion euros will go to Industrial Leadership; some of this will be reserved for planned Public-Private Partnerships (PPPs) and 4 billion euros will be distributed to the Societal Challenges nominally for ICT activities.
In particular, ICT in Horizon 2020 will support the development of:

- ICT in Science
- ICT in industrial leadership
- ICT in societal challenges

### 4.1. ICT in Science

'Information and Communication Technologies' is a large field of science which comprises a lot of sub-topics such as electronics, telecommunications and computer science. As thus, ICT represents a wide sector for basic and applied research which can bring innovative results as well as in-depth topics, as on cross-cutting themes. The European Commission’s objective is indeed to bring about world-class results in the science of the future: World class science is the foundation of tomorrow’s technologies, jobs and wellbeing. Europe needs to develop, attract and retain research talent. Researchers need access to the best infrastructures. Thus, important points to foster Future and Emerging Technologies (FET) were elaborated:

- FET Open fostering novel ideas: Collaborative research for embryonic, high risk visionary science and technology
- FET Proactive: Nurturing emerging themes and communities
- FET Flagships: projects on a global scale tackling grand interdisciplinary science and technology challenges
- E-Infrastructures: Integration and access to national research infrastructures; development, deployment and operation of e-Infrastructures

FET is the ICT incubator and pathfinder for new ideas and themes for long-term research in the area of information and communication technologies. Its mission is to promote high risk research, offset by potential breakthrough with high technological or societal impact.

FET-Open is a 'roots-up' approach for exploring promising visionary ideas that can contribute to challenges of long term importance for Europe. The scheme stimulates non-conventional targeted exploratory research cutting across all disciplines and acts as a harbour for exploring and nurturing new research trends and helping them mature in emerging research communities.

FET-Proactive is a 'top-down' approach fostering novel non-conventional approaches and foundational research in selected themes in response to emerging societal and industrial needs. The scheme supports initial developments on long-term research and
technological innovation, and helps related research communities to develop and mature.

**FET Flagships** are ambitious large-scale, science-driven, research initiatives that aim to achieve a visionary goal. The scientific advance should provide a strong and broad basis for future technological innovation and economic exploitation in a variety of areas, as well as novel benefits for society.

![Diagram of ICT in Excellence Science](image)

**Figure 2: ICT in Excellence Science**

### 4.2. ICT in industrial leadership

ICT being a major industrial field in Europe (as already mentioned, it represents 4.8% of the EU economy), calls regarding ICT topics will surely also be published under the “industrial leadership” challenge. Indeed, Europe needs more innovative SMEs and industries to create growth and jobs. Strategic investments in key technologies (e.g. advanced manufacturing, micro-electronics) underpin innovation across existing and emerging sectors. Also, Europe needs to attract more private investment in research and innovation and gaining industrial leadership in main domains, of which ICT, is a major objective.

The following ICT fields and concrete topics have already been planned for Horizon 2020:

- **Components and systems**
  Smart embedded components and systems, micro-nano-bio systems, organic electronics, large area integration, technologies for IoT, smart integrated systems, systems of systems and complex system engineering

- **Next generation computing**
  Processor and system architecture, interconnect and data localization technologies, cloud computing, parallel computing and simulation software
Future Internet
Networks, software and services, cyber security, privacy and trust, wireless communication and all optical networks, immersive interactive multimedia and connected enterprise

Content technologies and information management
Technologies for language, learning, interaction, digital preservation, content access and analytics; advanced data mining, machine learning, statistical analysis and visual computing

Advanced interfaces and robots
Service robotics, cognitive systems, advanced interfaces, smart spaces and sentient machines

Key Enabling Technologies: Micro-/nano-electronics and photonics
Design, advanced processes, pilot lines for fabrication, production technologies and demonstration actions to validate technology developments and innovative business models

Example: Key enabling technologies
The European Commission’s has identified the following technologies as Key Enabling Technologies (KETs):

- Nanotechnology
- Micro- and nanoelectronics
- Industrial biotechnology
- Photonics
- Advanced materials
- Advanced manufacturing technologies.

KETs share some basic characteristics - in particular, they are characterised as “knowledge intensive and associated with high R&D intensity, rapid innovation cycles, high capital expenditure and highly-skilled employment”.

SMEs play an important role in providing inputs and innovative solutions especially to large companies. However, SMEs may lack the organisational and financial capacity to place new products on the global market. Large companies are thus more likely to be better capable of deploying KETs for innovation advance.

