



2016

Annual Activity Report

**DG Communications
Networks, Content
and Technology**



This Annual Activity Report for the year 2016 covers the activities of the Commission's Directorate-General for Communications Networks, Content and Technology (DG CONNECT).

A Connected Digital Single Market (DSM) is one of the top priorities of President Juncker, who underlined the importance of digital technologies and digital communications to empower Europe's citizens and economy in his 2016 State of the Union speech.

The Commission's 2015 DSM Strategy constitutes the main policy framework for the DG until the end of the mandate of this Commission. DG CONNECT delivered on the commitments taken in the DSM Strategy, in line with a challenging timetable which provided for the adoption of several legislative proposals in 2016. This was possible thanks to DG CONNECT's fully dedicated staff.

As initiated by the Commission and agreed by the European Parliament and the Council in May 2016 and January 2017, mobile roaming charges will be fully abolished in 2017. Furthermore, Europeans will soon be able to fully use their online subscriptions to films, sports events, e-books, video games or music services when travelling within the EU following a political agreement in February 2017 on a 2015 Commission proposal. These are first very tangible results of actions set out in the DSM Strategy.

In 2016, the Commission adopted several legislative proposals prepared by DG CONNECT for the modernisation of copyright rules. The Commission also proposed to revise the European regulatory framework for content, the Audiovisual Media Services Directive, so that all market players have to respect the same standards and uphold the same values and principles: promoting cultural diversity by supporting European films, protecting children from harmful content and tackling hate speech in social media. The Commission also took different initiatives prepared by DG CONNECT to digitise industry and boost public and private investment. This includes the creation of a European network of digital innovation hubs, a European cloud for Europe's researchers and encouraging industry and standardisation bodies to work on common standards in 5G communications networks and cybersecurity. We also launched a new public-private partnership on cybersecurity to support Europe's capacities to fight cyber-attacks.

DG CONNECT also implements key EU programmes which are geared to deliver on the DSM and the Commission's objective to boost jobs, growth and innovation: the ICT part of the Research Framework Programme Horizon 2020, the telecommunications strand of the Connecting Europe Facility and the MEDIA subprogramme of Creative Europe.

Part 1 of the report sets out in detail the policy achievements of the DG and our contribution to boost jobs, growth and investment with digital technologies improving people's lives and increasing the competitiveness of the European economy at large and its key sectors. Parts 2-4 provide information on the management of resources allocated to the DG, and how we are organised internally. These sections contain information about the balance that we found between trusting and controlling beneficiaries that we fund, and the costs and benefits of the different parts of the grant management operations.

I hope that the report offers a good overview of the various operations of the DG and helps in understanding the added value that information and communication technology can bring to the EU citizens. For more information please visit our website: <https://ec.europa.eu/digital-single-market/dg-connect>

Roberto Viola

Director-General

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THE DG IN BRIEF

DG CONNECT conceives and implements the policies required to create a Digital Single Market for more growth and jobs, where citizens, businesses, and public administrations can seamlessly and fairly access and provide digital goods, content and services.

We foster a modern, secure, open, and pluralistic society building on our values such as democracy, freedom of expression and tolerance and Europe's cultural diversity, creativity and respect of creators' rights.

We help drive the digital transformation of European industry and public services through the use of innovative digital technology and support for the development of digital skills.

We strive to develop a long-term vision investing in potential technology breakthroughs and flagships, which can improve peoples' lives and to increase the competitiveness of the European economy at large and its key sectors.

We live our values as a creative, responsible and result-oriented European Union public service. We work on the best available evidence, and we cooperate closely with our stakeholders, our international partners and other EU institutions. We seek value for the taxpayer's money in all we do.¹

The impact of policy work in DG CONNECT is measured, planned and monitored by aligning it to the Commission priorities and Work Programme and by ensuring compliance with the Better Regulation principles.

The DG carries out an integrated, digital-first communication strategy, shaping views on complex issues and sharing the knowledge within the DG and using the full panoply of tools to present them to the various external audiences in an open manner that encourages engagement. Our aim is to broaden even further our communication to non-experts, something that has been done with great success in 2016. In this context, DG CONNECT has developed a toolkit, called Futurium, to quickly and cheaply build and manage engagement platforms for evidence based policymaking and foresight that are open to everyone's participation and allow diverse variables to be exploited to analyse the results.

DG CONNECT communicates and cooperates with institutional and non-institutional stakeholders at national, EU and international level in the implementation of the DSM Strategy and research programmes. DG CONNECT works with the College and other Commission services to implement actions defined in the Digital Single Market Strategy. In this context we will deliver major policy and legislative initiatives in the next few years in light of dynamic technological and market developments. This involves evaluating, reviewing, and consolidating existing legislation and possibly proposing new rules. Close relations with the DG's institutional partners and the Member States will facilitate agreement by the co-legislators and implementation of European policies, including the swift transposition of new European rules into national law. Key partner DGs are the Secretariat General, the Legal Service, the Research Family DGs, in particular DG Research and Innovation, and other DGs involved in the DSM, in particular DG

¹ DG CONNECT's mission statement.

Internal Market, Industry, Entrepreneurship and SMEs, DG Justice and Consumers, DG Competition and DG Mobility and Transport. We cooperate closely with major policy initiatives and partnerships, such as the Grand Coalition for digital jobs.

DG CONNECT ensures that its priorities and the international dimension of policy work are reflected in the relations with international partners, and that our policy and research activities are compliant with the Union's international commitments. This implies establishing Commission positions on bilateral level with countries and regions outside the Union, and in multilateral and international fora, including G7 and G20. To this end, DG CONNECT ensures close cooperation with the European External Action Service and other DGs on international aspects of digital policies. In particular, the DG has worked with DG Trade on trade agreements and promotes access for EU industry including direct market access. DG CONNECT has also been instrumental raising the profile of digitalisation in the EU Development Policy. In cooperation with relevant Commission services, the DG has negotiated with non-EU countries and international organisations. In particular, DG CONNECT coordinated the development of a Digital Community with countries in the EU's Eastern Partnership.

DG CONNECT implements EU research policy and supports the development of the European Research Area mainly through the Research Framework Programmes FP7 and Horizon 2020. FP7 (2007-13) is phasing out, but still a large portion of the 2016 payments appropriations were used for FP7 cost claims. DG CONNECT completed the strategic scoping for the last period of Horizon 2020, laying the foundations for the 2018-20 Work Programmes for ICT, prepared the 2017 Work Programme for CEF Telecom and started reflections on the coverage of digital issues in the next Multiannual Financial Framework (MFF). In parallel to the assessment and definition of different digital projects of priority (e.g. in the area of High-Performance Computing), we looked into different financing options. Among others, financial instruments are being considered as a viable support measure, also by blending with grants. Finally, DG CONNECT started collaboration e.g. with DG Regional and Urban Policy to maximise resources by producing synergies between different financing frameworks.

DG CONNECT supervised and governed four executive agencies: the Research Executive Agency (REA), the Innovation and Networks Executive Agency (INEA), the Executive Agency for Small and Medium-sized Enterprises (EASME) and the Education, Audiovisual and Culture Executive Agency (EACEA). It also was in charge of a Joint Undertaking, namely the Electronic Components and Systems for European Leadership (ECSEL), the Active and Assisted Living (AAL) Joint Programme, the European Union Agency for Network and Information Security (ENISA) and the Body of European Regulators for Electronic Communications (BEREC and the BEREC Office). DG CONNECT also acted as the designated service under a delegation agreement with the European Investment Bank (EIB) in the context of the CEF Financial Instruments and under a delegation agreement with the European Investment Fund (EIF) for the Cultural and Creative Sectors Guarantee Facility.

DG CONNECT went through organisation chart adjustments as of 1 July 2016, achieving a better alignment of DG CONNECT's organisational structure with the Commission priorities set out by President Juncker, while meeting the HR requirements as regards synergies and efficiency gains and contributing to the implementation of the political agreement to gradually increase Commission staff and services in the digital pole in Luxembourg as of 2018.

EXECUTIVE SUMMARY

The Annual Activity Report is a management report of the Director-General of DG CONNECT to the College of Commissioners. Annual Activity Reports are the main instrument of management accountability within the Commission and constitutes the basis on which the College takes political responsibility for the decisions it takes as well as for the coordinating, executive and management functions it exercises, as laid down in the Treaties².

a) Key results and progress towards the achievement of general and specific objectives of the DG (executive summary of section 1)

1) General Objective "A Connected Digital Single Market"

Digital goods and services are available to consumers and businesses across Europe

On 14 September 2016, the Commission proposed **reviewed EU copyright rules** to achieve more cross-border access to content online; wider opportunities to use copyrighted materials in education, research and cultural heritage and a better functioning copyright marketplace. The package also contained the **proposals to implement the Marrakesh treaty**, which will make more books and texts available for people who are visually impaired or have other print disabilities in a format suitable for them.

A political agreement related to the modernisation on EU copyright rules was reached in early 2017 on the 2015 Commission proposal of a **Regulation to broaden access to online content for travellers in the EU**. Europeans will be able to fully use their online subscriptions to films, sports events, e-books, video games or music services when travelling within the EU.

A milestone was reached concerning the removal of barriers to eCommerce through the adoption of a **Proposal for a regulation on unjustified geo-blocking** in May 2016 and the subsequent agreement by the Council on 28 November 2016, which retained all essential elements of the Commission proposal and will serve as the Council's common position to start negotiations with the European Parliament.

The MEDIA sub-programme has made a significant contribution to the DSM. MEDIA **strengthens the capacity of the audiovisual industry** to take advantage of the single market through cross-border collaboration, circulation and access, thus overcoming national fragmented markets. MEDIA continued to support Europa Cinemas responsible for providing education and marketing activities. Furthermore, the **Cultural and Creative Sectors Guarantee Facility** was launched to address the financing gap for SMEs in these sectors. MEDIA has also provided concrete **support to industry to adapt in the light of a changing business and regulatory environment** by supporting a number of accompanying measures, including the creation of ready-to-offer catalogues of European content and the promotion of European works online.

² Article 17(1) of the Treaty on European Union.

Electronic communications networks and services, digital content and innovative services benefit from favourable conditions and compete on a level playing field

On 14 September 2016, the Commission adopted a **proposal for a directive establishing the European Electronic Communications Code** and a **proposal for the review of the regulation establishing the Body of European Regulators for Electronic Communications (BEREC)**. The legislative proposals review the current telecoms regulatory framework and were accompanied by a REFIT evaluation of the electronic communications regulatory framework.

On 25 May 2016, the Commission adopted, based on a REFIT evaluation, a proposal amending the **Audiovisual Media Services Directive (AVMSD)**, facilitating the country of origin principle (i.e. that audiovisual media service providers are subject only to the rules of the Member State where they are established and can freely provide their services across the EU). The proposal aims at bringing the Directive in line with the new realities including the increasing use of video sharing platforms and on demand services by introducing flexibility when restrictions only applicable to TV are no longer justified.

The **Communication on Online Platforms**, adopted on 25 May 2016, laid out for the first time a comprehensive analysis and policy-orientation related to intermediation platforms. The Platform Communication was very well received by a broad range of stakeholders – including Member States.

Adopted on 6 July 2016, the **Directive on security of network and information systems (the NIS Directive)** aims at increased national cybersecurity capabilities, EU level cooperation and security and notification requirements.

On 5 July 2016 the Commission adopted the **Communication on Strengthening Europe's Cyber Resilience System and Fostering a Competitive and Innovative Cybersecurity Industry**, announcing the launch of a public-private partnership on cybersecurity and additional market-oriented policy measures to boost industrial capabilities in Europe.

In line with the objective to increase trust in and the security of digital services, the Commission adopted, based on a REFIT evaluation, a **proposal for a Regulation on Privacy and Electronic Communications** to provide a high level of privacy protection for users of electronic communications services and a level playing field for all market players. The proposal will enhance harmonisation of the rules for businesses and the level of protection of privacy and personal data for end-users in line with the new General Data Protection Regulation.

The rules on trust services under the **eIDAS Regulation** became applicable to the Member States on 1 July 2016. Most of them have put in place and validated their National Trusted Lists and the Commission is operating the EU list of Trusted Lists.

The digital economy can develop to its full potential underpinned by initiatives enabling full growth of digital and data technologies

On 19 April 2016 the Commission adopted the **Communication on the European Cloud Initiative**, which proposes a European Open Science Cloud offering the services

needed to work with the large volumes of information generated by the big data revolution.

On 10 January 2017 the Commission adopted a **Communication on Building a European Data Economy**, which explores the free flow of data; access and transfer in relation to machine generated data; liability and safety in the context of emerging technologies; and portability of non-personal data, interoperability and standards. Together with the Communication the Commission has launched a public consultation.

The **Digitising European Industry (DEI) initiative** announced on 19 April 2016 a series of measures to digitise the industry through supporting systems and technologies, notably the Internet of Things, one of the priority areas for essential action to drive the digitalisation of the European economy, such as the Internet of Things.

Following preparatory action, through H2020 funding and a group of Member State experts, the **Digital Skills and Jobs Coalition** was launched on 1 December 2016.

As announced by the DSM and following the evaluation results of the past eGovernment Action Plan 2011-2015, the **2016-2020 eGovernment Action Plan** was adopted on 19 April 2016. It has a vision for 2020 based on 7 underlying principles: digital-by-default, cross-border by default, once-only principle, inclusive by default; privacy and data protection; Openness and transparency by default. It is built around three policy priorities (modernising public administration with ICT, using key digital enablers; enabling cross-border mobility with interoperable digital public services; and facilitating digital interaction between administrations and citizens/businesses for high-quality public services).

All Europeans enjoy effective world-class connectivity through future-proof and ubiquitous digital networks and service infrastructures as underlying basis for the digital society and data economy

DG CONNECT brought together policy, regulatory and funding measures to improve connectivity through future-proof and ubiquitous digital networks and service infrastructures.

On 2 February 2016, the Commission adopted a proposal for a Decision of the European Parliament and of the Council on the **use of the 470-790 MHz frequency band** in the Union to better coordinate spectrum within the ultra-high frequency band and to boost mobile services with more radio frequencies from the 700 MHz band. On 27 April 2016, the Commission adopted an **Implementing Decision on the harmonisation of the 694-790 MHz (700 MHz) frequency band for wireless broadband** which is complementary to the Commission's legislative proposal and sets out technical conditions reducing the risk of cross-border interference.

Based on proposals by DG CONNECT, the Commission adopted on 14 September 2016 a **"Connectivity package"** of measures to ensure that everyone in the EU will have the best possible internet connection to participate in the digital society and economy, based on the widespread deployment and take-up of very high capacity networks, in rural and urban areas, and across all of society. It includes a proposed set of strategic connectivity objectives for 2025 announced in the Communication **"Connectivity for a Competitive Digital Single Market – Towards a European Gigabit Society"**. The package also includes a proposal for a Regulation for the **promotion of Internet connectivity in**

local communities (WiFi4EU initiative) aiming at providing financial incentives in favour of those public entities which want to provide free, high capacity local wireless connectivity in centres of community life.

A modern, open and pluralistic society building on Europe's cultural diversity, creativity and respect of creators' rights and its values in particular democracy, freedom of expression and tolerance

In line with the Council Conclusions of 31 May 2016 on **Europeana**, the CEF 2016 Work Programme was amended to change the funding instrument for the Europeana core service from grant-funding to procurement to ensure sustainability of the core service platform.

The **Web Accessibility Directive** entered into force on 22 December 2016. It lays down principles to follow when designing, constructing, maintaining and updating websites and mobile applications of public sector bodies to make them more accessible for the public, including people with disabilities.

DG CONNECT pursued a strategic dialogue with **Euronews** to streamline the bilateral relations and assess a series of announced production changes in the channel. The Commission received safeguards on the channel's commitment to multilingualism, EU content and a stronger digital presence. The contract with **European Radio Network Euranet Plus** was renewed.

2) General Objective "A New Boost for Jobs, Growth and Investment"

Europe maintains its position as a world leader in the digital economy, where European companies can grow globally, drawing on strong digital entrepreneurship and performing start-ups and where industry and public services master the digital transformation

The **Digitising European Industry (DEI)** initiative was adopted by the Commission on 19 April 2016. It aims at ensuring that every business in Europe, especially SME and the non-tech industry can fully benefit from digital innovations to create higher value digitised products, maximise efficiency of its processes and adapt its business models. Five action lines were proposed and kick-started in 2016:

- Setting up a dynamic framework for cooperation between stakeholders including representatives of Member States initiatives, industry and social partners;
- Investing EUR 500 million in digital innovation hubs;
- Ensuring leadership in next generation key digital technologies and industrial platforms aiming at focusing existing Public-Private Partnerships (PPPs) on the digitisation goals;
- Providing a smart and future-proof legislative framework;
- Preparing Europeans for the digital age with the Grand Coalition for Digital Jobs and Skills aiming at creating a big digital talent pool in Europe and targeting both ICT professionals and the workforce at-large.

The **Communication on 'Europe's next leaders: the Start-up and Scale-up Initiative'** published on 23 November 2016 is part of the efforts to make a deeper and fairer single market, creating opportunities for consumers and businesses and helping SMEs and start-ups to grow.

One of the major show stoppers for the **smart cities** uptake is the lack of ICT city interoperability based on an open standards platform. 2016 saw the biggest progress to date marked by the launch of the smart cities project Espresso, attracting a substantial number of signatories to the demand (~90 cities) and the supply (~50 industries).

The Commission launched an H2020 funded Large Scale Pilot to test the application of the **once-only principle** for businesses in the EU involving 22 countries and more than 50 organisations.

Europe's research finds investment opportunities for potential technology breakthroughs and flagships, in particular through the Horizon 2020 programme and using Private-Public Partnerships

Future Emerging Technologies (FET) Flagships are ambitious, highly-risky, long term and large scale research and innovation initiatives pursuing grand interdisciplinary scientific and technological challenges. The two **Flagships, Graphene and the Human Brain Project (HBP)** are producing outstanding results: a thousand of top-class scientific publications, 40 prototypes delivered, 2 spin-out companies created and more than 280 concrete collaborations with industry resulting in 10 new products and 48 joint patent applications.

The Commission announced a new **FET Flagship on Quantum Technologies** which is now under preparation. In addition, following a public consultation on new Flagships in early 2016, there is a broad support among Member States and key research stakeholders to prepare new flagships in areas of strategic importance for Europe.

With respect to **FET Proactive** which encourages researchers from different disciplines to work together on new technologies in specific domains, around 100 FP7 and 45 Horizon 2020 projects were managed by the DG.

Contractual Public-Private Partnerships (cPPPs) play a strategic role and are of key importance in the support to ICT. In total, seven PPPs are now supported entirely or partly through the H2020 LEIT-ICT: 5G, Photonics, Robotics, Big Data, Factories of the Future, High Performance Computing and the Cybersecurity cPPP which was launched in mid-2016. In addition to the cPPPs, DG CONNECT continues financing the Electronic Components and Systems for European Leadership (ECSEL) Joint Undertaking.

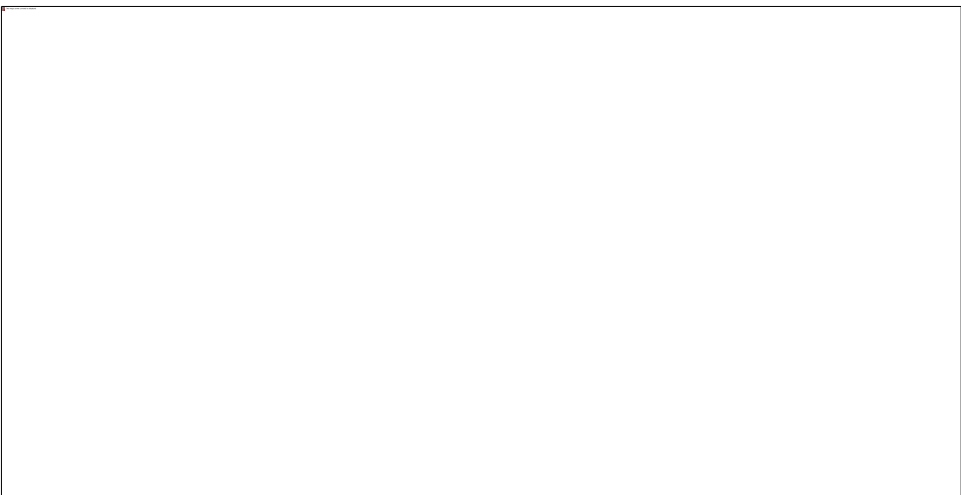
The **Active and Assisted Living Joint Programme** has supported research in ICT and ageing domain with support from Horizon 2020 since 2014. It has provided funding of the EC and Participating countries with a total value of EUR 113 million with about the same amount of co-financing from the beneficiaries.

DG CONNECT started preparing for the **Next Generation Internet initiative**, which has the aim to shape the future internet as a powerful, open, data-driven, user-centric, interoperable platform ecosystem.

b) Key Performance Indicators (KPIs)

This subsection shows the five KPIs most relevant for DG CONNECT as set out in the Strategic Plan 2016-2020, i.e. the indicators which measure the most critical aspects of its performance and gives useful insights into its most significant achievements. The fifth KPI is control related, reflecting sound financial management.

KPI 1: Increased portability of online content service	
Target 2017	Latest known results
100% paid-for subscriptions for online content services portable across borders 1 year after the adoption of the Regulation on portability (start of application in 2018).	Political agreement between legislators reached in February 2017, paving the way for meeting the target as planned

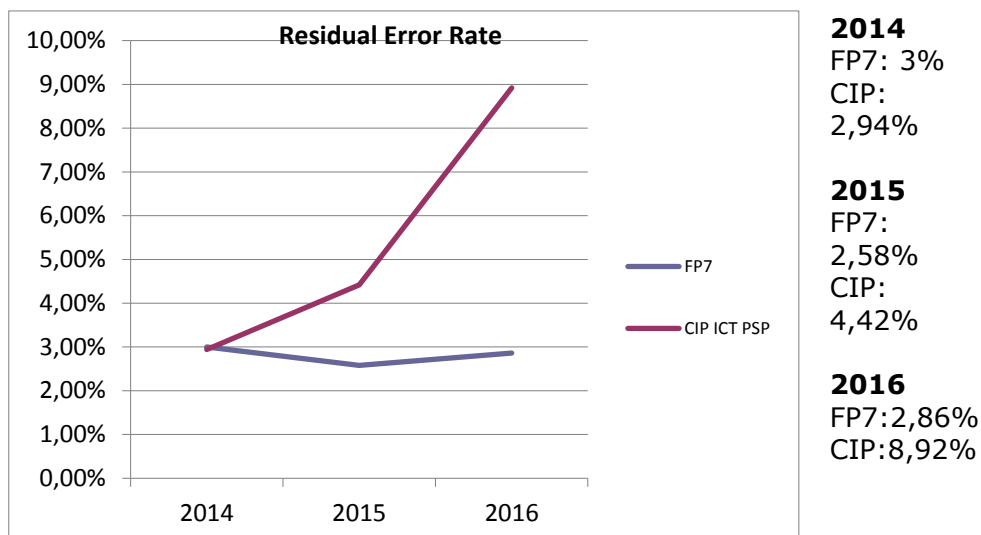
KPI 2: Deployment of network infrastructure promoting a Gigabit society		
Interim milestone (2020)	Target (2025)	Latest known results
a) 100% coverage at 30 Mbps (EU citizens, DAE target) b) 50% take-up at 100 Mbps (households, DAE target)	c) Gigabit connectivity for places driving socio-economic developments (target determined by the 2016 Gigabit Society Communication)	a) Next Generation Access (NGA) coverage 76 % at 30 Mbps. b) 11 % take-up at 100 Mbps. c) An assessment of how to quantify the connectivity of socio-economic drivers throughout the EU is ongoing.
		

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KPI 3: Leveraging private investment through Private Public Partnerships		
Interim Milestone (2017)	Target (2020)	Latest known results
Additional private funding matching at least EU funding (i.e. 1.3 billion €).	Private investment at least 3 times the total EU funding for the cPPPs.	The contractual arrangements between the Commission and the private counterpart foresee different leverage factors for each cPPP. Information on 2016 leverage is not yet available, but does form part of the annual monitoring exercise carried out for each cPPP. A mid-term review for the H2020 cPPPs (except Cybersecurity established only in 2016) will be prepared together with a group of experts in 2017.