4.3. ICT in societal challenges

EU policy objectives cannot be achieved without innovation. Breakthrough solutions come from multi-disciplinary collaborations, including social sciences & humanities. Promising solutions need to be tested, demonstrated and scaled up. This is why the third pillar of H2020 is based on “societal challenges” which need to be tackled with in order to bring benefit to the EU population (and beyond). Indeed, the identified fields of societal challenges all can include calls related to ICT, as new technologic solutions are a main means of resolving societal challenges.

The following list presents Horizon 2020 societal challenges and corresponding ICT topics:
• Health, demographic change & wellbeing:  
  E-health, self management of health, improved diagnostics, improved surveillance, health data collection, active ageing, assisted living;
• Secure, clean and efficient energy:  
  Smart cities; Energy efficient buildings; smart electricity grids; smart metering;
• Smart, green and integrated transport:  
  Smart transport equipment, infrastructures and services; innovative transport management systems; safety aspects;
• Food security, sustainable agriculture, marine and maritime research & the bioeconomy
• Climate action, resource efficiency and raw materials:  
  ICT for increased resource efficiency; earth observation and monitoring;
• Inclusive, innovative and secure societies:  
  Digital inclusion; social innovation platforms; e-government services; e-skills and e-learning; e-culture; Cyber security; ensuring privacy and protection of human rights on-line.

Example: Smart Cities

Smart Cities are identified as a target research and innovation area in Horizon 2020 as part of the "societal challenges" under the challenge 'Secure Clean and Efficient Energy'. In order to prepare support actions for Horizon 2020, the themes Energy and ICT under FP7 have defined in a co-ordinated way a set of activities, in each respective Work Programme, addressing jointly Smart Sustainable Cities.

![Figure 3: ICT Interoperability](image)

The FP7-ICT Work Programme 2013 (cooperation) included several activities that aim to contribute to the Smart Cities initiative. In particular the objective 'Optimising Energy Systems in Smart Cities' is focused on system integration and validation of ICT infrastructures for energy-efficient neighbourhoods for carbon-neutral cities. In addition, objectives on 'A reliable, smart and secure Internet of Things for Smart Cities', 'Data Centres in an energy-efficient and environmentally friendly Internet' and 'Integrated personal mobility for smart cities' should also support Smart cities technologies and applications.
Horizon 2020 will, for example under this topic, continue the activities initiated under FP7 and group the subjects in one of the societal challenges, now called “Secure, clean and efficient energy”.

5. Instruments in Horizon 2020 for ICT

Horizon 2020 offers the opportunity for strategically developing ICT in order for the EU research community and industry to achieve a competitive advantage in the global marketplace. What is needed now is a dedicated action on future networks and information systems to focus the European efforts and achieve maximum impact with the resources available.

As previous Framework Programmes, Horizon 2020 is designed to incorporate several instruments, a part of the funding programme schemes.

Such instruments are:

- European Technology Platforms (ETPs)
- Joint Technology Initiatives (JTIs)
- Future & Emerging Technologies (“FET”) Flagships

5.1. ICT European Technology Platforms (ETP)

European Technology Platforms (ETPs) are a network of industry-led stakeholders charged to define research priorities in a broad range of technological areas. The functioning of those platforms can vary from one to another as some of them are loose networks that come together in annual meetings, whereas others are established legal structures with membership fees. There are currently 31 ETPs and all of them work on developing and updating agendas of research priorities for their particular sector.

Building on the strategies for Europe 2020 and for an Innovation Union, the Commission’s Horizon 2020 proposal for an integrated research and innovation framework programme recognises the role of European Technology Platforms (ETPs) as part of the external advice and societal engagement needed to implement Horizon 2020.

The ICT sector is one of the key drivers of the European economy. Since 1995, ICTs have driven half of productivity gains in the EU, thanks to technological progress and investments in the sector. Data for 2004-2007 suggests that this investment has more recently started to deliver efficiency gains in the rest of the economy. The value added of the ICT industry on the European economy is around €600 billion (4.8% of GDP). The sector accounts for 25% of the total business investments in R&D in the EU.

EU investment in ICT research aims at increasing European competitiveness in increasingly globalised and rapidly changing markets. Europe has great knowledge and industrial assets and it has one of the world’s largest markets. More than ever before,
partnering at European level is needed to keep pace with soaring research costs and increasingly complex and interdependent technologies.

European Technology Platforms are networks in specific topics aiming to prepare future activities, priorities and orientation of their field, as well on research as on implementation level. ETPs also play a role of advice vis à vis the European Commission.

ICT European Technology Platforms are active partners in ICT research dialogue, and their horizontal nature makes them excellent vehicles for cross-sectoral industrial cooperation to tackle societal challenges (e-Health, safe transport, solutions for the elderly...).