KPI 4: Patent applications and patents awarded as a result of H2020 grants for Future and Emerging Technologies (FET) and Leadership in Enabling and Industrial Technologies (LEIT)	
Target as defined in the Horizon 2020 Specific Programme	Latest known results (source: CORDA (1.1.2017)).
Target at the end of H2020: LEIT ICT: 3 patent applications per EUR 10 million funding FET: 1 patent application per EUR 10 million funding	LEIT ICT: 23 patents applications (= 0.1/EUR 10 million funding), 3 patents awarded (= 0.01/EUR 10 million funding). FET: 0. Output data is collected through the continuous project reporting made by beneficiaries under their own responsibility. At this early stage of data reporting, no systematic data quality check has been performed by the Commission services, hence data is solely based on self-declarations of project coordinators. The preliminary statistics on projects outputs for LEIT ICT show progress in the number of patents applications and patents awarded. However, as many Horizon 2020 projects are in their early phases, they have not yet produced large numbers of patents (and in the case of FET none) as patenting and commercial exploitation often take a long time.

KPI 5: FP7 and CIP ex-post control residual error rate



The residual error rate of the Seventh Research Framework Programme (FP7) amounts to 2,86% and is above the 2% materiality threshold. DG CONNECT therefore issues a reservation as in the past years and in line with similar reservations expressed by the other DGs of the Research Family. The residual error rate for the Competitiveness and Innovation Programme (CIP) ICT PSP amounts to 8,92%. DG CONNECT expects that the residual error rate will not decrease under the materiality threshold at the end of the programme and therefore also expresses a reservation on the legality and regularity of these payments as in last year's annual activity report. The significant increase of the residual error rate of the CIP ICT PSP programme in 2016 should be considered with caution. Contrary to FP7 for which the calculations of the error rates are based on the audits of nearly 400 cost statements, the CIP error rate calculations are based on a number of audits (75 audits at the end of 2016) which is too limited to be considered as representative for the whole population. In 2016, the 5 audits with the highest adjustments account for 54,75% of the total amount adjusted and 4,74% points of the detected error rate. Without these 5 audits, the detected error rate would be of 4,82% which is similar to the FP7 representative error rate. Given the similarity of the control systems of the FP7 and CIP ICT PSP programmes, such error rate would be plausible.

Nevertheless, it is usual that towards the end of the implementation of the audit strategy, the error rates slightly increase because audits with high adjustments generally require more time to be closed than those without or with small adjustments.

For H2020, the first indication for the control results based on a representative sample is expected for the next annual activity report. Given the legal bases, the specificities of the H2020 programme and the experience with FP7, it is likely that the residual error rate will be close to 2%.

c) Key conclusions on Financial management and Internal control

In accordance with the governance statement of the European Commission, the staff of DG CONNECT conducts its operations in compliance with the applicable laws and regulations, working in an open and transparent manner and meeting the expected high level of professional and ethical standards.

The Commission has adopted a set of internal control standards, based on international good practice, aimed to ensure the achievement of policy and operational objectives. The financial regulation requires that the organisational structure and the internal control systems used for the implementation of the budget are set up in accordance with these standards. DG CONNECT has assessed the internal control systems during the reporting year and has concluded that the internal control standards are implemented and function as intended. Please refer to AAR section 2.1.3 for further details.

In addition, DG CONNECT has systematically examined the available control results and indicators, including those aimed to supervise entities to which it has entrusted budget implementation tasks, as well as the observations and recommendations issued by internal auditors and the European Court of Auditors. These elements have been assessed to determine their impact on the management's assurance as regards the achievement of control objectives. Please refer to Section 2.1 for further details.

In conclusion, management has reasonable assurance that, overall, suitable controls are in place and working as intended; risks are being appropriately monitored and mitigated; and necessary improvements and reinforcements are being implemented. The Director General, in his capacity as Authorising Officer by Delegation has signed the Declaration of Assurance albeit qualified by a reservation concerning the rate of residual errors with regard to the accuracy of cost claims in the 7th Research Framework Programme's and the Competitiveness and Innovation Framework Programme's grant agreements.

d) Information to the Commissioner

In the context of the regular meetings during the year between the DG and the Commissioner on management matters, also the main elements of this report and assurance declaration, including the reservations envisaged, have been brought to the attention of Commissioner Günther H. Oettinger, responsible for Digital Economy and Society until 31 December 2016 and Vice-President Andrus Ansip, responsible for Digital Economy and Society as of 1 January 2017.

A CONNECTED DIGITAL SINGLE MARKET

SPECIFIC OBJECTIVE 1.1

Digital goods and services are available to consumers and businesses across Europe

SPECIFIC OBJECTIVE 1.2

Electronic communications networks and services, digital content and innovative services benefit from favourable conditions and compete on a level playing field

SPECIFIC OBJECTIVE 1.3

The digital economy can develop to its full potential underpinned by initiatives enabling full growth of digital and data technologies

SPECIFIC OBJECTIVE 1.4

All Europeans enjoy effective world-class connectivity through future-proof and ubiquitous digital networks and service infrastructures as underlying basis for the digital society and data economy

SPECIFIC OBJECTIVE 1.5

A modern, open and pluralistic society building on Europe's cultural diversity, creativity and respect of creators' rights and its values in particular democracy, freedom of expression and tolerance

DG CONNECT STRATEGIC PRIORITIES 2016-2020

A NEW BOOST FOR JOBS, GROWTH AND INVESTMENT

SPECIFIC OBJECTIVE 2.1

Europe maintains its position as a world leader in the digital economy, where European companies can grow globally, drawing on strong digital entrepreneurship and performing start-ups and where industry and public services master the digital transformation

SPECIFIC OBJECTIVE 2.2

Europe's research finds investment opportunities for potential technology breakthroughs and flagships, in particular through the Horizon 2020 programme and using Private Public Partnerships

1. KEY RESULTS AND PROGRESS TOWARDS THE ACHIEVEMENT OF GENERAL AND SPECIFIC OBJECTIVES OF THE DG³

Relevant general objective: A Connected Digital Single Market

The impact indicator for the Connected Digital Single Market is the number of Member States above the value of 0.6 in the Digital Economy and Society Index. According to the 2016 data, 23 Member States are already above this value.

Baseline	Latest known results	Interim Milestone		Target
2014	2016	2017	2019	2020
13	23	20	24	28

Specific objective 1.1: Digital goods and services are available to consumers and businesses across Europe.

Related to spending
programme(s) Creative
Europe MEDIA

Geo-blocking

A key milestone was reached concerning the removal of barriers to eCommerce through the adoption of a **Proposal for a regulation on unjustified geo-blocking** in May 2016 and the subsequent agreement by the Council on 28 November 2016, which retained all essential elements of the Commission proposal and serves as the Council's common position to start negotiations with the European Parliament.

Copyright

The Commission proposed two directives and two regulations to adapt the EU copyright rules to the realities of the DSM on 14 September 2016. They will help European copyright industries to flourish in the DSM and European authors to reach new audiences, while making European works widely accessible to European citizens, also across borders. The aim is also to ensuring a good balance between copyright and other public policy objectives such as education, research, innovation and the needs of persons with disabilities.



³ See footnote 2.

The proposals for a directive on **copyright in the digital single market** and the proposal for a regulation on **online transmission and retransmissions of TV and radio programmes** aim to ensure better choice and access to content online and across borders, improved copyright rules on research, education and inclusion of disabled people, and a fairer and sustainable marketplace for creators, the creative industries and the press. One key objective of these proposals is to increase the availability of works for citizens across Europe, creating favourable conditions for cross-border distribution of television and radio programmes online, increasing the availability of audiovisual works on Video on Demand platforms and facilitating the digitalisation and dissemination of works that are out-of-commerce. A second objective is to modernize the EU rules applicable to key exceptions and limitations in the areas of teaching, research and preservation of cultural heritage, focusing in particular on digital and cross-border uses. Furthermore, the proposed measures aim at creating a fairer market place through the introduction of a new related right for press publishers, new rules for use of protected content by service providers storing and giving access to large amounts of works uploaded by their users, and the reinforcement of the position of artists and creators to decide the use of their content and possible remuneration for it by online platforms, together with strengthening the position of artists and creators in the relationships with their contractual partners.

The **REFIT evaluation of the Satellite and Cable Directive** focused on the effectiveness, efficiency, relevance, coherence and EU added value of the Directive and also assessed if the scope of the Directive needed to be enlarged to cover broadcasters' online transmissions and whether further measures were needed to improve cross-border access to broadcasters' services in Europe. The evaluation contributed to the evidence base for a decision whether and to what extent the legal mechanisms established by the Directive could be used for the copyright modernisation measures. In particular, the proposed regulation on online transmission and retransmissions of TV and radio programmes referred to above introduces the application of the country of origin to some online transmissions of broadcasting organisations, and the collective management of rights to retransmissions by means equivalent to cable. Also, the evaluation concluded that the Satellite and Cable Directive remains relevant, as a tool facilitating licensing of cross-border satellite broadcasts and cable retransmissions of TV and radio programmes.

Finally, the package includes proposals for a new directive and a regulation that will **implement the Marrakesh Treaty for people with print disabilities in EU law**. This will facilitate access to published works for persons with printing disabilities, by allowing blind and other visually impaired persons to have better access to special format copies of books across the EU and from other parts of the world.

Creative Europe - MEDIA

The MEDIA sub-programme has made a significant contribution to the DSM in two main ways. Firstly, MEDIA strengthens the capacity of the audiovisual industry to take advantage of the single market through cross-border collaboration, circulation and access, thus overcoming national fragmented markets. In 2016 there have been several success stories. The Distribution automatic scheme made available EUR 20 mio to facilitate the circulation of non-national films, reaching an audience of 52 million. New audiences have been targeted, for example through film festivals. The Cinekid's Festival reached an audience of 50,000 children through over 500 audiovisual productions selected by the festival. By building an active engagement with content this festival has aimed to enhance the experience of and demand for European films amongst digital

native generations. MEDIA has also successfully helped develop new films that can reach international audiences and acclaim.

In 2011 a small development grant of EUR 33,000 led to the production of the film Toni Erdmann, which was released in 2016 and made 300,000 admissions in Germany in three weeks, 105,000 admissions in France in the first week and was sold to 100 territories worldwide. The film has been nominated for the best foreign language film to the 2017 Oscars.

MEDIA also supports Europa Cinemas, a network of roughly 1,000 European cinemas in 33 European countries, screening a significant proportion of non-national European films. The network is responsible for providing education and marketing activities. It is estimated that each euro invested in the network generates EUR 13 through additional audiences.

Secondly, MEDIA has provided concrete support to industry to adapt in the light of a changing business and regulatory environment. To this end, MEDIA has supported a number of accompanying measures. For example, as changes to copyright regulations are proposed to increase online access, MEDIA supports the creation of ready-to-offer catalogues of European content. Overall 108 European films were made available in an average of 10 territories, for a total amount of about 950 online releases. Also, as the review of the Audio-visual Media Services Directive seeks to ensure 20% share of European content in the video-on-demand catalogues, MEDIA has actively promoted European works online. Five projects have been selected with innovative distribution strategies: Day and Date; Festival-to-date; Search tools; eCinema and VOD integration in theatre websites.

As regards media convergence and social media, seven grants were signed in 2016 under WP2014-15 and the topic "Media and content convergence" (WP2016-17) was launched and quite popular, with some 13-14 projects starting in 2017.

As part of the **STARTS initiative – Innovation at the nexus of Science, Technology and the ARTS**, the **STARTS prize** was for the first time awarded in 2016 and handed out by the Commissioner in Linz at the Ars Electronica Festival.

The winners were Belgian fashion designer Iris van Herpen in the category 'artistic appropriation of technology' for use of 3D printing in fashion, and German medical technology company Ottobock and Kunsthochschule Weissenberg in the category 'successful collaboration of art and technology for innovation' for their collaboration on radically new forms of prostheses.

Specific objective 1.2:
Electronic communications networks and services, digital content and innovative services benefit from favourable conditions and compete on a level playing field.

Regulatory Framework for the Digital Single Market (DSM)

On 14 September 2016, the Commission adopted a **proposal for a directive establishing the European Electronic Communications Code** and a **proposal for the review of the regulation establishing the Body of European Regulators for**

Electronic Communications (BEREC). The legislative proposals, which review the current telecoms regulatory framework, were preceded by a public consultation involving dialogue with stakeholders and the organisation of an expert group with leading academics. The proposal was also accompanied by a REFIT evaluation of the whole electronic communications regulatory framework, which had shown that the regulatory framework has broadly achieved its general objective of ensuring a competitive sector that provides significant end-user benefits. Nevertheless, while its main specific objectives — promoting competition, developing the internal market and promoting the interests of end-users — remain relevant, a review was needed to address the growing need for increased connectivity of the DSM and to streamline provisions taking into account market and technological developments. More in detail, the evaluation found that under the existing framework, access and spectrum regulation in particular, but also market entry provisions, have increased competition. Nevertheless, access regulation has delivered competition more at service than at network level. Also, investments in very-high-capacity networks have advanced, but not across all Member States at a pace corresponding to expected future needs. A significant amount of spectrum has been released for wireless broadband, but progress in spectrum management has not been as good as wanted, resulting in delayed and fragmented network roll-out and take-up. Results in terms of achieving the single market objective are not very impressive. Regulatory consistency has been achieved only to a limited extent, affecting the operations of cross-border providers and reducing predictability for all operators and their investors. The cooperation and consistency tools available have not always led to the best regulatory solutions being chosen, with impacts on end-user.



DG CONNECT successfully completed the **Wholesale Roaming Review**, including adoption, by the College, of a legislative proposal for a wholesale roaming reform. In December 2016, the Commission adopted an implementing regulation on the application of fair use policy and the (retail) sustainability mechanism and an implementing regulation on updating the EU average termination rates. With these outputs, DG CONNECT prepared the Commission's contribution to the fulfilment of a major political objective of the legislator, namely the end of mobile roaming surcharges while traveling within the European Union by June 2017.

DG CONNECT drafted Commission **decisions for more than 130 notifications by national regulatory authorities (NRAs) of draft regulatory measures** in EU electronic communications markets, under Articles 7 and 7a of the Framework Directive. In seven instances the Commission carried out extended investigations leading to withdrawals of notifications by NRAs in four cases (for local access and central access markets) and, in six cases, to so-called Article 7a Recommendations of the Commission to NRAs for local and central access markets and fixed as well as mobile call termination markets. In this way DG CONNECT contributed to fostering the internal market for electronic communications in the EU and making regulatory intervention in markets across Member States more consistent.

More than 64% of all electronic communications markets (and of all access markets) which were subject to economic regulation in 2003 have been deregulated over the past 13 years in the EU. In 2016 alone, nearly 20% of all electronic communications markets still regulated at the end of 2015 could be further deregulated, in nine out of ten cases fully. Thus, DG CONNECT steered NRAs to focus regulatory intervention where it is most needed (i.e. persisting bottlenecks) and to allow for commercial agreements and market developments to thrive and take over as soon as possible, generating in turn efficient investment incentives and enabling the right make-or-buy decisions to be made by all operators, to the benefit of all citizens.



Audiovisual Media Services Directive (AVMSD)

a media framework for the 21st century

#AVMSD #DigitalSingleMarket

Why?

For a better balance of rules



Context

Before



Average TV viewing time is decreasing.

Young people's TV viewing time has **dropped by 7.5%** and is **half** that of the average viewer

Now



Videos on the Internet



TV channels target more and more **foreign markets**



Industry faces **fragmented rules** on the share of European content across the EU



On average **31%** of **VoD services** available in one EU Member State are **established in another Member State**



Need for **more independence of regulators** from government & industry

Review of the Audio-visual Media Services Directive (AVMSD)

On 25 May 2016, the Commission adopted a new legislative proposal amending the **AVMSD** following a thorough REFIT evaluation. The assessment concluded that the country of origin principle brought legal certainty by subjecting media service providers in the EU to the legislation of one Member State only and has allowed for economies of scale for providers. This principle is thus maintained and facilitated in the proposal amending the AVMSD. The revision also aims at bringing the Directive in line with the new realities including the increasing use of video sharing platforms and on demand services. Viewers, and particularly minors, are indeed moving from traditional TV to the online world, while the regulatory burden is much higher on TV. In this context, the REFIT assessment identified scope for simplification and deregulation, specifically of certain rules on commercial communications applying to broadcasting services. The proposal therefore introduces flexibility when restrictions only applicable to TV are no longer justified in this area. At the same time, the draft Directive protects consumers in the on-demand and Internet world via a limited extension of the Directive to video-sharing platforms, while making sure that innovation will not be stifled. The evaluation found that the Directive had enhanced cultural diversity by effectively supporting the promotion, visibility and distribution of European works in the EU, but that there was scope for enhancing cultural diversity in on-demand services. The proposal therefore introduces a requirement for on demand services to reserve a 20 % share of European works in their catalogue and to give them prominence. Finally, the negative impact of the very diverse regulatory structures of national regulatory authorities on the effective application of the AVMSD has been addressed by reinforcing the independence of the national regulators.

Communication on Online Platforms

The Communication on Online Platforms of 25 May 2016 laid out for the first time a comprehensive analysis and policy-orientation related to intermediation platforms. In formulating its policy response to online platforms, the Commission will be guided by the

following four principles: a) a level playing field for comparable digital services; b) ensuring that online platforms behave responsibly to protect core values; c) fostering trust, transparency and ensuring fairness; and d) keeping markets open and non-discriminatory to foster a data-driven economy. The Communication was very well received by a broad range of stakeholders, including Member States. As one example, the German white-book on online platforms is closely aligned and based on the Commission position. Targeted follow-up is now under way.

Review of the Directive on Privacy and Electronic Communications

In line with the objective to increase trust in and the security of digital services, the Commission adopted, on 10 January 2017, a **proposal for a Regulation on Privacy and Electronic Communications** to provide a high level of privacy protection for users of electronic communications services and a level playing field for all market players. The proposal will enhance harmonisation of the rules for businesses and the level of protection of privacy and personal data for end-users in line with the new General Data Protection Regulation. The proposal was preceded by a REFIT evaluation, which concluded that the Directive remained relevant to meet the objective of ensuring privacy and confidentiality of communications but that some rules were no longer fit for purpose in light of technological, legal and market developments. In particular, the rules on security and notification of personal data breaches became redundant following the adoption of the General Data Protection Regulation. As regards confidentiality of communications, the rules have achieved their objectives vis-à-vis providers of electronic communication services, but have failed to ensure an adequate protection of citizens when they use over-the-top services (e.g. voice over IP or instant messaging), given that the Directive does not apply to such services. The evaluation also found that the consent rules on confidentiality of terminal equipment have not been fully effective as citizens receive an overload of requests to accept (tracking) cookies and, in some cases, are even exposed to cookies set without their consent. Finally, the Directive does not cover new tracking techniques. The proposal addresses the identified problems and ensures a sound, future proof legal framework.



Cybersecurity

The **Directive on security of network and information systems (the NIS Directive)** was adopted by the legislator on 6 July 2016 and entered into force in August 2016. Member States have 21 months to transpose the Directive into their national laws and 6 months more to identify operators of essential services. The Directive's objectives are: 1) increased national cybersecurity capabilities; 2) EU level cooperation and 3) security and notification requirements. EU cooperation is essential as cybersecurity does not have borders. Member States will be required to adopt a national NIS strategy defining the strategic objectives and appropriate policy and regulatory measures in relation to cybersecurity. Member States will also be required to designate a national competent authority for the implementation and enforcement of the Directive, as well as Computer Security Incident Response Teams (CSIRTs) responsible for handling incidents and risks.

The Directive creates a) a Cooperation Group between Member States to support and facilitate strategic cooperation and the exchange of information and to develop trust and confidence among Member States with the Commission providing the secretariat and b) a network of Computer Security Incident Response Teams (CSIRT Network), in order to promote swift and effective operational cooperation on specific cybersecurity incidents and sharing information about risks with ENISA providing the secretariat. Both the Group and the network took up their tasks in February 2017. The adoption of the NIS Directive and the starting of the Cooperation Group and CSIRT network are the essential pillars upon which future cybersecurity work will be based.

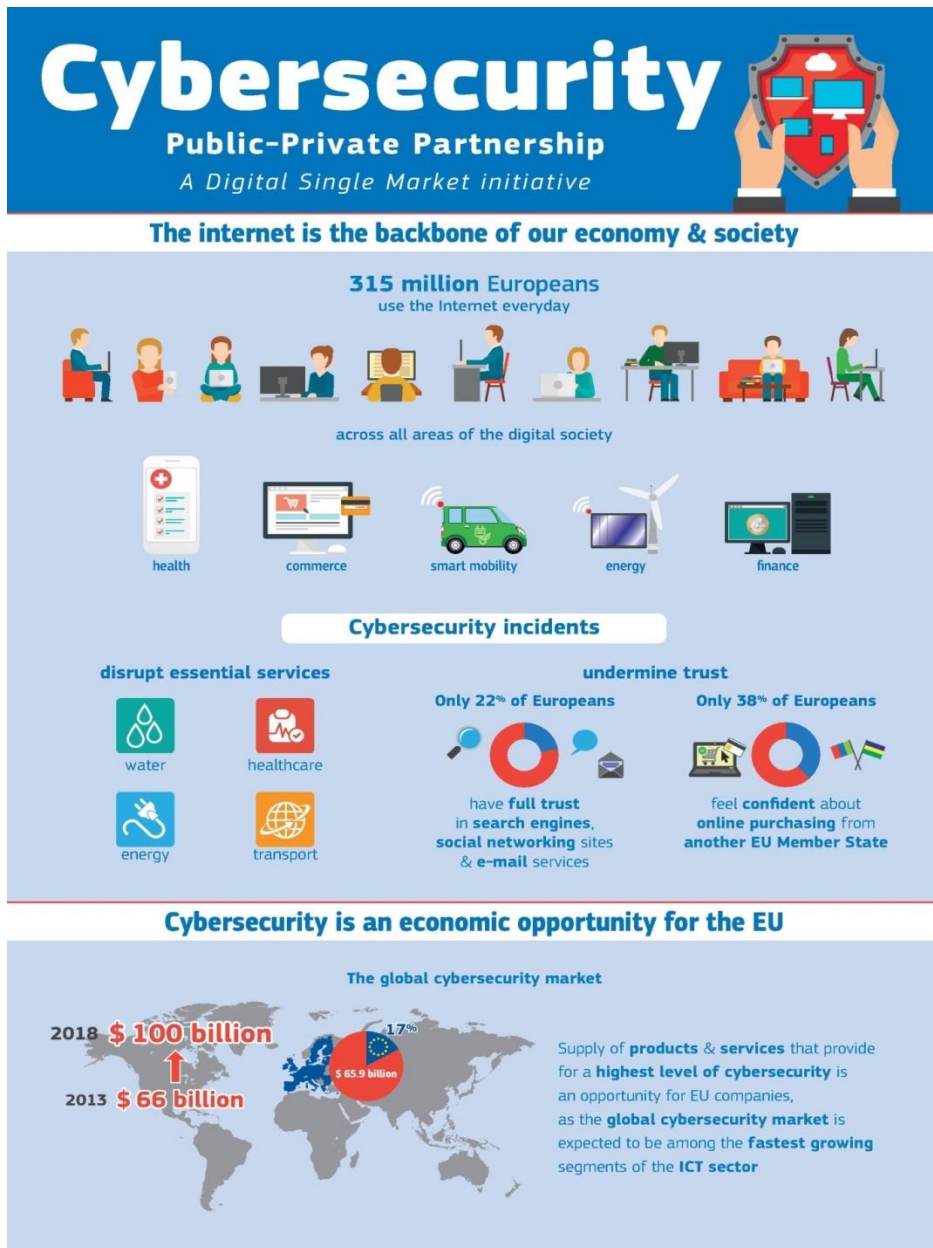
Cybersecurity is one of the Digital Service Infrastructures (DSI) that is currently funded under the Connecting Europe Facility (CEF) TELECOM programme. The overall objective of this DSI is the establishment and deployment of a core cooperation platform of cooperation mechanisms, along with the increase of the capabilities of national and/or governmental CERTs/CSIRTs, including CERT-EU, referred to as Generic Services. It is expected that Member States will use these mechanisms, in order to strengthen their own capacity building and EU cooperation. The cooperation mechanisms and the generic services will allow for more timely and effective collaboration at a European level.

The CEF Cybersecurity budget has been allocated towards two of the main pillars of the NIS Directive, which is towards both improving technical capabilities of the Member State CERTs/CSIRTs and enhancing EU level cooperation between them. In 2016, the Commission undertook a public procurement to build the core co-operation platform and launched, through INEA, a call for funding of generic services focused on national/governmental CSIRTs/CERTs.

The Commission announced in its Communication on **Strengthening Europe's Cyber Resilience System and Fostering a Competitive and Innovative Cybersecurity Industry** of 5 July 2016 a number of measures to strengthen EU's cybersecurity resilience and create conditions for the competitive cybersecurity industry in Europe. Measures include:

- Presentation of a "blueprint", outlining a coordinated approach to crisis cooperation in case of a large-scale cyber incident.
- An information hub will be created to pool relevant information and make it more easily available on request to all Member States which need it.
- On the market front, the Commission will look into a possible European security certification framework for ICT products and services in order to achieve a functioning single market in cybersecurity.

The Communication also outlines a number of other measures to ease access to finance for smaller businesses working in the field of cybersecurity and will explore different options.



The Commission also launched a new **public-private partnership on cybersecurity** to foster cybersecurity industry and better equip Europe against cyber incidents. The EU will invest EUR 450 million under Horizon 2020 in this partnership between 2017 and 2020. Cybersecurity market players, represented by the European Cyber Security Organisation (ECSO), are expected to invest three times more. This partnership also includes members from national, regional and local public administrations, research centres and academia. The aim of the partnership is to foster cooperation at early stages of the research and innovation process and to build cybersecurity solutions for various sectors, such as energy, health, transport and finance.

Safer internet

The Commission is providing coordination and leadership at the EU level to online safety activities in the Member States through the **Safer Internet CEF Digital Service Infrastructure** (BIK Portal) supported by CEF. The services are accessed and delivered either at EU level or via interoperable national Safer Internet Centres (generic services) which are supported through grants in 27 Member States plus Norway and Iceland. The platform provides an entry point to online tools and services to collaborate and exchange good practices in support of awareness-raising, and gathering and sharing of data of online child sexual abuse imagery. Some activities have an international outreach, such

as the Safer Internet Day, which is celebrated in over 100 countries on 6 continents. In 2016, up to 400 million people were reached worldwide through social media.

The Commission has also engaged in a new self-regulatory initiative, the **"Alliance to better protect children online"**, as part of its efforts to encourage industry to take measures to empower and protect minors online. In 2016, the Alliance has co-drafted a Statement of Purpose, which was endorsed by the members on the Safer Internet Day on 7 February 2017.

eIDAS implementation and uptake

The rules on trust services under the Regulation on electronic identification and trust services for electronic transactions in the internal market (eIDAS Regulation) became applicable to the 28 Member States on 1 July 2016. All Member States (but BG) have put in place and validated their National Trusted Lists and the Commission is operating the EU list of Trusted Lists. DG CONNECT is supporting the cooperation between Member States on operational experience on trust services via the eIDAS Expert Group which meets every quarter.

The possibility for voluntary recognition of eIDs exists since 2015, while recognition will become mandatory on 29 September 2018. 25 Member States have or are rolling-out national eID means that could be used to access on public services at national level. Member States have not initiated the notification process yet, but many of them are planning to do so in 2017. Preparatory work between the Member States is taking place in the context of the eIDAS Cooperation Network which has met 4 times so far.

DG CONNECT has also been working extensively with the private sector to promote the uptake of eIDAS, in particular with the banking/financial sector where eID and trust services may play a key role in meeting the sector-specific regulatory obligations on security and identification related to know-your-customer in digital on-boarding activities, as well as strong authentication of parties to electronic payment transactions. DG CONNECT worked with DG JUST and DG FISMA to ensure regulatory alignment in particular between the requirements under eIDAS, the Anti-Money Laundering Directive 4 and the revised Payment Service Directive. Close cooperation with the banks is also ongoing in the context of high-level roundtables on the issue of digital onboarding.

Work has started on the development of principles and guidance on eID interoperability for online platforms, as foreseen in the 2016 Communication on online platforms. Internal cross-DG cooperation continued in the frame of the eIDAS Interservice Interest Group to ensure alignment with other policy areas.

On 30 June 2016, the Commission set up an eIDAS Observatory to build a virtual community with the aim to foster a common understanding of the issues at stake relating to the implementation and uptake of the eIDAS Regulation.

Internet governance

With regard to internet governance, DG CONNECT supported the globalisation of the IANA function and ICANN accountability improvements resulting in a successful transition on 1 October 2016. This was made possible through intensive European coordination using the annual EuroDIG meeting in Brussels on 9-10 June, 3 meetings of the Member States high-level group, the preparations and coordination around the annual IGF meeting and by finalising the development of the Global Internet Governance Observatory (GIPO). The Commission financially supported the secretariat of the ICANN government advisory council and the secretariat of the IGF.

Specific objective 1.3:
The digital economy can develop to its full potential underpinned by initiatives enabling full growth of digital and data technologies.

The European Cloud Initiative

On 19 April 2016 the Commission adopted the **Communication on the European Cloud Initiative**, which proposes a European Open Science Cloud offering the services needed to work with the large volumes of information generated by the big data revolution. Elements of the Initiative such as the development of a comprehensive catalogue of e-infrastructure services are funded under Horizon 2020. The Initiative is underpinned by the European Data Infrastructure deploying the high-bandwidth networks and the supercomputing capacity necessary to effectively access and process large datasets. GÉANT – the European Research and Education network has been supported via two grants, one for the continued support for high-speed connectivity and networking services, the other for connectivity to Latin America. The supercomputing capacity has been financed with a grant for the next implementation phase of PRACE and support to public procurement of innovative HPC systems

Building a European Data Economy, including free flow of data

On 10 January 2017 the Commission adopted a **Communication on Building a European Data Economy**, which explores the following issues: free flow of data; access and transfer in relation to machine generated data; liability and safety in the context of emerging technologies; and portability of non-personal data, interoperability and standards. Together with the Communication the Commission has launched a public consultation. The initiative is widely supported by the business community across Member States, market sectors and segments. The European Council also adopted conclusions in December 2016 in favour of removing remaining obstacles within the Single Market. Following the publication of the Communication, the Commission will enter into structured dialogues with Member States and other stakeholders on justifications for and proportionality of data localisation measures.



Internet of Things (IoT)

The Digitising European Industry (DEI) initiative announced on 19 April 2016 a series of measures to digitise the industry through supporting systems and technologies, notably the Internet of Things, one of the priority areas for essential action to drive the digitalisation of the European economy. The IoT related actions deriving from this package aim at the creation of a) a Single Market for IoT; b) Thriving IoT ecosystem and c) Human-centred IoT. Implementing the IoT relevant actions listed in the DEI package together with on-going activities represent a consistent programme for advancing IoT in Europe.

Already in 2016, around EUR 100 mio were allocated to IoT large-scale pilots (LSPs), which will scale up IoT deployment in different sectors. The added value of these pilots includes the integration of advanced IoT technology, the contribution to and validation of emerging standards and new business models. IoT LSPs have been selected under the H2020 IoT Focus Area in five areas:

- a. Smart living environments for ageing well - to deploy IoT in innovative and user-led pilot projects capable of supporting and extending independent living at home for older adults.
- b. Smart Farming and Food Security - to develop IoT systems to gather all the individual data needed for monitoring, control and treatment on farms (e.g. located in a particular region).
- c. Wearables for smart ecosystems - to demonstrate innovative wearable solutions and services integrated in interoperable IoT ecosystems;
- d. Reference zones in EU cities - for showcasing and experimenting new citizen-centred IoT services in a series of cities to operate as reference zones.
- e. Autonomous vehicles in a connected environment - applying IoT for autonomous vehicles in a connected environment to showcase safe and highly and fully autonomous vehicles in various representative use case scenarios.

Digital Skills and Jobs Coalition

Following preparatory action, through H2020 funding and a group of Member State experts, the **Digital Skills and Jobs Coalition** was launched on 1 December 2016.

The first edition of the Digital Progress Report was presented in May 2016. It found considerable echo in Member States including national policies.

eGovernment Action Plan

The 2016-2020 eGovernment Action Plan was adopted on 19 April 2016. It has a vision for 2020 based on 7 underlying principles: digital-by-default, cross-border by default, once-only principle, inclusive by default; privacy and data protection; Openness and transparency by default, supported by 3 policy priorities. The policy priorities correspond to the ones identified in the DSM: 1) to modernise Public Administrations by using key digital enablers, 2) to achieve cross-border mobility through interoperability and 3) to facilitate digital interaction between administrations and citizens/businesses for high-quality public services. The preparation of this Action Plan has greatly benefited from the evaluation results of the previous Action Plan 2011-15, a public consultation, discussions with Member States, and discussions with other interested parties (citizens, businesses, organisations, administrations, etc.). The evaluations concluded that the previous Action Plan had met most of its objectives and demonstrated the importance of having common European goals in eGovernment. The Action Plan was seen as a "mobiliser" instrument for eGovernment policies in the Member States and a guiding framework for funding in the Commission. The potential benefits and important savings from eGovernment outweigh its costs and modernising the European public administrations through eGovernment remains relevant and brings important EU-added value.

The new Action Plan is dynamic and engages stakeholders via a Digital Platform to gather suggestions for further actions for administrations at all levels. It starts with a list of 20 individual actions distributed among the three policy priorities. Future actions will be added through the lifetime of the Action Plan, proposed either by the Commission or by external stakeholders (including Member States) through the eGovernment digital engagement platform.

The eGovernment Action Plan Steering Board, the Action Plan's main governance body, was established on 1 August 2016 by Commission Decision. It is composed of Member States' representatives responsible for their national eGovernment strategies and had its inaugural meeting on 28 September 2016.

Out of the nine CEF funded sectoral Digital Service Infrastructures (DSIs) four are presently reusing CEF building blocks, while four have committed to do so. In addition, some 30 DSIs not funded by CEF are reusing or have committed to reuse one or more building blocks. In line with the action 6 "The Commission will use the common building blocks such as CEF DSIs and follow the EIF" of the eGovernment Action Plan.

DSM links to the energy and transport sectors

The Commission's 2016 Energy Union Winter Package includes strong links with the DSM as digitalisation is acknowledged to be the path for a successful transformation of the energy system towards a more efficiency and sustainability. Emphasis was put on data access and data sharing to enable services provision and a functional energy market, on alignment of data formats and the appropriate selection of standards to ensure interoperability and a level playing field for all actors. Digital contributions were further made on i) a strategy for connected and automated mobility, ii) a common framework of rules to prevent and manage electricity crisis situations (complementing the NIS Directive and ensuring that cyber-incidents are properly identified as a risk), and iii) on the energy efficiency component, which promotes the concept of Smart Readiness and a Smartness Indicator to measure a building's capacity. This work was mainly accomplished through contributions to the cross-DG Smart Grids Task Force.

On transport, the DSM Communication "Building a European data economy" states, in particular, that the Commission intends to work with a group of interested Member States to create a legal testing framework for conducting experiments on the basis of harmonised rules on data access and liability. To allow for access to a sufficiently high volume of data, the trials should be based on 5G, operating in seamless co-existence with technologies already being deployed and under a complementarity principle.

Specific objective 1.4:
All Europeans enjoy effective world-class connectivity through future-proof and ubiquitous digital networks and service infrastructures as underlying basis for the digital society and data economy.

Related to
spending
programme(s):
CEF/EFSI/ESIF

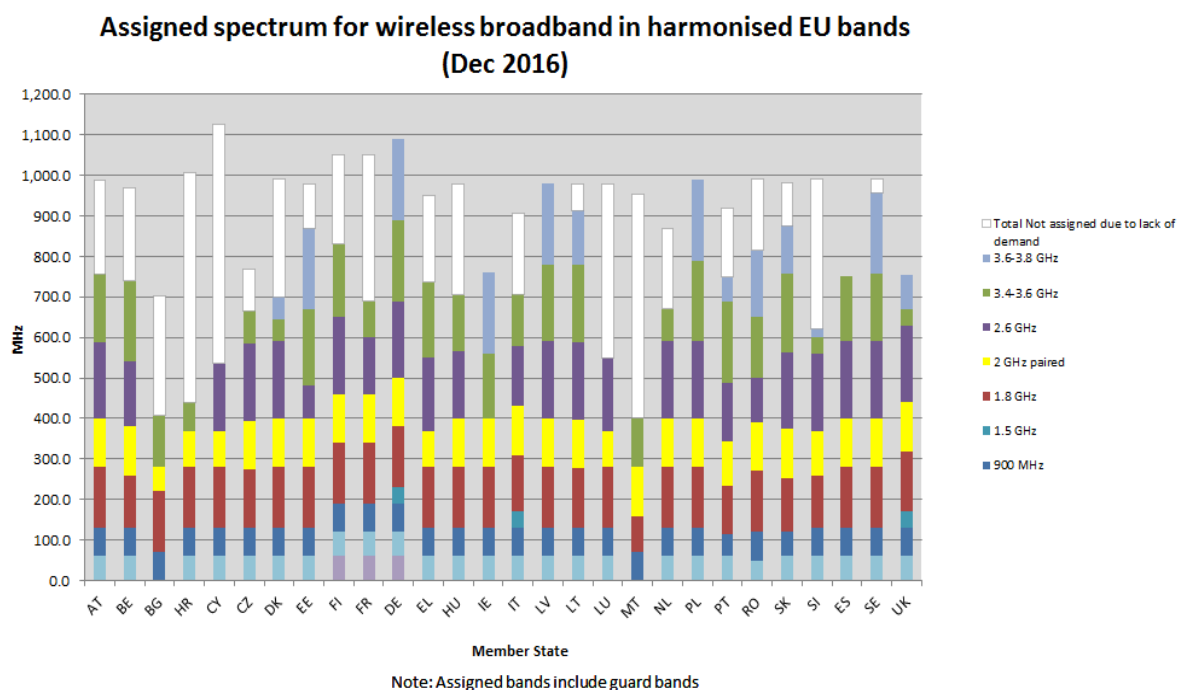
DG CONNECT brought together policy, regulatory and funding measures to improve connectivity through future-proof and ubiquitous digital networks and service infrastructures. Over 2016 connectivity of households improved as follows:

- Coverage of 30 Mbps and faster networks increasing to 76% as additional 6% of European households were covered,
- Connection to Fast Broadband increasing to 27% in July 2016. During the last 12 months additional 6% of European households were connected.

Given the increasing importance of wireless connectivity in the digital single market, sufficient and adequate harmonised spectrum for the provision of wireless broadband services is needed. In view of the target of 1200 MHz set by the Radio Spectrum Policy Programme, the Commission has been using the mechanisms provided by the Radio Spectrum Decision to identify spectrum for wireless broadband (licensed use), with EU harmonised technical conditions being already applicable to 1090 MHz and the necessary technical studies underway for the remaining bands.

The Commission adopted an Implementing Decision harmonising technical conditions in the 700 MHz band and a **legislative proposal for a balanced long-term approach for the use of the ultra-high frequency (UHF) band** (470-790 MHz), which includes on the one hand a common schedule for making the 700 MHz band effectively available for wireless broadband use under harmonised technical conditions and ensures, on the other hand, a long-term availability of the sub-700 MHz band for the distribution of audiovisual media services to the general public. In terms of actual assignments of spectrum, the Commission has ensured implementation of relevant spectrum provisions

at national level, leading to almost 740 MHz of spectrum, on average, assigned per Member State. The Commission's monitoring also provided the insight that the lack of demand for some of the harmonised frequency bands reported in the past is decreasing. The results of DG CONNECT's work on wireless broadband are summarised in the graph below.



Graph: Harmonised spectrum bands assigned for mobile broadband in the European Union

The Commission adopted on 14 September 2016 a **Connectivity package** of measures to ensure that everyone in the EU will have the best possible internet connection to participate in the digital society and economy, based on the widespread deployment and take-up of very high capacity networks, in rural and urban areas, and across all of society.

It includes a proposed set of strategic connectivity objectives for 2025 announced in the Communication "**Connectivity for a Competitive Digital Single Market – Towards a European Gigabit Society**":

- Gigabit connectivity for all socio economic drivers.
- All European households, to have access to at least 100 Mbps, upgradable to Gigabit speed
- All urban areas and all major terrestrial transport paths to have uninterrupted 5G coverage (intermediate objective for 2020: 5G connectivity to be available as a fully-fledged commercial service in at least one major city in each Member State).

The package also includes a proposal for a Regulation amending Regulations (EU) No 1316/2013 and (EU) No 283/2014 as regards the **promotion of Internet connectivity in local communities (WiFi4EU initiative)** aiming at providing financial incentives in favour of those public entities which want to provide free, high capacity local wireless connectivity in public spaces within their jurisdiction or at their sites of service.

DG CONNECT worked with DG ECFIN on the implementation of the Investment Plan supported by the European Fund for Strategic Investments (EFSI). DG CONNECT contributed to setting up a specific broadband infrastructure investment fund of EUR 500 million - the **Connecting Europe Broadband Fund**. DG CONNECT, in cooperation with the European Investment Bank, formally announced the launch of the Fund on 12 December 2016. Its operational launch is expected to take place in Q3 2017. On the

basis of at least EUR 500 million from public and private sources, including EUR 100 million contribution from CEF, with EUR 10 million committed to the fund in December 2016, the Fund is expected to trigger additional investments amounting to EUR 1 billion to EUR 1.7 billion in broadband deployment in less densely populated areas between 2017 and 2021.

With a view to facilitating the effective delivery of ESIF allocated for broadband projects (above EUR 6 billion), DG CONNECT, together with DG AGRI and DG REGIO, initiated the establishment of an EU network of Broadband Competence Offices. It aims at accelerating exchanges of best practices between Member States/regions and providing technical support on ways to invest effectively in broadband projects, whenever possible in combination with financial instruments. Concerning other streams of activity related to funding, DG CONNECT continued its work with the World Bank to provide technical assistance to local project promoters within the Connected Communities Initiative and reviewed National (and regional) Broadband Plans.

In terms of other activities related to the deployment of very high-capacity networks; DG CONNECT worked with Member States and other stakeholders to increase coherence and compatibility on all sources of data concerning the mapping of the quality of services of connectivity networks and provision. DG CONNECT also followed the implementation by Member States of the Cost Reduction Directive which provides measures to reduce the cost of deployment of very high-capacity networks.

Several developments show the progress with regard to future 5G deployment, with the 5G cPPP playing a pivotal role as it creates an industrial critical mass putting Europe at the 5G forefront in technological terms. Some results are set out in the following:

- The 5G PPP set out the "EU vision" for 5G, first unveiled at the Mobile World Congress 2015, complemented by the "5G empowering verticals" white paper established with multiple vertical industries (automotive, factories, health, etc.);
- The 5G Action Plan builds on the results of the former 5G Roundtable (i.e. an informed advisory board to the Commissioner) and proposes structured actions to get Europe on the 5G train by 2020.
- Following the identification of 5G pioneer bands, work on their usage conditions started in the European Conference of Postal and Telecommunications Administrations (CEPT) and with the preparation of the industrial trial roadmap.
- DG MOVE adopted a strategy for future Cooperative Intelligent Transport Systems (C-ITS) services for connected and automated driving which includes 5G connectivity.
- The 5G PPP created a EU research community around the 5G "trailblazers" resulting in a set of 5G strategic projects and set up working groups to address key policy challenges (scope/functional definition, spectrum, pre-standardisation, etc.) and to jointly address key technical issues such as the architecture and future radio technologies.
- The industry has validated a common approach towards 5G architecture. Technological results obtained notably in the 5G PPP context also allowed to define the basic features of the new 5G radio standard. The standardisation roadmap has been stabilised at the 3rd Generation Partnership Project (3G PP) level.
- The 5G PPP showed that leveraging factor of the first phase (WP 2014-15) is in the order of 15 to 30, much higher than originally targeted.
- In view of further professionalisation, the 5G Infrastructure Association (i.e. the private side of the cPPP) became an association with fee paying members, ensuring at the same time the sustainability of the association and its strategic membership.

- International cooperation showed the various options pursued by different regions with China emerging as having the 5G approach closest to the one of Europe and allowing to identify common actions to foster common standards and interoperability. Positions on 5G spectrum pioneer bands by the 5G PPP have largely been taken on board by the Radio Spectrum Policy Group (RSPG) opinion on pioneer bands. European positions have been instrumental to generate a critical mass of countries aligned with our positions (China, Brazil) although other regions (US, Korea) pursue different approaches. Substantial work therefore remains in the run up to the World Radiocommunication Conference 2019, when International Telecommunications Union has to take decisions on global or regional allocation of 5G bands.
- The 5G PPP also conducted a number of targeted actions in international cooperation, complementing the Commission's own international activities. These actions, which were conducted through industry-level agreements concluded with regional counterparts (industry associations) in South Korea, Japan, the US, China and soon Brazil, contributed largely to the global momentum and convergence toward a single set of interoperable standards for 5G connectivity worldwide.
- With a view to provide 5G access on a ubiquitous basis, work with the satellite industry has led to exploratory work between the terrestrial and satellite communities.



DG CONNECT continued, in collaboration with DG Translation and DG DIGIT, to develop the **CEF automated translation** building block which provides multilingual functionality to CEF Digital Service Infrastructures. It is already used by the European Data Portal, the Online Dispute Resolution and the e-Justice portal. DG CONNECT supported the European Language Resource Coordination in their outreach campaign in the Member States and CEF associated countries, which resulted in data starting to flow in from national stakeholders to support CEF Automated Translation. The Language Resource Board was set up involving stakeholders from all Member States and CEF associated countries.

Specific objective 1.5:
A modern, open and pluralistic society building on Europe's cultural diversity, creativity and respect of creators' rights and its values in particular democracy, freedom of expression and tolerance.

Related to spending programmes
 H2020, Multimedia
 Actions, Creative
 Europe MEDIA

In line with the Council Conclusions on **Europeana** adopted by the Council on 31 May 2016, the CEF 2016 WP was amended to change the funding instrument for the Europeana core service from grant-funding to procurement to ensure sustainability of the core service platform.

The **Web Accessibility Directive** entered into force on 22 December 2016. Around 80 million people in the EU are affected by a disability, and as the EU population ages, the figure is expected to increase to 120 million by 2020. The Directive lays down principles to follow when designing, constructing, maintaining and updating websites and mobile applications of public sector bodies in order to make them more accessible for the public, including people with disabilities. As the potential of the single market increases as a result of harmonising accessibility requirements, it will also make it easier for millions of citizens to have digital access to other digital products and services. A common approach to ensure web accessibility contributes to an inclusive digital society and to unlocking the benefits of the DSM for all European citizens.

DG CONNECT pursued a strategic dialogue with **Euronews** to streamline the bilateral relations and assess a series of announced production changes in the channel. The Commission received safeguards on the channel's commitment to multilingualism, EU content and a stronger digital presence. As a result, Euronews was invited to sign a new framework partnership agreement before the end of 2016 with a proposed duration of 4 years. The agreement had to be postponed until February 2017 to assess a new agreement between Euronews and the US news channel NBC Universal.

The **European Radio Network Euranet Plus** funded by the Commission promotes greater coverage of EU affairs. It is formed by 15 leading European radio stations (both public and private) from 15 EU countries and operates under an editorial charter which guarantees its full independence. It broadcasts in 14 European languages and has a potential audience of 20 Million daily listeners. In 2016 the contract was renewed, running till March 2017.

DG CONNECT signed two **agreements on data-driven news content**, following a call for proposals that focused on the production and dissemination of innovative forms of information covering EU topics making use of data techniques. These two projects, awarded to two different plurinational consortia, will be rolled out in 2017.

The **Cultural and Creative Sectors Guarantee Facility** was launched under the Creative Europe programme. This innovative market led instrument addresses the financing gap for SMEs in these sectors. The Delegation Agreement was signed by the Commission and the European Investment Fund in June 2016. The guarantees will facilitate access to finance for thousands of SMEs and may generate over EUR 600 million in loans for cultural and creative sectors. The facility has been very well received by the market and EIF already signed three transactions in France and Spain. New agreements are under preparation and should be signed soon. Romania, Belgium, Denmark and France applied and a number of financial institutions are actively soliciting them.