<table>
<thead>
<tr>
<th>Bio-based economy</th>
<th>Energy</th>
<th>Environment</th>
<th>ICT</th>
<th>Production and processes</th>
<th>Transport</th>
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<tbody>
<tr>
<td>EATIP</td>
<td>Biofuels</td>
<td>WssTP</td>
<td>ARTEMIS</td>
<td>ECTP</td>
<td>ACARE</td>
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<td>EU PV TP</td>
<td>EUROP</td>
<td>ESTEP</td>
<td>ERRAC</td>
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<tr>
<td>Food for Life</td>
<td>TPWind</td>
<td>ETP4HPC</td>
<td>EuMaT</td>
<td>ERTRAC</td>
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<tr>
<td>Forest-based</td>
<td>RHC</td>
<td>ENIAC</td>
<td>FTC</td>
<td>Logistics</td>
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<td>Plants</td>
<td>SmartGrids</td>
<td>EPoSS</td>
<td>SusChem</td>
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<td>SNETP</td>
<td>ISI</td>
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<td>Photonics 21</td>
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![Figure 4: Overview of European Technology Platforms in ICT](image)

Since 2005, the following ICT European Technology Platforms have been established the ICT sector:

- Artemis
- Europ : Robotics
- ETP4HPC
- ENIAC
- EPoSS : Internet of Things
- ISI : Satellite
- Net!works (ex eMobility) : Networks Infrastructure
- NEM : Networked media
- NESSI : Software & Services
- Photonics21 : Optical
Example: EPoSS
EPoSS, the European Technology Platform on Smart Systems Integration, is an industry-driven policy initiative, defining R&D and innovation needs as well as policy requirements related to Smart Systems Integration and integrated Micro- and Nanosystems. EPoSS is contributing to EUROPE 2020, the EU's growth strategy for the coming decade, to become a smart, sustainable and inclusive economy.

5.1.1. Horizon 2020: ETPs new organisation
At this stage, the future of the ETPs with regard to Horizon 2020 is not fully clear: The “European Technology Platforms 2020 – Draft Strategy” has now been produced by DG Research & innovation and has set up criteria to recognise ETPs. ETPs will be reviewed regarding their performance and impact. This review might lead to changes in the status, composition and the number of ETPs.

Different scenarios have been identified, from a possible drop of the current ETPs to a possible single ETP, however more information on the future ETPs and that their research priorities will be known in autumn 2013 only. For the moment the ICT platforms are asked to make specific accent on societal challenges.

The 4 scenarios of modification of the ETPs’ structure and status are:

- The starting point is that we go into H2020 with the same ETPs as at the end of the FP7 period.

- A convergence of several of the current ETPs, or parts of them, into one or two new ETPs - the main Networks and Content themes were identified in many presentations and the possibility of a horizontal software theme were mooted by the ETP presentations.

- Drop the current ETPs and take the H2020 outline and use it to design a configuration of new communities. This is actually different from scenario 2 in terms of drivers as it should be a more open and imaginative approach.

- One big ETP covering all the ICT issues in H2020.

5.2. ICT Joint Technology Initiatives (JTI)
Joint Technology Initiatives are an entirely new mechanism for performing research at EU level. They are long-term Public-Private Partnerships and are managed within dedicated structures based on Article 187 TFEU (ex Article 171 TEC). JTIs support large-scale multinational research activities in areas of major interest to European industrial competitiveness and issues of high societal relevance.

ARTEMIS was established as a European Technology Platform in June 2004. Its aim was to bring together key players in the Embedded Computing arena across the entire spectrum of industrial sectors by 17 major companies. One of its core tasks was to define
a common Strategic Research Agenda (SRA) which acts as a reference for the Embedded Computing domain to attract investment from the stakeholders. The first version of the SRA was published in March 2006. In addition, the platform's “Mirror Group” gathered representatives from 24 member states and associated countries. This group went on to become a founder of the Joint Undertaking alongside the Commission and ARTEMISIA.

Recently, the ARTEMIS ETP has become a JTI, the new **Electronic Components and Systems for European Leadership (ECSEL) Joint Technology Initiative (JTI)** is a merger of the ARTEMIS initiative on embedded systems and the ENIAC initiative on nano-electronics that both were set up in 2008. It also incorporates research and innovation on smart systems.

The new **ECSEL JTI** is expected to start in early 2014 and to be fully operational up to 2020 followed by a running down phase to 2024. It will bring together large companies, world class European research and technology organisations linked with higher education research labs, and SMEs providing technology and services. In particular three private industrial associations representing the actors from the areas of micro-/nanoelectronics, smart integrated systems and embedded/cyber-physical systems will be involved.