Relevant general objective:
A New Boost for Jobs, Growth and Investment

Industry is one of the pillars of the European economy – the manufacturing sector in the European Union accounts for 2 million enterprises, 33 million jobs and 60% of productivity growth. We stand on the brink of a new industrial revolution, driven by new-generation information technologies such as the Internet of Things (IoT), cloud computing, big data and data analytics, robotics and 3D printing. They open new horizons for industry to become more adventurous, more efficient, to improve processes and to develop innovative products and services. Recent studies estimate that digitisation

of products and services can add more than EUR 110 billion of annual revenue in Europe in the next five years.

European industry is strong in digital sectors such as electronics for automotive, security and energy markets, telecom equipment, business software, and laser and sensor technologies. Europe also hosts world-class research and technology institutes. However, high-tech sectors face severe competition from other parts of the world and many traditional sectors and small and medium enterprises (SMEs) are lagging behind. There are also large disparities in digitisation between regions.

Horizon 2020 is the biggest EU Research and Innovation programme ever with nearly EUR 80 billion of funding available over 7 years (2014 to 2020) – in addition to the private investment that this money will attract. It promises more breakthroughs, discoveries and world-firsts by taking great ideas from the lab to the market. Horizon 2020 is the financial instrument implementing the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness.

Specific objective 2.1:
Europe maintains its position as a world leader in the digital economy, where European companies can grow globally, drawing on strong digital entrepreneurship and performing start-ups and where industry and public services master the digital transformation.

Related to
spending
programme
Horizon
2020

Digitising European Industry

An initiative on **Digitising European Industry (DEI)** was adopted by the Commission on 19 April 2016. It aims at ensuring that every business in Europe, especially SME and the non-tech industry, wherever situated can fully benefit from digital innovations to create higher value digitised products, maximise efficiency of its processes and adapt its business models. It builds on, complements and ensures coordination between national initiatives such as "Industrie 4.0" (DE, AT); "Industria 4.0 (ES)", "Smart Industry" (NL) and "Industrie du future" (FR).

Both the Committee of the Regions and the Economic and Social Committee have produced positive opinions on the DEI initiative. The European Parliament (IMCO and ITRE committees) is currently developing an own-initiative report.

Five action lines were proposed and kick-started in 2016:

- Setting up a dynamic framework for cooperation between stakeholders including representatives of Member States initiatives, industry and social partners. A first roundtable with high-level representatives from national ministries in charge of digital strategy for industry and two meetings of specific working groups on digital innovation hubs and digital platforms took place in 2016.
- Investing EUR 500 million in digital innovation hubs (DIH) so that every industry, large or small, high-tech or not, can access the latest digital technologies.
- Ensuring leadership in next generation key digital technologies and industrial platforms aiming at focusing existing Public-Private Partnerships (PPPs) on the digitisation goals and leveraging the currently planned EUR 5 billion of support for PPPs in the digital sector with more than EUR 20 billion of additional co-investment from industry and EUR 15 billion from Member States and regions in the next 5 years.
- Providing a smart and future-proof legislative framework. A Communication on

"Building a European Data Economy" launched in January 2017 initiates a broad stakeholder consultation on regulatory issues of interest for industry such as data ownership and access to data or liability of autonomous systems.

- Preparing Europeans for the digital age. The Grand Coalition for Digital Jobs and Skills, aiming at creating a big digital talent pool in Europe and targets both ICT professionals and the workforce at-large, was launched in December 2016.

Reaching out to the EU's key partner countries, DG CONNECT has been active in influencing decision making in the global digital economy. In particular, a joint statement on a Digital Community was signed on 18 October 2016 between the Commission and the six Eastern Partner countries, joint statements in G7 and G20 were adopted in line with EU policies and steps to digitise EU development assistance was taken, amongst others through the Commission proposal for a new Consensus.

The **Communication on "Europe's next leaders: the Start-up and Scale-up Initiative"** published on 23 November 2016 is part of the strategy to make a deeper and fairer single market, creating opportunities for consumers and businesses and helping SMEs and startups to grow. Targeted follow-up is now under way under Startup Europe.

eHealth and smart living blueprint

One of the major show stoppers for the smart cities uptake is the lack of ICT city interoperability based on an open standards platform. This is also where DG CONNECT and its main stakeholders could add real value. The Commission started addressing the issue already in previous years but 2016 saw the biggest progress to date marked by the launch of the smart cities project Espresso, by attracting a substantial number of signatories to the demand (~90 cities) and the supply (~50 industries) sides of the sub-cluster on urban platforms of the EIP-SCC, and by the delivery by the above groups of key deliverables aiming at unleashing the process of implementing open standards based platform interoperability in smart city ICT-based solutions across Europe and beyond.

Once-only principle

The Commission launched a Large Scale Pilot to test the application of the once-only principle for businesses in the EU. The project (TOOP, funded under Horizon 2020) started on 1 January 2017 with the participation of 22 countries (20 Member States) and more than 50 organisations. The areas to pilot include business mobility, exchanges between business registers and maritime certificates. In addition, a Coordination and Support Action was launched, to discuss the possible application of the once-only principle for citizens in the EU. The project (SCOOP, funded under H2020) started in November 2016 to build a community and create a roadmap for citizen engagement and to foster co-creation of services using the once-only principle.

**Specific objective 2.2:
Europe's research finds investment opportunities for
potential technology breakthroughs and flagships, in
particular through the Horizon 2020 programme and
using Private Public Partnerships.**

Related to
spending
programme
Horizon 2020

Two strands of the Horizon 2020 programme support this specific objective, namely

- Excellent Science, which aims to reinforce and extend the excellence of the Union's science base and to consolidate the European Research Area to make the Union's research and innovation system more competitive on a global scale. DG CONNECT is involved in the financing of Future and Emerging Technologies in the Research Infrastructure parts.

- Industrial Leadership, which 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. DG CONNECT implements the Leadership in enabling and industrial technologies part.

a) Excellent Science - Future Emerging Technologies (FET)

FET operates through three complementary research funding schemes. The FET-Open scheme (managed by REA under the supervision of DG CONNECT) is instrumental to the launch and continuous renewal of a vast portfolio of high-risk research projects spanning across all technologies. The FET Proactive scheme (managed by DG CONNECT) operates through periodic thematic calls in cross disciplinary research domains of strategic importance to support cluster of projects and the related emerging thematic research communities. This scheme also supports research on next generation of exascale computing as part of the implementation of the contractual Public-Private Partnership on next generation High Performance Computing (HPC). DG CONNECT manages the two large-scale FET flagship projects, Human Brain Project and GRAPHENE, and devises a coherent, effective, light and flexible implementation strategy and appropriate governance for FET flagships, using existing funding instruments which combine and coordinate a variety of diverse financial contributions. By doing so, DG CONNECT ensures the best usage of public investment in the execution of the research policy roadmap.

FET Flagships are ambitious, highly-risky, long term and large scale research and innovation initiatives pursuing grand interdisciplinary scientific and technological challenges. The two **Flagships, Graphene and the Human Brain Project (HBP)**, have successfully completed their 'ramp-up phase' and are well progressing in delivering on their 10 year's journey under H2020. They are instrumental to the transition from scientific discoveries to technology development and ultimately to industrial take-up and market innovation in their respective domains. After 3 years of work, they are producing outstanding results: a thousand of top-class scientific publications, 40 prototypes delivered, 2 spin-out companies created and more than 280 concrete collaborations with industry resulting in 10 new products and 48 joint patent applications.

The experience with Flagships so far shows that they de facto define the global research roadmap for the field and set out a path for Europe to take a leading role. They give visibility to the EU investments, attract a lot of media attention and become natural poles of attraction for international collaboration. They create an unprecedented level of collaboration and community building in Europe that had not happened before. They help keep best talents in Europe and attract some of the best minds from all over the world.

In its European Cloud Initiative of 19 April 2016, the Commission announced a new **FET Flagship on Quantum Technologies** which is now under preparation. In addition, following a public consultation⁴ on new Flagships in early 2016, there is a broad support among Member States and key research stakeholders to prepare new flagships in areas of strategic importance for Europe.

With respect to **FET Proactive** which encourages researchers from different disciplines to work together on new technologies in specific domains, around 100 FP7 and 45 Horizon 2020 projects were managed by the DG. FET Proactive topics produced 210 proposals of which 12 with a total funding of EUR 77.8 million were selected. DG CONNECT also participated in the preparations for the European Innovation Council (EIC) Pilot.

⁴ <https://ec.europa.eu/futurium/en/content/fet-flagships>

b) Leadership in Enabling and Industrial Technologies (LEIT)

PPPs play a strategic role and are of key importance in the support to ICT. In total, seven PPPs are now supported entirely or partly through LEIT-ICT: 5G, Photonics, Robotics, Big Data, Factories of the Future, High Performance Computing and the Cybersecurity PPP which was launched in mid-2016. In addition to the contractual PPPs, DG CONNECT continues financing the Electronic Components and Systems for European Leadership (ECSEL) Joint Undertaking.

Current PPPs cover the whole digital value chain from components up to applications. They include PPPs in nano-electronic components and embedded software (ECSEL), photonics, robotics, 5G communications, high performance computing, big data, and cybersecurity. ICT contractual PPPs (cPPPs) aim at strengthening the competitive positioning of the ICT sector in Europe and streamlining ICT value creation across industrial sectors. They involve a combination of supply and demand measures and aim at linking stakeholders across the entire value chain, a necessary condition to accelerate take-up of research results and promote growth and jobs. In addition to traditional R&I activities, the cPPPs also include actions aimed at attracting investments for SMEs, encouraging entrepreneurship, addressing skills shortage, and developing a single market for goods and services. The ICT cPPPs also include actions aimed at coordinating strategies at EU, national and regional level to ensure complementarity and achieve optimal pooling of resources.

The Digitising European Industry Communication of April 2016 foresees focused investments in PPPs to reinforce the role of PPPs as coordinators of EU-wide R&I efforts, national initiatives and industrial strategies by focusing on key technologies and their integration, including through large-scale federating projects; a focus on cross-sectoral and integrated digital platforms and ecosystems including reference implementation and experimentation environments is also envisaged.

Micro- and nanoelectronics

ECSEL Joint Undertaking offers funding for research, development and innovation projects with unparalleled systemic and strategic impact for smart, sustainable and inclusive economic growth. In the ECSEL 2016 calls, 14 projects were selected for a funding of approximately 167 MEUR in European grants – and it is envisioned that the ECSEL Participating States will contribute approximately another 167 MEUR in national grants – out of total eligible costs of about 743 MEUR. Significant progress was made towards a balanced approach, covering and integrating micro- and nanoelectronics, embedded/cyber physical systems and smart system integration.

Projects selected by the ECSEL forerunners, ARTEMIS and ENIAC, continue to deliver concrete socio-economic results: for example, EMC², an ARTEMIS Innovation Pilot Programme involving close to 100 partners across Europe and a eligible total costs of 94 MEUR, is soon coming to an end. It focuses on a platform approach to handle mixed criticality applications (secure and non-secure computation in the same system). This is done under very difficult conditions of real-time, scalability and utmost flexibility, full scale deployment, through the entire lifecycle of the products using this technology.

The central aim of the project is to reduce the number of microcontrollers in systems which can currently run to 100s of processors. The project is looking at a number of cases and a medical imaging application work is underway to process brain scans within a few hours in order to make a diagnosis on the same day and avoid bringing the patient back for another hospital visit.

In the automotive market, there is a clear and accelerating trend towards providing connected and automated services at mass-market price points, as well as a technical trend towards component integration (multi-core systems and multi-standard radio technologies). This puts forward a tremendous challenge to ensure safety and security on cost-effective platforms which are open to outside innovations and which will require

dynamic adaptation. The application was successfully demonstrated over the car Ethernet as well as in WiFi communication between vehicles in platoons.

The continuation of the project is ensured through collaboration with the ECSEL project 3CCar. This is therefore an example of how ECSEL and its successors have funded projects which are delivering real world application for the benefit of the consumer: medical technology to improve patient comfort and reduce welfare system costs, as well as developments paving the way towards automated driving.

To contribute to the launch of **Important Projects of Common European Interest on micro- and nanoelectronics**, the Commission organised two Round Tables on the Electronics industry in Europe bringing together some 20 CEOs of the main organisations in the field (including research and technology organisations, SMEs), Member States and Regions. The discussions focused on the importance and value of the electronics industry for the whole of the economy, the necessity to have this industry very present in Europe, implying the need to have manufacturing of chips in Europe, the challenge and opportunity of digitizing Europe and the role of a strong electronics industry in Europe and the the need to work in strategic partnerships with the actors all along the value chain, and its necessity for the digital economy.

Next Generation Internet Initiative

In autumn 2016, DG CONNECT started preparing for the Next Generation Internet initiative, which has the aim to shape the future internet as a powerful, open, data-driven, user-centric, interoperable platform ecosystem. More than 10 workshops and focus groups, numerous expert consultations and an open consultation (EU Survey) were used to gather input for validation and fine-tuning of the initiative and short-listing of the most pressing issues to address, not surprising to include privacy, security, distributed architectures and new discovery mechanisms.

The open consultation carried out on FUTURIUM was rolled over in a continuous stakeholder engagement process. In this proactive dialogue with all possibly interested stakeholders, multi-disciplinary by nature, DG CONNECT included regular meetings with the National Science Foundation to promote collaboration between the two programmes.

FIWARE

The Future Internet PPP, under which FIWARE has been developed as open source alternative to proprietary platform developments ended as planned at the end of 2016. The Commission supported FIWARE's transition from an EU supported initiative into a professionally managed go-to-market strategy and the setup of the industry-led open FIWARE Foundation which will take over FIWARE as technology, product, brand and ecosystem of developers and users from the PPP projects for further development and market success. Beyond the four founding organisations, another top-level partner has subscribed along with dozens of fee-paying member companies.

Software quality and productivity

The R&I project portfolio in the area of software technologies have been enriched with 7 new grants with an overall funding of EUR 30 million. The focus of these projects will be to introduce advanced software development approaches and methodologies that would drastically increase development productivity and various dimensions of software quality and to propose innovative architectures addressing the need for evolvable, secure, context-aware and self-adaptive software in highly connected and interoperable systems. The expected impact of these actions is a significant and substantiated productivity increase in all aspects of software life-cycle and the ability to meet software quality levels required by a fast growing number of software-enabled products and services.

IoT contribution

In March 2015, the Commission together with IoT industry players launched the **Alliance for the Internet of Things Innovation (AIOTI)**, which aims to give EU the lead in the IoT field creating a dynamic European IoT ecosystem. AIOTI follows a European platform approach that entails cross-sectorial partnerships and collaboration, and that promotes a European strategy for IoT in response to international initiatives such as the Industrial Internet Consortium (IIC). The Alliance also offers an opportunity to discuss regulatory and legal obstacles to further IoT take-up, and to forge consensus on standardisation matters through the European Telecommunications Standards Institute (ETSI) and one M2M global standardisation partnership project. As planned, AIOTI has been legally established as a formal Association (non-profit organisation) under Belgian Law on 22 September 2016.

Active and Assisted Living

The **Active and Assisted Living Joint Programme** has supported research in ICT and ageing domain with support from Horizon 2020 since 2014. It has provided funding of the EC and Participating countries with a total value of EUR 113 million (~ EUR 53 million from the EU and ~ EUR 63 million from participating countries) with about the same amount of co-financing from the beneficiaries. Substantial part of the funding, EUR 45 million was directed to SMEs. This represents more than 50 funded projects involving more than 100 SMEs with a high level of involvement of the end users.

Glossary

AAL = Active and Assisted Living	FET = Future Emerging Technologies
AIOTI = Alliance for IoT Innovation	FP = Framework Programme
AVMSD = Audio-visual Media Services Directive	FTE = Full Time Equivalent
BEREC = Body of European Regulators in Electronic Communications	H2020 = Horizon 2020
CAS = Common Audit Service	HBP = Human Brain Project
CEF = Connecting Europe Facility	HPC = High Performance Computing
CIP = Competitiveness and Innovation Framework Programme	HR = Human Resources
cPPP = Contractual Public-Private Partnership	IAS = Internal Audit Service (Commission)
CSC = Common Support Centre	ICT = Information and Communication Technologies
CSIRT = Computer Security Incident Response Team	IoT = Internet of Things
DAE = Digital Agenda for Europe	IPCEI = Important Project of Common European Interest
DEI = Digitising European Industry	LEIT = Leadership in Enabling and Industrial Technologies
DESI = Digital Economy and Society Index	NIS = Network Information Security
DG = Directorate-General (Commission)	NRA = National Regulatory Authorities
DMO = Document Management Officer	PBI = Project Bond Pilot Initiative
DSI = Digital Service Infrastructure	PPP = Public-Private Partnership
DSM = Digital Single Market	PRACE = Partnership for Advanced Computing in Europe (the pan-European high performance computing research infrastructure)
EASME = Executive Agency for Small and Medium-size Enterprises	PSP = Policy Support Programme (CIP ICT)
ECA = European Court of Auditors	Q = Quarter
ECSEL = Electronic Components and Systems for European Leadership	R&D = Research and Development
EDPR = European Digital Progress Report	R&I = Research and Innovation
EFSI = European Fund for Strategic Investments	RAFS = Research Anti-Fraud Strategy
EIB = European Investment Bank	REA = Research Executive Agency
EIP = European Innovation Partnership	REFIT = Regulatory Fitness and Performance programme
ENISA = European Union Agency for Network and Information Security	SMEs = Small and medium-sized enterprises
ETSI = European Telecommunications Standards Institute	SRM = Stakeholders Relations Management
ESIF = European Structural and Investment Funds	SWD = Staff Working Document
	UHF = Ultra High Frequency

2. ORGANISATIONAL MANAGEMENT AND INTERNAL CONTROL

This section answers to the question *how* the achievements described in the previous section were delivered by the DG. This section is divided in two subsections.

The first subsection reports the control results and all other relevant information that support management's assurance on the achievement of the financial management and internal control objectives. It includes any additional information necessary to establish that the available evidence is reliable, complete and comprehensive; appropriately covering all activities, programmes and management modes relevant for the DG.

The second subsection deals with the other components of organisational management: human resources, better regulation principles, information management and external communication.

2.1 Financial management and internal control

Assurance is an objective examination of evidence for the purpose of providing an assessment of the effectiveness of risk management, control and governance processes.

This examination is carried out by management, who monitors the functioning of the internal control systems on a continuous basis, and by internal and external auditors. Its results are explicitly documented and reported to the Director-General. The reports produced are:

- The reports submitted by the Directors, which include the outcome of the internal control monitoring taking place in each Directorate;
- The reports from Authorising Officers in other Directorates-General managing budget appropriations in cross-delegation;
- The reports on control results from entrusted entities in indirect management as well as the result of the Commission supervisory controls on the activities of these bodies;
- The contribution of the Internal Control Coordinator (ICC), including the results of internal control monitoring at Directorate-General level;
- The results of the ex-post audits;
- The observations and recommendations reported by the Internal Audit Service (IAS);
- The observations and recommendations reported by the European Court of Auditors (ECA).

This section reports the control results and other relevant elements that support management's assurance. It is structured into (a) Control results, (b) Audit observations and recommendations, (c) Effectiveness of the internal control system, and resulting in (d) Conclusions as regards assurance.

2.1.1 Control results

This section reports and assesses the elements identified by management that support the assurance on the achievement of the internal control objectives⁵. The DG's assurance building and materiality criteria are outlined in Annex 4. Annex 5 outlines the main risks together with the control processes aimed to mitigate them and the indicators used to measure the performance of the control systems.

DG CONNECT expenditure is managed under direct and indirect management. Amongst these items, the research programmes represent the most important part in quantitative terms. This explains that this report will mostly focus on this part of the budget.

This report will present the elements supporting the assurance on the internal control objectives in two different segments: direct budget implementation by DG CONNECT and budget implementation tasks entrusted to other DGs and entities.

Budget implemented by DG CONNECT (in EUR)	
1- Research Programmes	
H2020	1.229.298.085
FP7	300.713.198
CIP	32.334.832
Other measures and Pilot projects	2.446.907
Administrative expenditure	8.291.491
2- Non Research Programmes	
Communication Actions, Creative Europe, Connecting Europe Facility, single market policy other programmes and Pilot Projects	61.115.392
Administrative expenditure	2.295.249
Budget implementation tasks entrusted to other DGs and entities (in EUR)	
1- Implementing Bodies	
ECSEL	263.579.179
AAL Association	9.775.186
BEREC Office	4.246.000
ENISA	10.397.932
2- Cross & Co delegations to AGRI, DIGIT, EMPL, ENER, ESTAT, GROW, JUST, OIB, OP & RTD	77.043.204
TOTAL	2.001.536.654

⁵ Effectiveness, efficiency and economy of operations; reliability of reporting; safeguarding of assets and information; prevention, detection, correction and follow-up of fraud and irregularities; and adequate management of the risks relating to the legality and regularity of the underlying transactions, taking into account the multiannual character of programmes as well as the nature of the payments (FR Art 32).

Furthermore, DG CONNECT was a parent DG for four executive agencies (see below table). These executive agencies processed operational payments for a value of 209,08 MEUR linked to DG CONNECT activities.

Entity	Operational payment implemented directly by the EAs linked to DG CONNECT activities (in EUR)
Innovation and Networks Executive Agency (INEA)	21.446.963
Research Executive Agency (REA)	189.445
Executive Agency for Small and Medium-sized enterprises (EASME)	89.429.621
Education, Audiovisual and Culture Executive Agency (EACEA)	98.011.357
TOTAL	209,08

Conclusion

DG CONNECT has systematically examined the available control results and indicators, including those aimed to supervise entities to which it has entrusted budget implementation tasks, as well as the observations and recommendations issued by internal auditors and the European Court of Auditors. These elements have been assessed to determine their impact on the management's assurance as regards the achievement of the various internal control objectives mentioned above.

For FP7, as the estimated residual error rate of the financial operations under FP7 is above 2%, which is the materiality criterion for this programme, DG CONNECT, in accordance with the other members of the Research Family, will maintain a reservation for FP7 expenditure.

For the financial operations under CIP, the results of the ex-post audits show that the residual error rate is also above 2%. As it is expected that the 2% residual error rate target at the end of the programming period for CIP ICT PSP will not be attained, a reservation on CIP is also maintained for the reporting period.

Considering that a simplification of the existing legislative framework for FP7 and CIP is not an option and that the legality and regularity objective has to be balanced with other objectives such as the attractiveness of the programmes and the cost of controls, it is unlikely that the error rate will further reduce without affecting the effectiveness of the programme.

For H2020, a first indication for the control results based on a representative sample is expected for the next annual activity report. The Commission's proposal for the Regulation establishing the H2020 framework programme⁶ states that the Directorates General charged with the implementation of the research and innovation budget will establish a cost-effective internal control system that will give reasonable assurance that the risk of error over the course of the multiannual expenditure period is, on an annual

⁶ COM(2011) 809/3 Proposal for a Regulation of the European Parliament and of the Council establishing Horizon 2020 – the Framework programme for Research and Innovation (2014-2020), see point 2.2, pp 98-102.

basis, within a range of 2-5 %, with the ultimate aim to achieve a residual level of error as close as possible to 2 % at the closure of the multi-annual programmes, once the financial impact of all audits, correction and recovery measures have been taken into account." Consequently, without other elements allowing an assessment of the level of errors, the detected error rate will be estimated, in a conservative estimate, to a range of 2-5%. The residual error rate can neither be calculated following the formula set in Annex 4, as no information is yet available relating to the level of systemic errors. Taking into account the FP7 experience, it is likely that with the usual correction mechanisms, this residual error rate will be close to 2%.

As regards the budget implemented by other DGs and entities, the cross subdelegated AODs, the executive agencies INEA, REA, EASME and EACEA, the ECSEL Joint Undertaking, the Active and Assisted Living Association, the decentralised agencies BEREC Office and ENISA as well as the EIB/EIF, we are well aware of the reservations of REA, EASME and EACEA and the issues concerning the ECSEL JU with respect to the definition of an error rate and do not consider that they represent a failure of our supervision. However, DG CONNECT follows a prudent approach and includes the related FP7 budget from Artemis/ENIAC ECSEL and the AAL Association within the scope and exposure of its reservation for FP7.

From DG CONNECT's own monitoring and supervision work, which includes regular contacts/representation or at least desk reviews of relevant management reports and audit reports, DG CONNECT has not identified any other issues which could impact the management's assurance and there are no indications that the reporting would not be reliable or complete. For none of the management / control segments any reputational risk was identified by senior management for the reporting period which could have a significant impact on assurance on the achievement of the internal control objectives.

Based on the above, in conclusion, DG CONNECT's senior management has reasonable assurance that, overall, suitable controls are in place and working as intended. Risks are being appropriately monitored and improvements and reinforcements have been implemented where necessary.

The table below presents the control results in summary.

DG CONNECT	Scope: payments made (MEUR)	Conclusion on the Internal Control Components				Information from auditor's available	Reservations
<i>ABB or other activity-level</i>	<i>as per AAR annex 3, table 2</i>	Conclusion on "Legality and Regularity"	Conclusion on "Efficiency and cost- effectiveness s"	Conclusion on "Fraud prevention and detection"	Conclusion on on other Incos		
Budget implemented by DG CNECT							
H2020	1229,3	Positive, with the exception of FP7 for which the res. error rate is 2,86% and CIP for which the error rate is 8,92%	Positive TTG = 214 days, TTP = 97,6% on time	Positive	Positive	Yes	YES, for FP7 and CIP
FP7	300,71						
CIP	32,34						
Other Measures and Pilot projects	2,45						
Administrative Expenditure	10,59						

Communication Actions, Creative Europe, Connecting Europe Facility, single market policy other programmes and Pilot Projects	61,12						
TOTAL	1636,5						

Budget implementation tasks entrusted to other DGs and entities							
1- Implementing Bodies							
EIB - Project Bond Pilot Initiative (PBI)	0						
Ecsel	263,58	Positive, with the exception of the relevant payments to Ecsel and AAL which are covered in the FP7 reservation	Positive	Positive	Positive some specific remarks on Ecsel	YES (in particular see 2.1.1 Budget entrusted to other DGs and entities Ecsel)	Relevant payments to Ecsel, and AAL are covered in the FP7 reservation)
AAL	9,78						
Berec office	4,25						
Enisa	10,4						
2- Cross subdelegations							
AGRI, DIGIT, EMPL, ENER, ESTAT, GROW, JUST, OIB, OP, RTD	22,55					NO	NO
Administrative Expenditure	54,49						
TOTAL	77,04						

TOTAL	2001,54
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2.1.1.a: Direct budget implementation by DG CONNECT

Coverage of the Internal Control Objectives and their related main indicators

Control effectiveness as regards legality and regularity

DG CONNECT has set up internal control processes aimed to ensure the adequate management of the risks relating to the legality and regularity of the underlying transactions, taking into account the multiannual character of programmes as well as the nature of the payments concerned.

For the Research programmes, the main legality and regularity indicator is the error rate detected by ex-post audits. Because of its multi-annual nature, the effectiveness of the control strategy can only be fully measured and assessed in the final stages of the FP, once the ex-post control strategy has been fully implemented and systematic errors have been detected and corrected.

The general control objective, as stated in Annex 4 to this report, is to ensure for the Seventh Framework Programme that the residual error rate, i.e. the level of errors which remain undetected and uncorrected, does not exceed 2% by the end of the FP's management cycle. As for Horizon 2020, the Commission's proposal for the Regulation

establishing the H2020 framework programme⁷ refers to a risk of error over the course of the multiannual expenditure period, on an annual basis, within a range of 2-5 %, with the ultimate aim to achieve a residual level of error as close as possible to 2%.

The question of being on track towards this objective is to be (re)assessed annually, in view of the results of the implementation of the ex-post audit strategy and taking into account both the frequency and importance of the errors found as well as a cost-benefit analysis of the effort needed to detect and correct them.

For Horizon 2020, the Common Audit Strategy, adopted on 22 March 2016 covers all the implementing bodies.

For FP7, the Common Audit Strategy and its results cover the DGs and the Executive Agencies.

For the CIP ICT PSP and Safer Internet programmes, DG CONNECT implements a dedicated multi-annual audit strategy. These audits are performed by an external audit firm contracted by DG CONNECT.

This report will not further address the management of the financial operations under non-research programmes (CEF, Safer Internet) because they represent limited amounts.

H2020

H2020 is in its starting phase and given the stage of the programme lifecycle, very few cost claims were received by the services before the second half of 2016. Consequently, the first significant sampling for the Horizon 2020 Audit campaigns was made at the end of 2016: a Common Representative Sample (CRS), a Common Risk Sample and an Additional Sample⁸ have been selected. Together with some minor sampling in May 2016, this represents, overall, 557 participations being audited. The first indications for the error rates (detected, representative and residual) are expected for the next annual report.

For the purpose of the current report, the error rate affecting the payments made under Horizon 2020 programme can only be a preliminary estimation.

The Financial statement accompanying the Commission's proposal to the legislative authority for the Horizon 2020 regulation states: *"The Commission considers therefore that, for research spending under Horizon 2020, a risk of error, on an annual basis, within a range between 2-5 % is a realistic objective taking into account the costs of controls, the simplification measures proposed to reduce the complexity of rules and the related inherent risk associated to the reimbursement of costs of the research project. The ultimate aim for the residual level of error at the closure of the programmes after the financial impact of all audits, correction and recovery measures will have been taken into account is to achieve a level as close as possible to 2 %."*

Without other elements allowing an assessment of the level of errors, the detected error rate will be estimated, in a conservative estimate, to a range of 2-5%. The residual error rate can neither be calculated following the formula set in Annex 4, as no information is yet available relating to the level of systemic errors. Taking into account the FP7 experience, it is likely that with the usual correction mechanisms, this residual error rate will be close to 2%.

⁷ COM(2011) 809/3 Proposal for a Regulation of the European Parliament and of the Council establishing Horizon 2020 – the Framework programme for Research and Innovation (2014-2020), see point 2.2, pp 98-102.

⁸ This last sampling accommodates special needs of certain stakeholders with regard to audit coverage and selection method.

Some elements have been introduced in the legislation that will increase the risks in the programme. Firstly, there is the target for an increased participation of Small and Medium-Sized Enterprises (SMEs). As we experienced with FP7, SMEs have an error rate which is significantly higher than the rate for non-SMEs. This is not entirely surprising, but the involvement of SMEs is vital to increasing innovation and boosting jobs in the EU. However, it does mean that an increased participation of SMEs increases risk.

Secondly, Horizon 2020 includes a commitment to involving new participants in the Programme. However, experience demonstrated that new participants also have an error rate which is significantly higher than recurrent participants. New participants, though a positive element for the European research landscape, increase risk.

Furthermore, during the discussions on the legislative package for Horizon 2020, provision was made for support to participants with large research infrastructures. This provision should support some of the major European research organisations, who might otherwise have had difficulty funding their advanced research infrastructure, but does insert an additional complication into the rules, and with it an increased risk. The limitation of additional remuneration to EUR 8000 per annum also brings an increased level of risk of error.

The Commission takes actions to try to mitigate the risk arising from these four new elements (guidance, training, ex-ante assessments for large infrastructures, limits on additional remuneration) but these only mitigate, not avoid, the risks.

Overall, DG CONNECT believes that residual error rates should be reduced under Horizon 2020 as a result of the simplifications introduced in the legislation. Nevertheless, it underlines that the level of reduction in Horizon 2020 is subject to the effect of elements introduced during the legislation which, although perfectly understandable in terms of improving support for European research and innovation, may have the effect of increasing risks.

In addition, attempts in the past to achieve the 2% target caused a number of unexpected and/or undesirable side-effects. Among beneficiaries and the legislative authorities, the feeling became strong that the control burden has become excessive. This increases the risk of lowering the attractiveness of the Union's Research programme, thereby negatively affecting Union research and innovation.

There is, however, an acceptance among stakeholders and institutions that an approach solely focussed on the achievement of a 2% target for legality and regularity may not be appropriate. There are other objectives and interests, especially the success of the Union's research policy, international competitiveness, and scientific excellence, which should also be considered. At the same time, there is a clear need to manage the budget in an efficient and effective manner, and to prevent fraud and waste.

Taking these elements in balance, and in the light of the results of the FP7 audit campaign, DG CONNECT considers that its overall control strategy ensures that trust, control and other policy objectives are kept in balance. Aiming to achieve a residual error rate of 2% at all costs is not a viable approach.

For this reason, Article 23 of the Horizon 2020 Regulation states: *"The control system shall ensure an appropriate balance between trust and control, taking into account*

administrative and other costs of controls at all levels, so that the objectives of Horizon 2020 can be achieved and the most excellent researchers and the most innovative enterprises can be attracted to it". It also states that audits of expenditure on indirect actions shall be carried out in a coherent manner "to minimize the audit burden for participants".

Seventh Research Framework Programme (FP7)

Residual Error rate

The audit activity on the FP7 Research funding is regulated at global "research family" level by the common FP7 Audit Strategy. The strategy was formally adopted by the Commission research services in October 2009 and updated in 2012, 2014 and 2015.

The assurance process is based on the error rate stemming from a Common Representative audit Sample (CRaS) for the research family. The following principles apply:

The sampling is done on a population consisting of all cost statements received by all Commission Research Services;

The monetary unit sampling (MUS) technique is used for selecting the cost statements to be audited (on the basis of the EC-share of the amount claimed).

The common FP7 Audit Strategy also defines the principle of extension of the audit findings, which consists in correcting systematic errors noted in the audits also in the non-audited periods and other projects of the same beneficiary.

The main indicator which flows directly from the audit activity and serves as basis for evaluating the legality and regularity of the payments is the residual error rate which represents the estimated level of error remaining in the payments' population after correcting/recovering adjustments resulting from ex-post audits. The residual error rate, on a multi-annual basis, is the extrapolated level of error remaining after corrections/recoveries undertaken by Commission services following the audits that have been made. The calculation of the residual error rate, as shown in **Annex 4**, is based on the following assumptions:

- (1) all errors detected will be corrected;
- (2) all non-audited expenditure subject to extension of audit findings is clean from systematic material errors so that the residual error rate can be estimated to be equal to the non-systematic error rate.

The residual error rate develops over time and depends on the assumptions set out above. DG CNECT would like to underline that this indicator is reliable and acceptable for the purposes for which it was intended, i.e. as a legality and regularity indicator on the progress made, through its ex-post audit strategy, in dealing with errors over a multi-annual basis. However, it remains an estimate as long as not all cost claims have been received and not all cases of extension of audit findings have been fully implemented yet.

The representative error rate calculated based on the common sample is -5,03%. It is based on 398 cost statements for which the audit is completed (82% out of a sample of 486). The remaining cases are still subject to contradictory procedures with the beneficiaries; consequently, the Common Representative Error Rate may still develop.

The residual error rate amounts to 2,86% which is above the 2% materiality criterion. This residual error rate would then lead to an amount at risk of 28,56 MEUR. This rate may increase slightly following the development of the Common Representative Error Rate.

These results already include the partial results of the third and last Common Representative Audit Sample (launched in 2016). They are concordant with the general expectation that the Common Representative Error Rate resulting from audits of FP7 will be around 5% at the end of the programme. The residual error rate for DG CONNECT is expected at around 3%.

These amounts do not necessarily mean that there is a loss to the Community budget. Many of the projects spend more than the capped budget, and so the real loss to the Community budget will be lower than when estimating the financial impact by using the error rates above.

As the residual error rate exceeds the established materiality level of 2%, DG CONNECT will maintain the reservation already expressed in the 2015 annual activity report.

A third common representative audit sample has been launched which will contribute to further reduce the residual error rate.

Audit coverage

As of 31.12.2016, the share of the directly audited requested contribution amounts to 8,7%. When the extension of the audit findings' effect is taken into account together with audits on DG CONNECT's beneficiaries by other research services, the coverage increases to 70,7%.

In 2016, 118 audits were closed (including 108 by the Common Audit Service) covering 84 MEUR. On a cumulative basis, 797 audits were closed covering 675 MEUR.

Implementation of audit results

The table below provides the results of the implementation of FP7 direct audits (43,8 MEUR adjusted).

Year	Audit activity		Results in favour of the EC		Open for implementation		Implemented (registered in contract management system)						TOTAL (in terms of participations)	
							Offset from payment		Recoveries		Waived (amounts below materiality criteria)		Implemented	
	# audits closed	# participations audited	# participations	Adjustments in EUR	#	EUR	#	EUR	#	EUR	#	EUR	98%	2%
FP7 Total	797	1.631	835	43.785.829	17	1.134.240	294	13.560.285	438	26.536.112	84	2.555.190		

From which CAS	232	386	157	6.181.501	10	332.931	24	1.128.447	121	4.711.168	2	8.954	6%	94%
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The level of implementation of ex-post audit results is of 94%.

For FP7, the amount of corrections implemented by extrapolation of systemic errors presented, at the end of December 2016, was a cumulative figure of EUR 5,5 million. This is EUR 1,4 million more compared to the end of 2015. The current implementation rate of extrapolations (expressed in number of cases) for FP7 on a cumulative basis is 94%.

ICT Policy Support Programme of the Competitiveness and Innovation framework Programme (CIP ICT PSP).

In order to ensure audit coverage on this part of the budget, a specific audit strategy was defined in 2012 and updated in 2015 and 2016.

CIP ICT PSP applies the same materiality criteria and principles as FP7. These criteria, principles and the methodology to calculate the error rate are laid down in annex 4. The results of the ex-post audits performed on CIP ICT PSP projects show a detected error rate of 9,56% for 2016 and a cumulated residual error rate of 8,92%, which is above the 2% materiality criterion. This residual error rate would lead to an amount at risk of 8,43 MEUR.

However, those error rates should be considered with caution. Contrary to FP7 for which the calculations of the error rates are based on the audits of nearly 400 cost statements, the CIP error rate calculations are based on a number of audits (75 audits at the end of 2016) which is too limited to be considered as representative for the whole population. In 2016, the 5 audits with the highest adjustments account for 55% of the total amount adjusted and 4,74 % points of the detected error rate. Without these 5 audits, the detected error rate would be of 4,82% which is similar to the FP7 representative error rate.

Given the similarity of the control systems of the FP7 and CIP ICT PSP programmes, such error rate would be plausible.

Nevertheless, it is usual that towards the end of the implementation of the audit strategy, the error rates slightly increases. This is due to the fact that audits with high adjustments generally require more time to be closed than those without or with small adjustments.

Given that the residual error rate calculated for the CIP ICT PSP programmes is higher than 2% and that it is not expected that the 2% residual error rate target at the end of the programming period for CIP ICT PSP will not be attained, a reservation on CIP is maintained for the reporting period.

An in depth analysis of the 10 CIP ICT PSP audits with the largest audit adjustments shows that the largest contribution to the overall level of error comes from:

- Incorrectly calculated hourly rates/ productive hours;
- Non-compliance with the requirements for the time recording;
- Non-compliance with the rules for using consultants.

The above mentioned errors are responsible for 52% of the total adjustment of those 10 audits.

It should be noted that, under H2020, the eligibility rules linked to these three areas have been simplified. Further, in the financial statement accompanying the proposal for the H2020 Regulation, the Commission estimated that, considering the costs of controls, the simplification measures proposed to reduce the complexity of rules and the related inherent risk associated to the reimbursement of costs of the research project, a risk of error, on an annual basis, within a range between 2-5 % was a realistic objective, while the ultimate aim for the residual level of error at the closure of the programmes after the financial impact of all audits, correction and recovery measures remained to achieve a level as close as possible to 2 %.

Audit coverage

The share of the directly audited requested contributions, including risk based audits, amounts to 8,2%. On a cumulative basis, 98 CIP ICT PSP audits (105 if we include audits done by the European Court of Auditors) were closed covering 47,1 MEUR. The number of closed audits in 2016 (71) is in line with the target set in the strategy. In 2017, an additional 40 audits will be closed.

Implementation of audit results

The table below provides the results of the implementation of CIP ICT PSP direct audits.

Year	Audit activity		Results in favour of the EC		Open for implementation		Implemented (registered in contract management system)						TOTAL (in terms of participations)	
							Offset from payment		Recoveries		Waived (amounts below materiality criteria)		Open	Implemented
	# audits closed	# participations on audited	participations	Adjustments in EUR	#	EUR	#	EUR	#	EUR	#	EUR		
CIP Total	105	180	117	6.151.564	1	24.490	22	466.480	93	5.660.238	1	356	0%	100%

The level of implementation of ex-post audit results amounts to 100%. For CIP, the amount of corrections implemented by extrapolation of systemic errors presented, at the end of December 2016, was a cumulative figure of 0,8 MEUR. This is 0,14 MEUR more compared to the end of 2015. The current implementation rate of extrapolations (expressed in number of cases) for CIP is 54,83%. This implementation rate is low at the end of 2016 as many audits were closed in 2016 (45 audits closed in 2016), but the extrapolations will take place in 2017.

Efficiency and Cost-effectiveness of controls

Based on an assessment of the most relevant key indicators and control results, DG CONNECT has assessed the cost-effectiveness and the efficiency of the control system and reached a positive conclusion. As regards cost-effectiveness, the conclusion is based on an 'overall cost-effectiveness of control'- indicator of 1,48% for direct management and an 'overall cost-effectiveness of control'- indicator of 0,33% for indirect management. As regards efficiency, this conclusion is based on the time-to-inform, time-to-grant and time-to-pay indicators.

This section gives details on the efficiency related indicators and secondly on the overall cost-effectiveness of the control systems.

The control system is divided into four distinct stages – programming, evaluation and selection of proposals (stage 1), contracting (stage 2), monitoring the execution of the projects (stage 3) and ex-post controls and recoveries (stage 4). Key indicators have been defined for each stage of the process.

Stage one: Programming, evaluation and selection of proposals

The first stage concerns the preparation and the publication of the calls for proposals and the subsequent evaluation of the received proposals. The objective of this stage is to ensure that the most promising projects for meeting the policy objectives are among the selected proposals.

The selection process implies an initial screening of the submitted proposals to assess their admissibility and eligibility. In a second stage the eligible proposals are evaluated by an independent evaluation panel and an adequate evaluation review procedure is put in place in case of complaints regarding the evaluation. The aim of all steps in this process is to ensure a robust and transparent selection which in turn will guarantee the highest value for money return.

The key indicators which can be used to measure the performance of this stage are the level of execution of the DG's work programmes, the attractiveness of the calls, the time-to-inform, the time-to-pay-experts and the number of requests for an evaluation review.

Level of execution of the DG's work programmes

DG CONNECT's work programmes for 2016 foresaw the implementation of 12 calls for proposals for H2020 (and 3 prizes) and 7 calls coordinated by other DGs or agencies. All of these calls/prizes have been successfully implemented.

Attractiveness of the calls

The attractiveness of the DG CONNECT's funded programmes can be measured by the proportion of the proposals received compared to the ones which were effectively selected. For the year 2016 there were on average 8 proposals received for each selected proposal. This demonstrates the attractiveness of the programmes managed by DG CONNECT.

Average time-to-inform

In 2016, DG CONNECT complied with this control effectiveness indicator with a maximum time-to-inform result of 5 months (average time to inform was 105 days in 2016 compared to 125 days in 2015) and a maximum period of 8 months (average time to sign was 198 days in 2016 compared to 216 days in 2015) for signing grant agreements, in accordance with Article 128(2) of Regulation (EU, Euratom) No 966/2012. This shows that the evaluation exercises have been carried out in an efficient manner.

Evaluation review procedures

As shown in the table below the number of introduced requests for review (14) is very

low compared to the total proposals (1996; 0,7%). The latter is a good indication for the efficiency of the selection process.

	TOTAL (2015)	TOTAL (2016) *
Number of proposals received	2234	1996*
Number of proposals selected	223	209
Number of evaluation review request received	27	14
Number of review requests received as % of number of proposals received	1,12%	0,7%
Number of review cases leading to a re-evaluation	1	1
Number of reviews leading to a re-evaluation as % of number of proposals received	0,04%	0,005%
Number of (successful) evaluation reviews / total number of proposals received	0,04%	0**

* For 4 calls (293 proposals received) the evaluation process was not finished by 31/12/2016, therefore they are only reflected in the number of proposals received.

** The re-evaluation of one successful evaluation review proposal will take place in 2017.

Time-to-pay experts

The average for paying reviews in 2016 is 13,5 calendar days compared to 18 days in 2015⁹.

Cost-benefit analysis:

In 2016, the total costs of evaluation are estimated at 8,8 MEUR, out of which 3,4 MEUR internal costs and 5,4 MEUR experts payments¹⁰. The benefits of this stage are not quantifiable and consist in the assurance that the most excellent projects are selected out of the many projects proposed. This and the oversubscription described above underlines the importance of the controls in place at this stage of the grant management process, and why the costs are justified.

Stage two: grant preparation/contracting

After a sound and transparent selection process, the next stage consists of formalizing the contractual side of the proposals. The objective of this stage is translating each of the selected proposals into legally binding grant agreements, allowing for the management of both the scientific and financial aspects of the projects and to ensure the best value for money output of each of the contracted projects.

Proposals under H2020 are expected to be mature and ready to be implemented without the need for substantial adjustments in the scope and repartition of the scientific work, the duration or the maximum financial contribution for the project. Given that no negotiation phase is foreseen for this programme, the difference between the recommended funding and the final grant awarded is negligible.

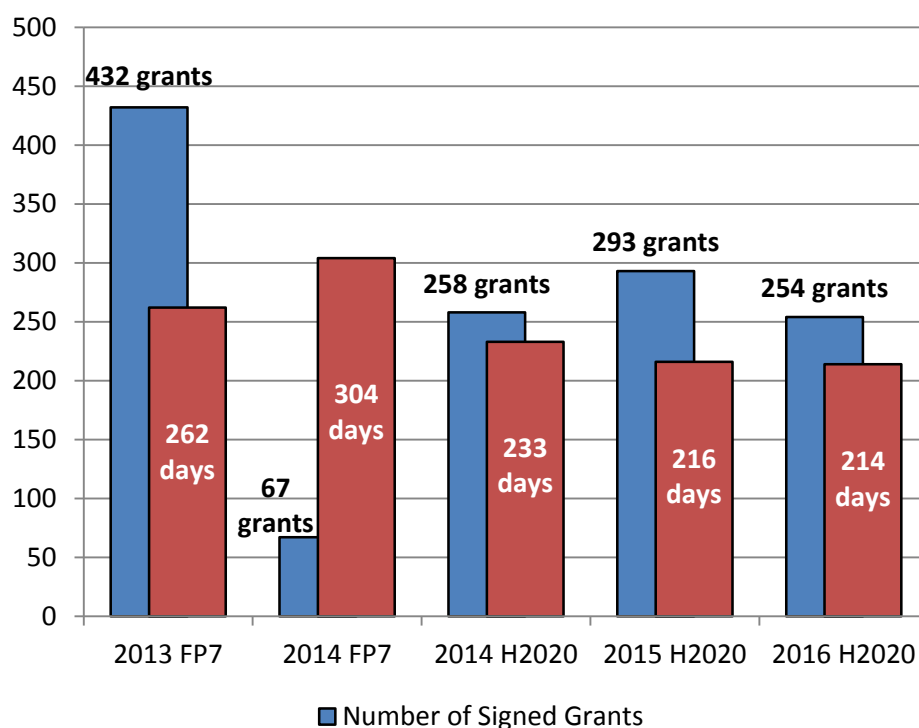
The key indicator which can be used to measure the performance of this stage is the time-to-grant.

⁹ Data gathered from the CORDA database.

¹⁰ Data gathered from the EMI application managed by REA.

Time-to-grant (TTG)

The time-to-grant is the length of the time between the closure date of the call for proposals and the date of the signature of the grant agreement. The TTG indicator shows the average period between the calls' closure date and the grants' signature. The evolution of the TTG in the last 2 years of FP7 and the first 3 years of Horizon 2020 is shown in the table below.



In 2016, 254 H2020 projects were signed for a total EC contribution of 1188,28 MEUR and a total budgeted cost of 1384,72 MEUR. The average TTG of these projects was 214 days, which forms a considerable improvement compared to FP7¹¹. Nevertheless, it needs to be noted that a shorter TTG does bring some risks as it reduces the time available for the Commission to carry out extensive checks before signing grants.