The **ENIAC** Joint Undertaking (JU) was created in February 2008 in order to implement a Joint Technology Initiative on nanoelectronics - a research programme aimed at enhancing the further integration and miniaturisation of devices and increasing their functionalities.

The ENIAC JU is set up as a public-private partnership, bringing together the European Commission and European Member and Associated States with AENEAS, the association representing the R&D actors in nanoelectronics (Corporate, SME’s, research institutes and universities) in Europe.

### 5.3. The Future & Emerging Technologies ("FET") Flagships

The Future & Emerging Technologies ("FET") Flagships are visionary, large-scale, science-driven research initiatives which tackle scientific and technological challenges across scientific disciplines.

The FET Flagships will have a transformational impact on science, technology and society overall. They foster coordinated efforts between the EU and its Member States' national and regional programmes, and beyond. They are highly ambitious and rely on cooperation among a range of disciplines, communities and programmes, requiring sustained support of up to 10 years.

The flagship initiatives were developed over a 2½ year preparatory phase. A call was published in July 2010, with 6 pilots retained as so-called preparatory actions. Based on
their pilot work, at the end of 2012, 25 world-renowned experts evaluated these and the 2 winners are announced as of 28th January 2013:

- Graphene
- Human Brain Project

The implementation of the two FET Flagships will start with the beginning of Horizon2020.

**Week of Flagship European Projects "Graphene" & "Human Brain Project" at UIMP**

Events: 24/06/2013 to 28/06/2013, Santander (ES)

The Flagship course on European Programmes: Graphene and Human Brain project, fell within the summer activities of the International University Menéndez Pelayo (UIMP) in Santander.

The Week of Flagship European Projects encouraged and promoted coordinated multidisciplinary research to advance knowledge in a faster way and with a clear transfer of the results to the industrial sector.

**Graphene**

The European Commission has chosen Graphene as one of Europe’s first 10-year, 1,000 million euro FET flagships. The mission of Graphene is to take graphene and related layered materials from academic laboratories to society, revolutionize multiple industries and create economic growth and new jobs in Europe.

**Workshop on Graphene and Related Materials**

(part of 10th International Conference on Nanosciences & Nanotechnologies)

Events: 09/07/2013 to 12/07/2013, Thessaloniki, Greece

The aim of this Workshop was to explore the state-of-the-art topics of graphene (fabrication, transfer, properties, applications, etc.). The workshop aimed to bring together leading experts and young researchers involved in surface science studies of the structural and physical properties, in the production of graphene from metallic supports (including device fabrication), and in theoretical investigations.

**Human Brain Project**

Understanding the human brain is one of the greatest challenges facing 21st century science. Rising the challenge can gain profound insights into what makes us human, develop new treatments for brain diseases and build revolutionary new computing technologies. Modern computing technology has brought these goals within sight. ICT is ready to give a completely new understanding of the brain and its diseases; understanding the brain will lead inevitably to radical innovation in computing.
6. Horizon 2020 calendar regarding ICT

The following is a preliminary calendar, based on information as of today (August 2013); it may be modified by the European Commission at any time.

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>April 2013</td>
<td>start of WP2014-15 orientations and drafting</td>
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<tr>
<td>Mid 2013</td>
<td>Adoption of legislative acts by Parliament and Council</td>
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<td>September 2013</td>
<td>Appointment of Programme Committees</td>
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<td>September 2013</td>
<td>Draft first work programme</td>
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<td>November 6-8</td>
<td>ICT 2013 in Vilnius (see details below)</td>
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<tr>
<td>End 2013</td>
<td>Adoption of the work programme and publication of the calls for proposals</td>
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<td>Spring 2014</td>
<td>closing of first calls</td>
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**ICT 2013 - Create, Connect, Grow, in Vilnius on 6-8 November, 2013**

More than 4000 researchers, innovators, entrepreneurs, industry representatives, young people and politicians are expected in Vilnius. The event will focus on Horizon 2020 - the EU’s Framework Programme for Research and Innovation for 2014-2020.

ICT 2013 includes:
- conference,
- exhibition,
- networking sessions,
- investment forum,
- activities for students and young researchers.
7. Conclusion

The objective of Horizon 2020 is to improve the competitiveness of European industry and enable Europe to master and shape future developments in ICT so that the demands of its society and economy are met. Activities will continue to strengthen Europe's scientific and technology base and ensure its global leadership in ICT, help drive and stimulate product, service and process innovation and creativity through ICT use and value creation in Europe, and ensure that ICT innovations are rapidly transformed into jobs and growth for the benefits of Europe's citizens, businesses, industry and governments.

Horizon 2020 sets a clear focus on innovation and scientific and technologic excellence: the core of future ICT developments.