Cost-benefit analysis:

The main benefits of this stage are unquantifiable as they consist in translating valuable scientific ideas into legally binding grant agreements. Notwithstanding the fact that staff carried out multiple tasks across the entire grant management process, the internal costs associated with the contracting process could be quantified to be 2,3 MEUR in 2016 (2,2 MEUR in 2015).

Stage three: monitoring the execution

The objective of this stage is to ensure that the projects are performing towards their implementation plans and that the financial operations comply with regulatory and contractual provisions.

The execution of the projects is monitored through different tools, the ex-ante controls being one of the most important ones at the time of cost claims submitted by the

¹¹ Data gathered from the FP7 and H2020 CORDA data warehouse.

beneficiaries. Other monitoring measures include the assessment of the technical reports, which in some Programmes may have further pre-financing implications and commitments adjustments (only applicable to Multi-Annual Programmes), as well as direct and regular contacts with the beneficiaries and project promoters, technical site visits, project management workshops, among others.

The key indicators which can be used to measure the performance of this stage are the time-to-pay (TTP), which is defined as a percentage of payment made within the binding deadlines and the average project management cost per running project.

The time-to-pay (TTP) indicator:

This indicator gives the percentage of payments made within the binding deadlines. DG CONNECT continued its efforts in 2016 to further reduce the number of late payments, in line with the tighter deadlines imposed by the Financial Regulation. For the year 2016, 97,6% of the total number of payments were paid on time compared to 93,4% in 2015. The average time for payments made on time is 21,6 days. The overall average payment time is 22,4 days.¹²

Table: Evolution of the TTP in DG CONNECT (%)

2016	2015	2014
97,6%	93,4%	92%

Average project management cost per running project

DG CONNECT estimates that this stage of the process costs around 17 MEUR for the normal management of the contracts and ex-ante controls over payment claims. The average project management costs (exclusive of financial management) amount to 13.261 EUR per running project. The average number of projects managed per programme officer was 13,15 in 2016.

Table: Number of running projects in 2016:

2016	Projects	Budget	Programme Officers	Average Project	Average Budget
FP7	418	1.775.992.434	97,5	4,29	18.215.307
CIP	57	181.026.709	97,5	0,58	1.856.684
H2020	807	3.232.851.570	97,5	8,28	33.157.452
Total	1.282	5.189.870.713	97,5	13,15	53.229.443

Cost-benefit analysis

The real benefit of the ex-ante controls cannot - with the current practices and IT systems in place - be fully quantified. Indeed, many interactions take place between the consortia and the DG's operational services in order to clean the costs statements from substantial errors still before the official submission of the latter. Therefore, the costs accepted for reimbursement are often very close to the one submitted in the "pre-cleaned" financial statements. As a consequence the difference between the accepted

¹² See annex 3 tab 6.

costs and the ones claimed with the latest submission of the financial statements cannot fully measure the "gain" from the ex-ante control measures.

The amount recorded in the accounting system (ABAC) for recoveries in 2016 is 15,7 MEUR excluding recoveries from ex-post controls (6,1 MEUR¹³) gives an estimate of the savings through these controls of 9,6 MEUR.

Stage four: ex-post controls

The fourth stage includes the ex-post audits as well as the recovery of any amounts found to have been paid in excess of the amount due.

Ex-post controls are a key element of the control strategy of the DG. Detailed ex-ante controls represent a considerable administrative burden on beneficiaries and the Commission, as they require the transfer of large amounts of information and its detailed checking. This has a seriously negative impact on the time-to-grant and the time-to-pay beneficiaries. For this reason the Research family and therefore also DG CONNECT has decided to obtain most of its assurance from ex-post controls.

Cost-benefit analysis:

As regards the ex-post controls performed by DG CONNECT on CIP ICT PSP and the legacy of FP7 audits (78 audits as per 31 December 2016), DG CONNECT estimates that this stage of the process costs around 0,8 MEUR. A more detailed analysis of their activities can be found in DG RTD's annual activity report. The amount of recoveries in 2016 is 11,83 MEUR (9 MEUR for FP7 and 2,83 MEUR for CIP). This gives a first estimate of the savings. However, the real benefit of the ex-post controls, including the deterrent and training effect, cannot be fully quantified.

Overall, given the above indicators, it is considered that an efficient control system has been put in place.

Overall assessment of the cost-effectiveness

DG CONNECT estimated the costs of controls for each of the different stages in 2016. The result is shown in the table below.

Table: Overall cost effectiveness indicator direct grant management

	Costs in MEUR			Other Costs (external inputs)	Total Costs
	Officials	Contractual staff	END		
Stage 1 – programming and evaluation	2,7	0,6	0,1	5,4	8,8
Stage 2 – contracting	2,0	0,3	0,0		2,3
Stage 3 – monitoring the execution (financial circuits)	14,5	2,3	0,2		17,0
TOTAL EX-ANTE	19,2	3,2	0,3	5,4	28,1

¹³ The sum of 6,1 MEUR is related to the recoveries on ex-post controls (5,7 MEUR related to the financial audits, 319 KEUR to the extension of audit findings and 131 KEUR to the final payment assessments.

Stage 4 – ex-post controls and recoveries	0,6	0,1	0,1	0,8	1,6
TOTAL EX-POST	0,6	0,1	0,1	0,8	1,6
TOTAL COSTS	19,8	3,3	0,4	6,2	29,7

The total cost of control can be evaluated for the 4 stages at approximately 29,7 MEUR. This would correspond to 1,48% of the total operational payments made in 2016 compared to 1,75% in 2015. The figures must nevertheless be read with some caution. Some stages are related to H2020 and others to FP7 and CIP. This decreases the relevance of the general cost-effectiveness calculations and makes comparison with the previous year's results more difficult.

The benefits of the grant management control system are considered here as a whole, as they cannot only be expressed in monetary terms.

The first objective of the control system is to achieve the main policy objective – to create growth and jobs, especially by contributing to more and better science in Europe. In this sense, the controls aim to ensure good work programmes, select the best proposals to be funded and verify the scientific deliverables. Thus, the benefits are much wider than the budget implemented in the given year.

The second objective of the control system is to ensure that the EU contribution paid to the beneficiaries is complying with internal control objectives. This means, in short, legal and regular transactions done in a cost-effective way. This report develops at several points how the balance between these two requirements has been found.

The benefits are not always quantitative and a simple cost benefit evaluation would not reflect this reality. Nevertheless, during the different control stages, some economies could be estimated as mentioned in this report.

Overall, it is considered that a cost-effective control system has been put in place given

- the achievements of the research policies as set out in Part 1;
- the quantitative and qualitative benefits arising from the control systems adopted;
- the error rates set out above, which are at a level considered as being an appropriate balance between different policy objectives and between trust and control;
- the costs of the control system compared to the level of expenditure;
- the positive evolution as regards the efficiency of the time-to-pay, time-to-inform and time-to-grant indicators.

In addition, DG CONNECT is using the possibility provided for in Art 66(2) of the Financial Regulation to differentiate the intensity of the DG's controls – in view of the different risk-profiles among its current and future transactions and of the cost-effectiveness of its existing and any alternative controls – by re-directing the control resources towards more stringent controls where needed while having leaner and less burdensome controls where appropriate.

Due to the reorganisation of July 2016, the revision of the financial circuits planned for early 2016 was postponed to early 2017. This revision of the financial circuits comprises risk analysis, simplifications, verification of compliance with the principle of segregation of duties as well as the compliance with the applicable regulatory framework. An updated version of the financial circuits will be documented by mid-2017.

DG CONNECT has developed and implemented its own anti-fraud strategy since 2009, elaborated on the basis of the advice and methodology provided by OLAF. It has been updated in 2016 taking into account the Commission's overall anti-fraud strategy and methodology guidelines provided by OLAF¹⁴. The updated DG CONNECT anti-fraud strategy includes several actions which will be implemented as of 2017. The DG furthermore follows and implements the Common Anti-Fraud Strategy in the Research Family (RAFS) including its action plan which continues all key principles and measures of the previous and updated DG CONNECT strategy. The RAFS was first established in 2012 and has been updated in early 2015 notably to respond to the new challenges, including H2020, of all the Research DGs and Services. The implementation of the RAFS and in particular the action plan accompanying the RAFs is regularly monitored by the governing board of the Common Support Centre (CSC) and the Fraud and Irregularities in Research (FAIR) Committee, in which DG CONNECT actively participates.

Until 2014, DG CONNECT has provided its staff access to plagiarism checks through an individual contractual agreement with an external service provider. Since 2015 the provision of plagiarism checks and the follow-up of the agreement have been transferred to the CSC.

To raise staff awareness on fraud risks and its mitigation including the use of plagiarism checks, training has been run by DG CONNECT. In 2016, more than 40 CONNECT staff attended anti-fraud training. The main Research anti-fraud trainings are based on a common anti-fraud training module, based on common experience and cases, developed in cooperation with the other research DGs and executive agencies. In addition, in 2016 a specific work-shop on anti-fraud in open market/ procurement activities was held.

DG CONNECT continued to transmit information to OLAF about suspicions of fraud and other irregularities. In 2016, OLAF opened 4 new investigations having an impact on the DG. DG CONNECT held several meetings with OLAF with regards to ongoing and closed investigations and participated in the Fraud Prevention and Detection Network organised by OLAF.

Overall, given the existing anti-fraud strategies and their implementation along with the other points mentioned it is considered that an effective and adequate fraud prevention and detection system is in place.

Other control objectives: safeguarding of assets and information

The assets reported by DG CONNECT in the balance sheet 2016 mainly concern short term and long term pre-financing relating to FP7/CIP/H2020 for which the control system is covered in the section covering the management of those programmes.

The items booked under Intangible Assets for an amount of 5.360.322,99 EUR concern a computer software, which was capitalised in 2015. Total value of the asset is 6.253.710,15 EUR and its depreciation 893.387,16 EUR.

A separate control strategy for safeguarding the assets is not deemed necessary for 2016.

2.1.1.b: Budget implementation tasks entrusted to other DGs and entities

This section reports and assesses the elements that support the assurance on the

¹⁴ COM(2011)376 of 24.06.2011.

achievement of the internal control objectives as regards the results of the DG's supervisory controls on the budget implementation tasks carried out by other Commission DGs and entrusted entities distinct from the Commission.

DG CONNECT has entrusted parts of its budget for implementation to other Commission services, a Joint Undertaking, two decentralised agencies, a body linked to Article 185 initiatives, the European Investment Fund and to the executive agencies. No subsidies were paid to the European Investment Bank in the context of the CEF Financial Instruments in 2016.

Entity	Legal form	Purpose	Payments made –
Other Commission Services through a number of cross-subdelegations	EU Institution	In the interests of sound budget implementation, the authorising officer by delegation ('the delegator') may, by way of exception, subdelegate management of a budget line or part of a line to another Director-General or Head of Service ('the delegatee'). DG CONNECT both gives and receives subdelegations.	77,04 MEUR
ECSEL	Joint Undertaking	ECSEL is a partnership between the private and the public sectors for electronic components and systems. It, inter alia, contributes to the development of a strong and globally competitive electronics components and systems industry in the European Union.	263,58 MEUR
BEREC office	Decentralised Agency	BEREC contributes to the development and better functioning of the internal market for electronic communications networks and services.	4,25 MEUR
ENISA	Decentralised Agency	ENISA seeks to develop a culture of Network and Information Security for the benefit of citizens, consumers, business and public sector organisations in the European Union.	10,4 MEUR
Active and Assisted Living (AAL) Association	Private Law body	The AAL Programme is a funding activity that aims to create better conditions of life for the older adults and to strengthen the international industrial opportunities in the area of information and communication technology (ICT).	9,78 MEUR
Financial instruments to the EIB established under the CEF Broadband (i.e. Project Bond Initiative)	EU Institution	To enable long-term capital market financing of infrastructure projects including, but not limited to, those carried out under project finance structures (which on a risk-sharing basis aims to enable long-term capital market financing of infrastructure projects including, but not limited to, those carried out under project finance structures.	No payments made in 2016
Cultural and Creative Sectors	EU Agency	The CCS GF is a new initiative managed by the EIF on behalf of the Commission and launched in June	5,98 MEUR

Guarantee Facility (CCS GF) managed by the EIF		2016 in the context of Creative Europe programme (2014-20). The Facility benefits micro, small and medium-sized enterprises in the cultural and creative sectors, often facing difficulties in accessing loans, based in any of the participating countries (Member States, Iceland and Norway).	
Education, Audiovisual and Culture Executive Agency (EACEA)	Executive Agency	EACEA is responsible for the management of certain parts of the EU funding programmes in the fields of education, culture, audiovisual, sport, citizenship and volunteering. In 2015 its Delegation Act was revised to include DG CONNECT as parent DG.	98,01 MEUR
Innovation and Networks Executive Agency (INEA)	Executive Agency	INEA officially started its activities on 1 January 2014. For DG CONNECT it implements the Connecting Europe Facility (CEF) programme.	21,45 MEUR
Research Executive Agency (REA)	Executive Agency	REA manages large parts of the Horizon 2020 Framework Programme which began in 2014 and continues to look after remaining FP7 projects.	0,189 MEUR
Executive Agency for Small and Medium-sized Enterprises (EASME)	Executive Agency	The Executive Agency for Small and Medium-sized Enterprises (EASME) has been set-up by the European Commission to manage several EU programmes on its behalf.	89,43 MEUR
TOTAL			581,1 MEUR

In all cases of indirect management, the supervision arrangements are based on the principle of controlling 'with' the relevant entity. For further details, see the ICT on indirect management in Annex 5.

Coverage of the Internal Control Objectives and their related main indicators

Control effectiveness as regards legality and regularity

DG CONNECT has set up internal control processes aimed to ensure the adequate management of the risks relating to the legality and regularity of the underlying transactions, taking into account the multiannual character of programmes as well as the nature of the payments concerned.

In its report on the annual accounts for 2014 concerning the Joint Undertakings ENIAC and ARTEMIS which were merged into ECSEL, the European Court of Auditors (ECA) reiterated its qualified opinion as regards the sufficient assurance on the ENIAC/ARTEMIS budget execution. The ECA's qualification is based on a negative assessment of the appropriateness of the audit strategies used by (a sample of) the National Funding Agencies (NFAs) which perform ex-post controls and on which the JUs (partly) rely for their assurance. Further measures of ECSEL during 2015/2016 however allowed the European Parliament to finally grant discharge for the 2014 accounts in October 2016. This '*heritage*' issue is expected to be addressed in the 2015 discharge debate. It will however not impact anymore the ECSEL operations under Horizon 2020 because the JU funding mechanism is no longer linked to the recognition of costs at national level.

The reservation concerning FP7 includes the CONNECT FP7 funds entrusted to the AAL Association and ECSEL.

Expenditure cross-subdelegated

As in previous years, DG CONNECT has cross-subdelegated a number of activities to different services within the Commission, in order to arrange the provision of certain operations more efficiently. Being a Commission service itself, the Authorising Officer by delegation (AOD) of the cross-delegated service is required to implement the appropriations subject to the same rules, responsibilities and accountability arrangements.

Control results

The cross-delegation agreements require the AODs of cross-delegated services to report on the use of these appropriations. The reports on the sub-delegations received from other DGs and offices did not provide any indication of any particular unfavourable observation with regard to the regularity and legality of the transactions concerned. Overall, DG CONNECT considers that its supervision of expenditure cross-subdelegated has been efficient and cost-effective in 2016.

Please see annex 10 for the complete list of DG CONNECT activities covered by cross sub-delegations in 2016.

Executive agencies

In 2016, DG CONNECT was a parent DG of the following executive agencies: the Research Executive Agency (REA), the Innovation and Networks Executive Agency (INEA), the Executive Agency for Small and Medium-sized Enterprises (EASME) and the Education, Audio-visual and Culture Executive Agency (EACEA).

In January 2016, the Director-General of DG CONNECT signed three new Memoranda of Understanding (MoU) with REA, EASME and INEA on modalities and procedures of interaction. A revision of the 2014 MoUs became necessary in particular due to the establishment of the Common Support Centre (CSC) and the further development of H2020 business processes and IT tools. The major changes relate to the legal review by the Commission of acts adopted by an Executive Agency, business continuity, the recovery of funds through judicial proceedings and the European Ombudsman complaints. The changes concerning H2020 and FP7 relate to the evaluation and selection of proposals, the feedback of interim results into policy making as part of the strategy for the dissemination and exploitation of Horizon 2020 research results and the external communication activities.

In 2016, the amount of operational appropriations delegated by DG CONNECT to the Executive Agencies was 209,08 MEUR.

Supervision arrangements

In terms of supervision, the control systems of the executive agencies are similar to those of their parent DGs. They produce their own AARs. The supervision of the executive agencies continued throughout 2016. The annual activity reports of these agencies were reviewed by DG CONNECT and their Steering Committees.

Since the entry into force of the new Memoranda of Understanding between the Executive Agencies and their parent DGs, the executive agencies also report half-yearly to the DG on the use of resources. The preparation of the EAs' budgets and annual work plans is coordinated with the Directorate-General. The EAs are subject to audit by the Internal Audit Service of the Commission and by the European Court of Auditors – DG CONNECT uses their reports as an element of the supervision of these bodies. No unexpected issues arose which would need to be raised in this report.

Control results

The executive agencies have not reported any reservations that would impact the management of programmes on behalf of DG CONNECT.

In the 2016 AAR of EASME, the agency reported that for the CIP IEE II and CIP Eco Innovation programmes, given the results of the audits that took place in the course of 2016, the cumulative residual error rates at the year-end are estimated at 3,8% and 6,0% respectively, above the materiality threshold of 2% foreseen for the multi-annual period. The Agency decided to make a reservation for the CIP IEE II and CIP Eco Innovation programme in its 2016 AAR. However, this reservation concerns the Intelligent Energy Europe programme, which EASME implements for DG ENER and the second reservation, linked to the CIP Eco Innovation programmes, is implemented by EASME for DG ENV.

REA maintains the reservations made in its AAR 2015 as regards the material impact of residual errors in the SME actions financed under the FP7 Capacities Specific Programme and the Space and Security themes financed under the FP7 Cooperation Specific Programme, both exceeding the materiality level of 2%. The first programme is implemented on behalf of DG RTD and the second programme on behalf of DG GROW (Space) and DG HOME (Security themes).

For EACEA, the reservations issued in 2015 will be maintained in the AAR 2016 for the Life Long Learning Programme (2007-13) and Culture and Youth in Action. This is due to the combination of the fact that the Agency calculates its error rates on a multiannual basis and the fact that these programmes are now phasing out. It must be noted however that EACEA does not implement these programmes for DG CONNECT. The Creative Europe - MEDIA sub programme which EACEA implements on behalf of DG CONNECT is not affected by these reservations.

INEA has not reported any reservations for the reporting period.

Overall DG CONNECT considers that its supervision of the executive agencies has been effective and sufficient in 2016. DG CONNECT is well aware of the reservations made by REA, EASME and EACEA and does not consider that they represent a failure of DG CONNECT supervision.

ECSEL Joint Undertaking

ECSEL is a partnership between the private and the public sectors for electronic components and systems. The ECSEL Joint Undertaking is established within the meaning of Article 187 of the Treaty on the Functioning of the European Union for the implementation of a Joint Technology Initiative on 'Electronic Components and Systems for European Leadership' for a period up to 31 December 2024. It was established by Council Regulation (EU) No 561/2014 of 6 May 2014.

Supervision arrangements

The Commission's Internal Audit Service (IAS) performs ECSEL's internal audit function and ECSEL works to take into account the comments made by the IAS. The European Court of Auditors (ECA) is the external auditor of ECSEL and DG CONNECT receives copies of the reports, for action, if necessary.

Directorate A 'Digital Industry' of DG CONNECT represents the Commission in the Governing Board (GB) and the Public Authorities Board (PAB) of the ECSEL JU. DG CONNECT closely monitors the work of the ECSEL JU¹⁵, inter alia by preparing the

¹⁵ ENIAC and ARTEMIS Joint Technology Initiatives operated until the 27 June 2014, when ECSEL was established and took over their operations.

Commission's position in the GB and in the PAB.

In 2016 ECSEL launched two calls for proposals with a total EU estimated contribution amounting to 150 MEUR¹⁶, leveraging a similar amount from the participating Member States and Associated countries and some 385 MEUR in-kind contributions from the private participants.

Similar to what has happened during the 2013 discharge procedure, on 28 April 2016, the EU Parliament voted to postpone the discharge for ENIAC and ARTEMIS JUs for the financial year 2014. ECSEL JU (legal successor of ENIAC and ARTEMIS) took corrective measures (assessed national assurance systems, calculated a proxy for the residual error rate of 0,6%, below the materiality threshold, elaborated an action plan proposing concrete corrective measures and deadlines aiming to adequately address and close the IAS findings). The European Court of Auditors also acquired additional information directly from the National Funding Authorities (NFAs).

In the context of the 2015 discharge, in the Court's opinion, the JU's accounts for the period of 2015 present fairly, in all material respects, its financial position. However, although recognizing the efforts made by the ECSEL JU to assess the national assurance systems, the Court repeats its qualification on the grounds that it is not possible to calculate a reliable weighted error rate nor a residual error rate on the projects launched under ARTEMIS and ENIAC JUs.

The Commission (DG CONNECT as the 'parent DG') recognizes the importance of the Court's observation and at the same time highlights the importance of the outstanding successes of the initiatives obtained making the JU vital for the digital future of Europe. DG CONNECT will continue to provide its advice and support to the ECSEL JU in its efforts to address all the concerns of the Court and of the budgetary authorities.

The issue highlighted by the Court will not further impact ECSEL JU operations under Horizon 2020 as the JU funding mechanism is no longer linked to the recognition of costs at national level. The audits will be performed by the Commission and the error rates will be calculated on basis of those audits.

Control results

Overall, DG CONNECT considers that its supervision of the ECSEL JU has been effective and appropriate in 2016. However, given the findings of the Court, DG CONNECT follows a prudent approach and includes the related FP7 budget from ARTEMIS/ENIAC and ECSEL JU within the scope and exposure of its reservation for FP7.

BEREC Office

The tasks, organisation and operation of BEREC and the BEREC Office are set out in Regulation (EC) No 1211/2009 of 25 November 2009 establishing the Body of European Regulators for Electronic Communications (BEREC) and the Office.

BEREC is composed of the Board of Regulators which is not an EU agency and does not have legal personality. BEREC has the objective of promoting a consistent application of the EU regulatory framework and its tasks are focused on market regulation. It has an advisory role towards the EU institutions and individual national regulatory authorities (NRAs). The Board of Regulators consists of the head or a high-level representative per each of 28 national regulators. The Commission has an observer role (with no voting rights) in the Board. EEA and candidate countries have also observer status. The Board is chaired on yearly rotating basis by a national regulator.

¹⁶ Of that amount 115 MEUR represent revenues from the 2016 general Union budget and 35 MEUR represent estimated revenues from the 2017 general Union budget.

The BEREC Office is established as an EU agency with legal personality. It has no regulatory powers but a supporting administrative and professional assistance role towards BEREC. With 27 staff, it is currently the smallest EU agency. The BEREC Office is managed by an Administrative Manager under the supervision of a Management Committee composed of the Heads of the 28 national regulators and a representative of the Commission with voting rights (one vote). In October 2016, the Management Committee decided to extend the administrative manager's term of office for 3 years as of 1 April 2017.

Supervision arrangements

In 2016 the Deputy Director-General of DG CONNECT and the Director for Electronic Communications Networks & Services as alternate represented the Commission in the Management Committee. Arrangements are in place within the DG to ensure that all proposals to the Management Committee are properly assessed and the Commission's position is agreed. The main Commission representative and the alternate sign a declaration of assurance in line with the one used in the Commission.

The Administrative Manager, who is also the authorising officer of the BEREC Office, produces a consolidated annual activity report, which includes information on the management and internal control systems including a summary of internal audits carried out, a summary of the recommendations made and of the actions taken on these recommendations; any observations of the ECA and the actions taken on these observations. The Administrative Manager signs a declaration of assurance in line with the one used in the Commission.

The Commission's Internal Audit Service (IAS) performs the BEREC Office's internal auditing function. In September 2016, the IAS conducted a full risk assessment exercise covering BEREC Office's major operational and administrative processes. Based on its outcome, the IAS prepared the Strategic Audit Plan for 2017–19, which includes audits on the following topics: a) Procurement, missions, and reimbursement of experts; b) Planning, budgeting, monitoring of activities and reporting. Two sub-processes of the BEREC Office activities were considered as high risk areas, namely personal data protection and fraud prevention. The BEREC Office, being responsible for implementing the action plan in order to minimise the risks, prepared an Anti-Fraud Strategy which was adopted by the Management Committee in February 2017.

The ECA is the external auditor of the BEREC Office, and DG CONNECT receives copies of the reports, for action, if necessary. The BEREC Office received, for its 2015 accounts, an unqualified opinion from the ECA on the legality and regularity of the transactions underlying the accounts. The ECA had some comments on the budgetary management of the office, in particular as regards to the use of negotiated procedures instead of an open procurement procedure in a particular case (for the provision of professional event organisation services) and as regards the level of committed appropriations carried over.

Control results

The reports and other available information did not provide any unfavourable observations with regard to the regularity and legality of the transactions. DG CONNECT has no reason to believe that their reports would be incomplete or unreliable. DG CONNECT concludes from the information available that resources assigned to the activities of BEREC have been used for the purpose of achieving the objectives of the BEREC office and in accordance with the principles of sound financial management.

A first estimate of the 2016 surplus that should be reimbursed to the EU budget (as assigned revenue) is 206.664 EUR. This amount is recovered and used to pay the 2017 subsidy (having been deducted from the financial programming amount to be voted in the budget).

Overall, DG CONNECT considers that its supervision of the BEREC and BEREC Office has been effective and appropriate in 2016.

ENISA

The tasks, organisation and operation of ENISA are set out in Regulation (EC) No 526/2013 of 21 May 2013 concerning the European Union Agency for Network and Information Security (ENISA) and repealing regulation (EC) No 460/2004. The Agency is tasked to contributing to a high level of network and information security within the Union and in order to raise awareness of network and information security and to develop and promote a culture, of network and information security in society for the benefits of citizens, consumers, enterprises and public sector organisations in the Union.

ENISA supports the European Institutions, the Member States and the business community in addressing, responding and especially preventing network and information security problems. It does so through a series of activities across five areas identified in its strategy:

- expertise: provision of information and expertise on key network and information security issues.
- policy: support to policy making and implementation in the Union.
- capacity: support to capacity building across the Union (e.g. through trainings, recommendations, awareness raising).
- community: foster the network and information security community [e.g. support to the Computer Emergency Response Teams (CERTs), coordination of cyber exercises].
- enabling (e.g. engagement with the stakeholders and international relations).

No new mandate for the agency was established during the reporting year.

ENISA carries out its activities according to an annual and multiannual work programme. It has been granted an autonomous budget financed primarily through a contribution from the Union as well as contributions from third countries participating in the Agency's work. Member States are also allowed to make voluntary contributions to the revenue of the Agency.

Supervision arrangements

The Director for Digital Society, Trust and Cybersecurity, within DG CONNECT, and the Director for IT Security, within DG DIGIT, represent the Commission on the Management Board and the Executive Board.

The Management Board and the Executive Board meet three or four times per year. The cooperation at operational level is ensured via the desk officer for ENISA as well as regular contacts between the operational unit and ENISA's staff (e.g. regular bimonthly phone calls). At managerial level, there are regular meetings between the Executive Director of ENISA and senior members of the Management and the CONNECT's Director responsible. DG CONNECT may request, at any time, any additional information deemed necessary.

DG CONNECT reviews all documents and information which is sent to the Management Board and the Executive Board including KPIs, documents of the board meetings as well as reports that are presented by ENISA. Sometimes, assistance from the support units in Directorate R is requested particularly for human resources and financial matters.

The Executive Director of ENISA, as the authorising officer of ENISA, is required to

produce a consolidated annual activity report, which should include information on the management and internal control systems including a summary of internal audits carried out, the recommendations made and the action taken on these recommendations as well as any observations of the ECA and the actions taken on these observations. He signs off a declaration of assurance.

The Commission's Internal Audit Service (IAS) performs ENISA's internal audit function and the ECA is the external auditor of ENISA. DG CONNECT receives copies of the reports, for action, if necessary.

In addition, the Executive Director presents to the Management Board an annual ex post evaluation on the Agency's core activities which is conducted by an independent contractor. The results of the ex post evaluation for the reporting period were positive. In particular, the study findings suggest that there is a need for reinforced network and information security in Europe and the vast majority of stakeholders perceive that the scope and objectives of ENISA's work, as well as its outputs, responds to such needs.

The ENISA Regulation requires the Commission to conduct an evaluation of the performances of the Agency by June 2018, in view of a possible revision of the mandate, which is coming to an end in 2020. In view of the fast evolving changes in the cybersecurity landscape, the Commission has anticipated the evaluation of the Agency and launched a dedicated study, run by an independent contractor, in November 2016. The results of the study are expected in Q3 2017.

Control results

The reports and other available information did not provide any unfavourable observations with regard to the regularity and legality of the transactions. DG CONNECT has no reason to believe that the reports would be incomplete or unreliable.

A first estimate of the 2016 surplus that should be reimbursed to the EU budget (as assigned revenue) is 80.397 EUR. This amount is recovered and it is also used to pay the 2017 subsidy (having been deducted from the financial programming amount to be voted in the budget).

DG CONNECT concludes from the information available that resources assigned to the activities of ENISA have been used for the purpose of achieving the objectives of ENISA and in accordance with the principles of sound financial management.

Overall, DG CONNECT considers that its supervision of ENISA has been effective and appropriate in 2016.

Active and Assisted Living Joint Programme (AAL JP)

The AAL Association is an international not-for-profit association established under Belgian law and constitutes the dedicated implementation structure created by the participating EU Member States, Canada, Norway and Switzerland (Participating Countries).

The AAL JP is a Member States' initiative for applied research on ICT and ageing well. The budget for calls for proposals is composed of the EC contribution and contributions of Participating Countries and organisations participating in the projects (approximately 25%, 25% and 50% respectively). The new AAL JP is a prolongation of the AAL JP (2008-2013) with the same annual budget and obtained a new mandate for the period 2014-2020 (decision No 554/2014/EU) as a part of the Innovation Investment Package.

The programme is managed by the Participating Countries through an AAL Association. The Commission is part of the governance structure. It has the right to undertake every year an operational review with independent external experts in order to supervise its

financial contribution. Furthermore, the EC can veto the work programme of the AAL in the General Assembly. Day-to-day operations are run by the Central Management Unit supervised by the Executive Board.

Supervision arrangements

The General Assembly, which is the decision taking body of the AALA, appoints the members of the Executive Board and supervises the implementation of the AAL Joint Programme, including approval of annual work programmes, allocation of national funding to projects and applications for new memberships. The Commission has an observer status in the meetings of the General Assembly and is also has the right to veto the AAL JP annual work programme.

An ex-ante assessment of the AALA's capacity to administer the funds in the indirect centralised management mode was finalised in October 2014. Its recommendations were reflected in the Delegation and Transfer of Funds Agreements as well as in the ex-post audit strategy concerning the EU contribution to the AAL JP. An action plan for follow-up was agreed with the AAL Association in 2015. In 2016, only two recommendations of the 24 had not been addressed: 1) To develop and implement a policy on protection of personal data and 2) to develop and formalise HR policies on recruitment, job descriptions, performance appraisal & training of staff. They both have a deadline for implementation in 2017.

The AAL JP is managed by a dedicated implementation structure, namely the Central Management Unit (CMU) and a network of national contact points (NCPs) responsible for the administrative, financial and contractual management. DG CONNECT undertakes every year an annual operational review with independent external experts to assess the overall performance of the AALA and whether all contractual obligations are met. In 2016, this review has confirmed the good operation of the AAL JP and supports the assurance of DG CONNECT. In addition, there have been programme level evaluations with high level external experts in 2010, 2013 and 2016. The current 2016 interim evaluation is exploring options for the follow-up of the current programme. The previous 2010 and 2013 evaluations having recommended continuing the programme, AAL2 was established (2014-20).

Risk management has included verification of financial commitments of Participating Countries before EU financing is allocated as well as for payments, where the EU contribution is subject to a certification of incurred costs by the responsible national public bodies before disbursement of EU funds by the AALA. The AALA has to a) provide information about the audit procedures in each of the Participating Countries and b) to report annually on audits implemented. In addition, the AALA should report as soon as there is a suspicion of fraud or irregularities. The IAS performed an audit on external bodies managing DG CONNECT funds, which recommended establishing a clearer ex-post audit strategy for the AAL JP. According to the recommendation of IAS, DG CONNECT approved, in early 2015, an ex-post audit strategy providing assurance regarding the mitigation of risks arising from the EC involvement in the AAL JP. The risks are also recorded in the risk register. In 2016, the ex-post audit strategy was implemented. The Commission conducts an annual review to follow up, among other, the implementation of the ex-post audit strategy.

Control results

DG CONNECT concludes from the information available, and there is no reason to believe that this information would not be complete or reliable, that resources assigned to the activities of AAL JP have been used for the purpose of achieving the objectives of AAL JP and in accordance with the principles of sound financial management. In view of the error rate of FP7 calculated for the budget managed directly by DG CONNECT (see 2.1.1 above) and the absence of elements that would justify a lower residual error rate, the scope and exposure of our own reservation for FP7 will include the related FP7 budget.

Financial Instruments - Project Bond Pilot Initiative and CEF Debt instrument

The European Investment Bank (EIB) manages on behalf of the Commission (DG ECFIN, DG MOVE, DG ENER, DG CONNECT) the financial instruments established under the Project Bond Pilot Initiative (PBI), which - on a risk-sharing basis - aims to enable long-term capital market financing of infrastructure projects including, but not limited to, those carried out under project finance structures. During the pilot phase of the PBI, the total EU budget contribution for the PBI was limited to 230 MEUR. The amount committed by DG CONNECT for PBI projects in the sector of ICT and broadband projects is up to 20 MEUR. This amount was spent on a single transaction, a project concerning extension and renewal investments in 11 already operational broadband Public Initiative Networks throughout France.

The various portfolios related to the total contribution (including the Loan Guarantee Instrument for TEN-Transport projects portfolio), were merged into one CEF Debt Instrument portfolio on 1 January 2016. Merging of portfolios as cost-saving measure has been proposed by the EIB and agreed upon by the Commission.

The CEF Debt Instrument Delegation Agreement was signed in July 2015 but no payments were made in 2015/16 to the EIB in the context of the CEF financial instruments.

Supervision arrangements

The EIB delivers an annual operational report on the PBI to the Designated Services and to DG ECFIN. The same applies for financial reporting. Additional quarterly reports are being provided informing on the allocation of PBI assets. The Commission has four nominees on the Steering Committee of the PBI. DG ECFIN chairs the Steering Committee and coordinates exchanges of views between Commission members of the Steering Committee before the meeting takes place. DG ECFIN also reports twice yearly to the European Parliament and to the Council on behalf of the Commission with the support of Designated Services.

The EC contribution to the PBI First Loss Piece Portfolio serves as a guarantee for the project. The amounts provided from the EU budget are further invested by the EIB. In case of project default or construction cost overruns, this money provisioned as a guarantee will actually be disbursed to support the reimbursement of the overdue amounts, up to the level of EU budget commitment.

Control results

Overall, DG CONNECT considers that its supervision of PBI has been effective and appropriate in 2016. In particular, DG CONNECT considers that the operational and financial reporting (monthly, quarterly and annual reports) is sufficient and provides relevant information and figures to ensure sound and efficient management of the policy aspects of this financial instrument.

CEF Broadband Fund (Equity Instrument)

The Connecting Europe Broadband Fund aims to invest in equity and quasi-equity, including mezzanine and subordinated debt, in some 7 to 12 broadband projects each year from 2017 to 2021. The Fund's investments will be of a size between EUR 1 million and €30 million, for projects representing total costs of EUR 150 million or less. Overall, the Fund is expected to unlock additional investments between EUR 1 billion and EUR 1,7 billion in broadband deployment in underserved areas, where very high-capacity networks are not deployed yet. The Fund aims to have invested in 20 countries by 2021. The Fund should be the first investment platform to support broadband infrastructure under the EFSI, the heart of the Investment Plan for Europe.

The operational launch of the Fund is expected to take place mid-2017. Cube Infrastructure Managers S.A., a reputable investment firm with extensive experience in infrastructure and ICT projects, has been selected as the approved applicant to manage the Fund through a public procurement process carried out by the EIB over the summer of 2016. Subject to successful negotiation on the terms, EIB plans to formally appoint the fund manager early next year.

The Commission committed in total 100 million EUR to the Fund, including 10 million legal commitment (global commitment of 2015, transformed into the legal commitment in December 2016) and 90 million global commitment made in 2016.

Supervision arrangements

These arrangements will be included in the Management Agreement, under ongoing negotiations between the parties.

Control results

Not yet available.

Financial Instruments - Cultural and Creative Sectors Guarantee Facility

As mentioned in section 1 of the AAR, the implementation of the Cultural and Creative Sectors Guarantee Facility under Creative Europe programme is entrusted to the European Investment Fund (EIF) in compliance with the Financial Regulation, Financial and Administrative Framework Agreement and specific conditions laid down in the Delegation Agreement signed between the Commission and the EIF on the 30th June 2016. Full reporting on control results (effectiveness as regards legality and regularity, efficiency and cost effectiveness and Fraud prevention and detection) is part of the Delegation Agreement in force.

Supervision arrangements

The Delegation Agreement in respect of the Cultural and Creative Sectors Guarantee Facility, provides for detailed supervision arrangements, listed in Article 7 (Governance), Article 13 (Operational and Financial Reporting) , Article 14 (Controls and Monitoring) and Article 15 (Audit) as well as in the relevant Annexes (Annex 6a on Operational Reporting, Annex 6b on Financial Reporting, Annex 6c on Pipeline Reporting, Annex 7 on Monitoring, control and audit obligations of the EIF and the Financial Intermediaries and control and monitoring rights of the Commission). Those provisions require the EIF to undertake comprehensive and timely monitoring of CCS GF Transactions under the CCS GF, covering Financial Intermediaries, Financial Sub-Intermediaries and Final Recipients, and to report on the monitoring activities to the Designated Service. In line with the provisions of the Delegation Agreement, the reports are delivered on annual or quarterly basis.

Based on its own controls, the EIF shall:

- a) monitor the compliance of the operations with this Delegation Agreement;
- b) assess the eligibility of Financial Intermediaries;
- c) monitor the eligibility of the Final Recipients;
- d) monitor the proper execution by the Financial Intermediaries of their contractual obligations, including their reporting obligations

The EIF shall require the Financial Intermediary to:

- a) monitor the contractual compliance of the agreements with Final Recipients; and
- b) where applicable, assess the eligibility of Financial Sub-Intermediaries

- c) monitor the eligibility of Final Recipients.

The Commission may exercise further controls to validate the operational and financial reporting received from the EIF. The Commission may request the EIF to transmit representative and/or risk-based samples of transactions.

The Commission appointed four members (from DGs CNECT, EAC, ECFIN and BUDG) to the governance body (called the Steering Committee) that supervises the implementation of this financial instrument

Control results

Overall, DG CONNECT considers that its supervision of CCS GF was effective and appropriate in 2016. In particular, DG CONNECT considers that the operational and financial reporting (monthly, quarterly and annual reports) is sufficient and provides relevant information and figures to ensure sound and efficient management of the policy aspects of this financial instrument.

Efficiency and Cost Effectiveness of controls

Based on an assessment of the most relevant key indicators and control results, DG CONNECT has assessed the cost-effectiveness and the efficiency of the control system and reached a positive conclusion.

DG CONNECT's costs for the monitoring and supervision of the entities entrusted with budget implementation tasks accumulate to approx. 1,905 MEUR. These costs include primarily personnel costs (in total 14,6 FTEs) and mission costs to attend supervisory board meetings for entities not based in Brussels. Personnel costs relate in particular to the monitoring activities (via the supervisory Committees), the preparation of budgets (for executive agencies), the assessment of the annual activity reports and other periodic reports as well as the annual work programmes.

Overall assessment of the cost effectiveness

The average cost of the monitoring and supervision of the executive agencies, ECSEL, AAL Association, BEREC/BEREC Office, ENISA, the Cultural and Creative Sectors Guarantee Facility (Financial Instrument) and payments made under cross subdelegations represent 0,33% of the operational payments made to these entities.

The table below provides a more detailed overview on supervision cost per entity for 2016:

Entity	Payments made	(estimated) Costs of Control	Ratio
EC services through cross-subdelegations ¹⁷	77,04 MEUR	0,028 MEUR	0,04%
Executive agencies ¹⁸	209,08 MEUR	0,573 MEUR	0,27%
ECSEL	263,58 MEUR	0,346 MEUR	0,13%
BEREC Office	4,25 MEUR	0,414 MEUR	9,7 %
ENISA	10,4 MEUR	0,358 MEUR	3,4 %

¹⁷ For the 'Administrative expenditure cross-subdelegated', the supervision arrangements are based on the principle of controlling 'with' the relevant entity. Being a Commission service itself, the Authorising Officer by delegation (AOD) of the cross-delegated service is required to implement the expenditure/ appropriations subject to the same rules, responsibilities and accountability arrangements, notably on efficiency and cost effectiveness.

¹⁸ Subsidies paid: EACEA: 98 MEUR, INEA: 21,4 MEUR, REA: 0,189 MEUR and EASME: 89,4 MEUR.

Active and Assisted Living Association	9,78 MEUR	0,082 MEUR	0,84%
Financial Instruments	5,98 MEUR ¹⁹	0,104 MEUR	1,74%
TOTAL	580,1 MEUR	1,905 MEUR	0,33%

Conclusion on efficiency and cost effectiveness of controls

The DG involvement in the governance of the various entrusted entities did not show any events issues or problems that could have a material impact on assurance as regards efficiency and cost effectiveness of controls. In terms of supervision by the DG, efficiency and cost-effectiveness is considered adequate.

Table: Evolution cost of controls Indirect Management:

Year	Payments made	Estimated costs of control	Ratio
2015	179,79 MEUR	1,757 MEUR	0,98%
2016	580,1 MEUR	1,905 MEUR	0,33%

Fraud prevention and detection

The Commission Anti-Fraud Strategy is binding for all Commission services and the executive agencies. The DGs and executive agencies of the research family also adhere to the Common Anti-Fraud Strategy in the Research Family (RAFS). For details on the RAFS please refer to the Fraud prevention and detection section of part 2.1.2.

The ECSEL Government Board adopted the Common Anti-Fraud Strategy in the Research Family (RAFS) in May 2015. ECSEL is represented in the Fraud and Irregularities in Research Committee and the majority of its staff members has participated in anti-fraud trainings since 2015.

The ENISA Management Board adopted an agency's Anti-Fraud Strategy and an action plan in October 2014. ENISA was involved in an OLAF Workshop "Train the trainers" and nominated an anti-fraud correspondent.

As regards the BEREC Office, anti-fraud rules and principles are built into the financial manual, in the internal instructions on ethical behaviour and in the information package to newcomers. The BEREC Office plans to adopt an anti-fraud strategy in the first half of 2017. As regards anti-fraud measures, newcomers are always informed on the principle and they sign the declaration of commitment. All staff members participated in January 2016 in a training on Internal Control Standards with special attention to ethical behaviour, where anti-fraud principles and whistleblowing were also discussed.

As regards the AAL Association, fraud is addressed in the Risk Management and Ex-post audit strategy for the AAL Joint Programme agreed between the Commission and the AALA in July 2015. It obliges the national programme management agencies to provide an overview of their audit system (and any changes) allowing the AAL Association to centrally assess control risks. In particular, they provide the AAL Association - and in turn the Commission - information concerning the audit and control procedures to prevent

¹⁹ Payment made to the Cultural and Creative Sectors Guarantee Facility in 2016.

fraud and irregularities, as well as the audit strategy to be deployed by the national funding bodies, including the methodology to select the grant agreements and the contract to be audited. Where necessary, based on this information, the Commission and the AAL Association may block further payments.

For the PBI financial instrument the asset management has been performed by the EIB. The main principles of fraud prevention are agreed between the Commission and the EIB. Since project bond financing has already been executed and bonds are transparently traded on the Paris stock exchange, this transparency is considered the central fraud prevention measure.

Conclusion on fraud prevention and detection for expenditure

Overall, given the anti-fraud measures and their implementation along with the other points mentioned it is considered that an effective and adequate fraud prevention and detection system is in place.

Other control objectives: Reliability of reporting

The DG involvement in the governance of the various entrusted entities did not show any events, issues or problems in the reporting process.

As regards ECSEL, the European Court of Auditors issued a qualified opinion on the accounts of ECSEL for the financial years 2013 to 2015 on the grounds of not being able to conclude if the ex-post audit strategy provides sufficient assurance with respect to the legality and regularity of underlying transactions. For more details please refer to sections 2.1.3 (sub-section: effectiveness as regards legality and regularity - ECSEL) and section 2.2 of this report.

Conclusion on reliability of reporting for expenditure

DG CONNECT considers that, overall, the reporting process of the various entities has been effective and appropriate in 2016. DG CONNECT nevertheless recognizes the importance of the Court's observation concerning ECSEL and will continue to provide its advice and support to the ECSEL JU in its efforts to address all the concerns of the European Court of Auditors and of the budgetary authorities. As explained in the section on effectiveness as regards legality and regularity (2.1.3), the scope and exposure of the FP7 reservation includes the CONNECT FP7 funds entrusted to AAL JP, Artemis and ENIAC/ECSEL. No further legality and regularity issues that would impact DG CONNECT's assurance were reported.

Estimated overall amount at risk "at closure"

The table below shows the calculation of the amounts at risk which gives an estimate of the overall risk relating to the legality and regularity of the underlying transactions. In case that a specific risk of error rate is not available for a category of expenditure, the average risk of error and amount at risk is presented as a range.

The amount is calculated based on an estimation of the average error rate (for CIP and FP7 it corresponds to the calculated detected error rates) and an estimation of the average recoveries and corrections. For the latter the overall 7 years average amounts to 1,4%. Where possible, this figure was adjusted to a more accurate, conservative estimate. In particular, for the CIP and FP7 programmes, the 7 years average rates of recoveries cashed of the programmes were used. For H2020, the 7 years average rate of FP7 recoveries cashed was used. Where no recoveries are expected (for administrative expenditure and procurement) a 0% rate was used. It should be noted that the approach taken is particularly conservative as the average recovery rates calculated for CIP and FP7 only cover those recoveries which were cashed, thereby excluding other recoveries and corrections such as suspended or open recoveries.

The resulting amount at risk is the AOD best, conservative estimation of the amount of expenditure authorised not in conformity with the applicable contractual and regulatory provisions at the time the payment is made for the year.

It should be noted that this overall presentation does not change the calculation of residual error rates to decide whether to qualify the declaration of assurance with reservations, whenever foreseen in their specific materiality criteria.

In the context of the protection of the EU budget, at the Commission's corporate level, the DGs' estimated overall amounts at risk and their estimated future corrections are consolidated.

Table X - Estimated overall amount at risk at closure

DG CONNECT	"payments made" (FY; m€)	<i>minus</i> new ^a prefinancing(in FY; m€)	<i>plus</i> cleared ^c prefinancing (in FY; m€)	= "relevant expenditure" ^d (for the FY; m€)	Average Error Rate (<i>weighted</i> AER; %) Between ... and ..		estimated overall amount at risk <i>at</i> <i>payment</i> (FY; €) Between ... and ...		Average Recoveries and Corrections (<i>adjusted ARC</i> ; %)	estimated future corrections[and deductions] (for FY; m€)	estimated overall amount at risk <i>at</i> <i>closure</i> ^e (m€) Between ... and ...	
Budget implemented by DG CNECT												
1- Programmes implemented by CNECT												
H2020	1229,30	934,17	228,14	523,27	2,00%	5,00%	10,47	26,16	0,62%	3,24	7,22	22,92
FP7	300,71	0,00	574,26	874,97	5,03%	5,03%	44,01	44,01	0,62%	5,42	38,59	38,59
CIP	32,34	0,16	62,32	94,50	9,56%	9,56%	9,03	9,03	0,80%	0,76	8,28	8,28
CEF (procurement)	4,39	0,00		4,39	0,00%	0,50%	0,00	0,02	0,00%	0,00	0,00	0,02
CEF (grants)	9,71	6,30	4,70	8,11	9,56%	9,56%	0,78	0,78	1,40%	0,11	0,66	0,66
Creative Europe	25,64	0,30	8,42	33,76	1,40%	2,00%	0,47	0,68	1,40%	0,47	0,00	0,20
Other	17,83	8,53	5,09	14,38	2,00%	3,00%	0,29	0,43	0,00%	0,00	0,29	0,43
Administrative expenditure	10,59	0,00	0,00	10,59	0,00%	0,50%	0,00	0,05	0,00%	0,00	0,00	0,05
Budget implementation tasks entrusted to other DGs and entities												
2- Implementing Bodies												
EIB - Project Bond Pilot Initiative (PBI)	0,00	0	0									
EIF - CCSGF	5,98	5,98	0	0,00	0,00%	0,50%	0,00	0,00	0,00%	0,00	0,00	0,00
ECSEL (H2020)	140,05	0	0	140,05	2,00%	5,00%	2,80	7,00	0,62%	0,87	1,93	6,13
ECSEL (FP7)	123,53	0	0	123,53	5,03%	5,03%	6,21	6,21	0,62%	0,77	5,45	5,45
AAL (H2020)	3,18	3,18	0	0,00	2,00%	5,00%	0,00	0,00	0,62%	0,00	0,00	0,00
AAL (FP7)	6,59	6,59	0,00	0,00	5,03%	5,03%	0,00	0,00	0,62%	0,00	0,00	0,00
Berec office	4,25	4,25	3,80	3,80	0,50%	1,00%	0,02	0,04	0,00%	0,00	0,02	0,04
ENISA	10,40	10,40	9,35	9,35	0,50%	1,00%	0,05	0,09	0,00%	0,00	0,05	0,09
3- Cross-subdelegation												
DGs and Offices	22,55	3,15	0,00	19,40	1,00%	2,00%	0,19	0,39	0,00%	0,00	0,19	0,39
Administrative expenditure	54,49	0,00	0,00	54,49	0,00%	0,50%	0,00	0,27	0,00%	0,00	0,00	0,27
Overall, total	2001,54	983,00	896,06	1914,59	3,88%	4,97%	74,32	95,17	0,61%	11,65	62,67	83,53

For DG CONNECT, the estimated overall amount at risk at payment²⁰ for the 2016 payments made is between 74,32 MEUR and 95,17 MEUR. This is the AOD's best, conservative estimation of the amount of relevant expenditure²¹ during the year (1914,59 MEUR) not in conformity with the applicable contractual and regulatory provisions at the time the payment is made.

This expenditure will be subsequently subject to ex-post controls and a sizeable proportion of the underlying error will be detected and corrected in successive years. The conservatively estimated future corrections²² for those 2016 payments made are 11,65 MEUR. This is the amount of errors that the DG conservatively estimates to identify and correct from controls that it will implement in successive years.

The difference between those two amounts leads to the estimated overall amount at risk at closure which is between 62,67 MEUR and 83,53 MEUR.

2.1.2 Audit observations and recommendations

This section reports and assesses the observations, opinions and conclusions reported by auditors in their reports as well as the opinion of the Internal Auditor on the state of control, which could have a material impact on the achievement of the internal control objectives, and therefore on assurance, together with any management measures taken in response to the audit recommendations.

Internal Audit Service (IAS)

During 2016, the IAS closed two audits and started one audit in DG CONNECT:

(1) IAS audit on HR Management

The final report was received on 28 September 2016 and concluded that the design and implementation of the HR management system in DG CONNECT ensures the achievement of its objectives.

While the audit did not result in the identification of any critical or very important issues, the IAS considers that there is room for further improvement in the following three specific areas:

- HR forward planning,
- Measures to cope with changes and HR targets (taxations, staff cuts in embedded overheads, Luxembourg agreement),
- Skills mapping and workload indicators.

(2) IAS audit on Closure of projects of legacy programmes in DG CONNECT

²⁰ In order to calculate the weighted average error rate (AER) for the total *relevant expenditure* in the reporting year, the *detected*, estimated or other equivalent error rates have been used.

²¹ "*relevant expenditure*" during the year = payments made, minus new pre-financing paid out, plus previous pre-financing cleared.

²² Even though based on the 7 years historic average of recoveries and financial corrections (ARC), which is the best available indication of the corrective capacity of the ex-post control systems implemented by the DG over the past years, the AOD has adjusted this historic average.

The final report was received on 30 January 2017 and concluded that the processes for managing the closure phase of legacy programmes was effectively implemented and ensured the effective closure of legacy programmes' projects.

While the audit did not result in the identification of any critical or very important issues, the IAS considered that there is room for further improvement in the following three specific areas.

- Monitoring of the de-commitment;
- Transfer of project files to Unit CNECT.R5 and archiving;
- Monitoring of complaints.

(3) IAS audit on H2020 Project Management

The IAS audit on H2020 Project Management started in December 2016 in DG CONNECT and the audit results are expected in the first half of 2017.

In line with the 2016 IAS Audit Plan, the IAS has performed a follow-up audit on a number of open recommendations from the following IAC and IAS audit engagements:

1. IAS Audit on the Implementation of FP7 Control Systems (including Supervision of External Bodies) in DG CONNECT
2. IAC Audit on Impact Assessment
3. IAC Audit on Delegated (Externalised) Research
4. IAS Audit on H2020 Grant Management in DG CONNECT: from the Preparation of the Work programme to the signature of the Grant Agreement.

The objective of this follow-up engagement was to assess the accepted DG CONNECT IAC and IAS recommendations that had been reported as implemented by DG CONNECT. This included two recommendations rated 'Very Important', nine rated 'Important' and two 'Desirable'.

Based on the results of their follow-up audit, the IAS assessed that all the recommendations reported as 'ready for review' by DG CONNECT resulting from the aforementioned four audits have been adequately and effectively implemented and were therefore closed in 2016.

Limited conclusion of the Internal Auditor on the state of Internal Control in DG CONNECT

In its contribution to the 2016 AAR process, IAS concludes that "*... the internal control systems audited are working satisfactorily*". This statement is based on all work undertaken by the IAS in the period 2014-2016.

In addition, the statement takes into account that:

- for the accepted recommendations made by the IAS and the IACs in 2014-2016, management has adopted plans to implement them which the IAS considers adequate to address the residual risks identified by the auditors,
- the implementation of these plans is monitored through reports by management and through follow-up audits by the IAS,
- management has assessed a number of action plans not yet followed up by the IAS as implemented, and
- management has not rejected any critical and/or very important recommendations.

The state of play of the implementation of IAS recommendations

The 2016 final overview report on the state of implementation of IAS recommendations lists 4 IAS audits with ongoing recommendations. Implementation of one important recommendation is overdue (see hereunder).

The Important recommendations which are ongoing relate to three audits:

a) IAS audit on policy design and management of IT access rights

- Recommendation No 5 (overdue) – Granting, Revising, withdrawing and revoking access rights. The new target date is 31/03/2017. This recommendation was re-opened by the IAS because, after a detailed review, the IAS concluded that two activities committed in the action plan were not yet properly addressed. A revised action plan has been defined by DG CONNECT with a planned implementation by 31 March 2017.

b) IAS audit on Human Resources Management

- Recommendation No 1 - HR forward planning
- Recommendation No 2 - Measures to cope with changes and HR targets (taxations, staff cuts in embedded overheads, Luxembourg agreement)
- Recommendation No 3 - Skills mapping and workload indicators.

c) IAS audit on Closure of projects of legacy programmes in DG CONNECT

- Recommendation No 1 - Monitoring of the de-commitment.
- Recommendation No 2 - Transfer of project files to Unit CNECT.R5 and archiving.
- Recommendation No 3 - Monitoring of complaints.

Control strategies in the Research area for the 2014 -2020 programmes

Given the importance of the changes introduced by H2020 and its new organisation, the IAS conducted a series of audit in the CSC and in a number of implementing bodies (DG RTD, DG CONNECT, ERCEA, EASME and INEA) to assess the preparedness of the management and control systems for the implementation of the new H2020 programme.

Although DG CONNECT was not mentioned for any critical issues in the 2015 Annual Internal Audit Report, it was however mentioned, together with the other research DG's for an "emphasis of matter" regarding the Control strategies in the Research area for the 2014-20 programmes.

In order to address the findings of the IAS, DG CONNECT adopted its H2020 Control Strategy on 18 October 2016. This document brings together the information on the different control measures for Horizon 2020 into one document.

The development of such a H2020 strategy was recommended by the Court of Auditors in its annual report for the year 2014.

Conclusion

As a result of the assessment of the risks underlying the auditors' observations together with the management measures taken or planned in response, the management of DG

CONNECT believes that the recommendations issued do not have any major impact on the declaration of assurance given in this report. The action plan to address the three important recommendations of the IAS audit on HR management and the action plan to address the three important recommendations of the IAS audit on closure of projects of legacy programmes in DG CONNECT are being implemented as planned. As regards the only important recommendation which is overdue (IAS audit on policy design and management of IT access rights), a revised action plan has been defined by DG CONNECT with a planned implementation by 31 March 2017.

Regarding the "emphasis of matter" concerning the control strategies in the Research area for the 2014-2020 programmes, the DG adopted its H2020 Control Strategy on 18 October 2016, incorporating the existing controls into a comprehensive and formalised control strategy which covers all stages of the grant management process.

All recommendations issued by the IAS are subject to a systematic follow-up and their status of implementation is closely monitored. Regular updates on the state of implementation of the recommendations were provided to the Audit, Control and Budgetary (ABC) Committee of DG CONNECT chaired by the Director-General.

European Court of Auditors (ECA)

Annual Report for 2015

In its Annual Report on the implementation of the budget for the financial year 2015, the Court concluded that the most likely error rate for the whole expenditure in the area of the EU activity 'Competitiveness for growth and jobs' was 4,4%.

The Court also stated that *"In 16 cases of quantifiable errors, the Commission, national authorities or independent auditors had sufficient information to prevent, or detect and correct the errors before accepting the expenditure. If all this information had been used to prevent, or detect and correct errors, the estimated level of error for this chapter would have been 0,6 percentage points lower."*

As a consequence of the higher error rate, the recommendations in the 'Competitiveness' area are the following:

- the Commission, national authorities and independent auditors should use all the relevant information available to prevent, or detect and correct errors before reimbursement;
- the Commission [should] issue guidance to beneficiaries on the specific differences in Horizon 2020 compared to the Seventh Research Framework Programme and similar programmes;
- the Commission [should] issue common guidelines to the implementing bodies for research and innovation spending, in order to ensure consistent treatment of beneficiaries when applying audit recommendations for the recovery of ineligible costs;
- the Commission [should] closely monitor the implementation of extrapolated corrections based on its ex-post audits of reimbursed costs under the Seventh Research Framework Programme.

The Commission accepted the Court's recommendations and has already taken action to fully address them.

Further to the above mentioned four recommendations, the ECA assesses in its 2015 Annual Report that from eight recommendations made in previous reports, one has been

fully implemented by the Commission, one was not applicable (anymore) in 2015 and the remaining six were implemented in most respects.

Special Reports

In July 2016 the ECA published a special report on Financial Instruments (*Implementing the EU budget through financial instruments — lessons to be learnt from the 2007-2013 programme period*), which concerned mainly DGs REGIO and ECFIN but DG CONNECT was involved in particular as regards the Project Bond Initiative/ Instrument. Overall the report resulted in a positive assessment but includes a number of recommendations which were mostly accepted by the Commission.

Furthermore, the ECA launched a performance audit on Public-Private Partnerships funded by the EU for which DG CONNECT is partly concerned (notably on a few ICT-broadband PPPs). The results will not be available before mid-2017 according to the time-schedule of the ECA.

Joint Undertakings

As in previous years, in its report on the annual accounts for 2014 concerning the Joint Undertakings ENIAC and ARTEMIS which were merged into ECSEL, the ECA reiterated its qualified opinion as regards the sufficient assurance on the ENIAC/ARTEMIS budget execution. The qualification is based on a negative assessment of the appropriateness of the audit strategies used by (a sample of) the national funding agencies which perform ex-post controls and on which the JUs partly rely for their assurance. Further measures of ECSEL during 2015/2016 however allowed the European Parliament to finally grant discharge for the 2014 accounts in October 2016. This 'heritage' issue is expected to still be addressed in the 2015 discharge debate. It will however not impact anymore the ECSEL operations under Horizon 2020 because the JU funding mechanism is no longer linked to the recognition of costs at national level.

2.1.3 Assessment of the effectiveness of the internal control systems

The Commission has adopted a set of internal control standards, based on international good practice, aimed to ensure the achievement of policy and operational objectives. In addition, as regards financial management, compliance with these standards is a compulsory requirement.

DG CONNECT has put in place the organisational structure and the internal control systems suited to the achievement of the policy and control objectives, in accordance with the standards and having due regard to the risks associated with the environment in which it operates.

DG CONNECT annually assesses the effectiveness of its key internal control systems, including the processes carried out by implementing bodies in accordance with the applicable Commission guidance. The assessment relies on a number of monitoring measures and sources of information including a survey-based management self-assessment, an analysis of the entries in the register of deviations, relevant IAS and ECA audit findings and observations and the annual high level risk assessment process.

Effective implementation of the Internal Control Standards

The DG's annual review of its implementation of the Internal Control Standards has been conducted between October and December 2016. Lead units responsible for ensuring compliance with the Internal Control Standards (ICS) were asked to provide a contribution on the implementation and effectiveness of the ICS, followed by a quality

review by the Compliance & Planning Unit. Where needed lead services were contacted for further details with respect to both the compliance and effectiveness of the control arrangements in place. This led to a 'top-down' assessment of the DG's internal control status, with respect to both the ICS compliance and the effectiveness of the control arrangements. Furthermore, the 'bottom-up' information on internal control issues received through the AOSDs' Management Reports has been checked for confirmation or any counter-indications. Finally, the IAS's opinion has been taken into account as well.

This analysis enabled the Internal Control Coordinator to report the state of internal control to the Director-General. The effectiveness review carried out in 2016 concluded that all Internal Control Standards were effectively implemented in DG CONNECT.

In 2016 the Commission revised the Internal Control Framework to match with the changes introduced in the Committee of Sponsoring Organisations of the Treadway Commission (COSO) framework. The new Internal Control Framework will consist of five internal control components and 17 principles. The main changes relate to moving from compliance to a principle-based internal control system. Implementation of the new Internal Control Framework is foreseen in 2017.

Deviations reporting

The functioning of the internal control systems is also assessed throughout the year by means of a systematic registration of exceptions and non-compliance events (under ICS 8) and internal control weaknesses (ICS 12). The DG has a system in place to ensure the recording of exceptions or non-compliance to procedures/rules through a process of justification by the initiating service, approval by the Director and the maintenance of a central risk register. The DG's procedure for reporting deviations is available on the DG's intranet.

During the year, a total number of 39 deviations were reported compared to 63 in 2015. These good figures may be considered as a positive outcome of the regular analysis of the reported cases which raised awareness of the most frequent deviations in the DG and an awareness raising note, circulated to the DG CONNECT Directors on 20 April 2016, explaining the procedure for reporting and recording deviations in DG CONNECT and its importance as an essential tool in identifying potential internal control weaknesses. The analysis of the underlying reasons of the reported deviations and internal control weaknesses concluded that they were not considered material enough to merit a reservation in the Declaration of Assurance.

DG CONNECT continued its pro-active supervision and frequent reporting, ensuring a timely implementation of all ECA and IAS audit recommendations. The state of implementation of audit recommendations is regularly reported to senior management in the Audit, Budget & Control (ABC) Committee. This mechanism has allowed DG CONNECT to significantly improve its performance in the implementation of audit recommendations. For further details see chapter 2.1.2.

ICS priority 2016

DG CONNECT prioritised ICS 3 (Staff Allocation and Mobility) considering that this ICS would again be a very critical internal control standard for 2016 because of the reorganisation of the DG, the continuing reduction of staff and the future transfer of units to Luxembourg. By the end of 2016, the measures proposed to enhance an effective implementation of this Internal Control Standard were satisfactorily implemented.

The annual high level risk assessment

Each year, DGs are required to conduct a risk management exercise as part of the Management Plan process. The exercise is designed to alert managers to possible problems in delivering their mission and objectives and encourage early action in order to

anticipate and overcome potential pitfalls. The outcome of this exercise is an obligatory risk register containing the most significant risks at DG level. Senior management identified no critical or cross cutting risk related to its specific or organisational management objectives for 2016.

Conclusion

DG CONNECT has assessed the internal control systems during the reporting year and has concluded that the internal control standards are implemented and functioning as intended. The DGs annual review showed that the internal control standards are effectively implemented and functioning. In addition, DG CONNECT has taken measures to further improve the effectiveness of its internal control systems in the area of Staff Allocation and Mobility (ICS 3). The DG maintains a central register of deviations and performs regularly an analysis of the reported cases. DG CONNECT's main risks are reported in the central risk register and regularly monitored. The implementation of IAS and ECA audit recommendations is reported on a monthly basis to senior management ensuring a timely implementation.

The DG generally complies with the three assessment criteria for effectiveness; i.e. (a) staff having the required knowledge and skills, (b) systems and procedures designed and implemented to manage the key risks effectively, and (c) no instances of ineffective controls that have exposed the DG to its key risks except for the FP7 and CIP ICT PSP error rates for which reservations are made. DG CONNECT therefore concludes that there is no further impact on the assurance given in this report.

Conclusions as regards assurance

2.1.4 Conclusions as regards assurance

This section reviews the assessment of the elements reported above (in Sections 2.1.1, 2.1.2 and 2.1.3) and draws conclusions supporting the declaration of assurance and whether it should be qualified with reservations.

The information reported in section 2.1 results from a systematic analysis of the evidence available. This approach provides sufficient guarantees as to the completeness and reliability of the information reported and results in a complete coverage of the budget delegated to the Director-General of DG CONNECT.

The statement of assurance is based on the analysis of the internal control system established in DG CONNECT supported by the conclusions of the audits from the IAS and ECA which did not highlight any critical recommendation, the IAS opinion, the full compliance with the Internal Control Standards and the reports received from cross delegated Authorising Officers by Delegation, the INEA, REA, EACEA and EASME executive agencies, the EIB, the ECSEL Joint Undertaking, the Active and Assisted Living Joint Programme and the BERC and ENISA Decentralised Agencies.

DG CONNECT's assessment on legality and regularity for the FP7 and CIP ICT PSP programmes return a level of detected error which appears to be "persistently high" over the years.

Concerning the financial operations under FP7, as the estimated residual error rate is above 2%, which is the materiality criterion for this programme, DG CONNECT, in accordance with the other members of the Research Family will maintain a reservation for FP7 expenditure.

For the financial operations under CIP ICT PSP, the results of the ex-post audits show that the detected error rates calculated over the last years are increasing. As it is expected that the 2% residual error rate target at the end of the programming period for CIP ICT PSP will not be attained, a reservation is made.

In its 2015 annual report, the Court of Auditors concludes on an error rate of 4,4% for the entire 2015 spending in the MFF chapter 'Competitiveness' (compared to 5,6% in the 2014 report). This error rate is almost entirely due to audit findings concerning cost declarations under FP7 and CIP.

FP7 reservation

Based on 398 cost statements for which the audit is completed (82% out of a sample of 486), the representative error rate from the Common Representative audit Sample (CRAS) is 5,03%. The remaining cases are still subject to contradictory procedures with the beneficiaries; consequently, the Common Representative Error Rate may still develop.

The Residual Error Rate based on the CRAS is 2,86%. The estimated amount at risk is 28,56 MEUR.

Taking into account the FP6 experience, and the need to balance legality and regularity with other objectives such as the attractiveness and the success of EU research policy, international competitiveness, scientific excellence, the wish to encourage participation of SMEs and the costs of controls, it is not expected that by the end of the programming period the Residual Error Rate will be below the materiality threshold defined in Annex 4 'Materiality Criteria'. For that reason, DG CONNECT maintains the reservation for FP7.

Action plan to address the reservation for FP7

The following framework conditions need to be borne in mind when considering remedial actions to further reduce the error rate under FP7:

A. Legal Framework

All of the contracts have been already signed under FP7, so further modification of the legal framework for FP7 is no longer an option. Over the course of FP7, however, the Commission has attempted to simplify the system within the existing legal framework.

Horizon 2020 includes a radical simplification of the legal framework for the Framework Programme for Research and Innovation (2014-2020), in order to meet the expectations of both stakeholders and legislative authorities.

B. Continued control and audit

The Common Audit Service (CAS) will carry out an appropriate number of ex-post audits based on cost-effectiveness considerations, as referred to above, together with the subsequent recovery actions to ensure a further reduction of the residual error rate. However, it cannot greatly extend its audit campaign without adversely affecting the other objectives of the research programme (attractiveness, reduction of administrative burden, widening, etc.)

Within these framework conditions and constraints, the remaining scope to reduce errors will be addressed through the following actions:

- Continuing its on-going efforts to give guidance and feedback to the participants and certifying auditors to prevent errors occurring;
- Continuing its control and audit work in order to further reduce the FP7 residual error rate (CAS). To reinforce the cleaning effect of the ex-post controls, a third Common Representative Audit Sample was launched in 2016.

CIP ICT PSP reservation

The results of the ex-post audits performed on CIP ICT PSP projects show a detected error rate of 9,56% for 2016 and a cumulated residual error rate of 8,92%, which is above the 2% materiality threshold. This residual error rate leads to an amount at risk of 8,43 MEUR.

These error rates should be considered with caution. As only 75 audits were used for their calculation, the error rates are not representative.

However, given that the residual error rate calculated for the CIP ICT PSP programme is higher than 2% and that it is expected that the 2% residual error rate target at the end of the programming period for CIP ICT PSP will not be attained, a reservation on CIP is maintained for the reporting period.

Action plan to address the reservation for CIP ICT PSP

As for FP7, it should be noted that the first projects for Horizon 2020 are already up and running and that all CIP contracts have already been signed, so further modification of the legal framework is no longer an option.

Horizon 2020 includes a radical simplification of the legal framework for the Framework Programme for Research and Innovation (2014-2020) which integrates CIP ICT PSP, in order to meet the expectations of both stakeholders and the legislator.

However, in order to further reduce the residual error rate of CIP ICT PSP, the DG will continue carrying out ex-post audits in line with the non-research ex-post control strategy and will continue its efforts to give guidance and feedback to the participants and certifying auditors to prevent errors occurring.

Horizon 2020

Given the stage of the programme lifecycle, very few cost claims were received by the services before the second half of 2016. Consequently, the first indications relative to the control results of a representative sample are expected for the next annual report.

For the purpose of the current report, the error rates affecting the payments made under Horizon 2020 programme result therefore from a preliminary estimation.

The financial statement accompanying the Commission's proposal to the legislative authority for the Horizon 2020 Regulation states: "The Commission considers therefore that, for research spending under Horizon 2020, a risk of error, on an annual basis, within a range between 2-5 % is a realistic objective taking into account the costs of controls, the simplification measures proposed to reduce the complexity of rules and the related inherent risk associated to the reimbursement of costs of the research project. The ultimate aim for the residual level of error at the closure of the programmes after the financial impact of all audits, correction and recovery measures will have been taken into account is to achieve a level as close as possible to 2 %."

Without other elements allowing an assessment of the level of errors, the detected error rate is estimated, in a conservative estimate, to a range of 2-5%. The residual error rate cannot be calculated following the formula set in Annex 4, however, taking into account the FP7 experience, it is likely that this residual error rate will be close to 2%.

2015 Annual Internal Audit Report of the IAS: emphasis of matter

Although DG CONNECT was not mentioned for any critical issues in the 2015 Annual Internal Audit Report of the IAS, it was however mentioned, together with the other research DGs for an "emphasis of matter" concerning the control strategies in the Research area for the 2014-20 programmes. DG CONNECT consequently adopted an

H2020 Control Strategy, incorporating the existing controls into a comprehensive and formalised control strategy which covers all stages of the grant management process.

Overall Conclusion

In conclusion, management has reasonable assurance that, overall, suitable controls are in place and working as intended; risks are being appropriately monitored and mitigated; and necessary improvements and reinforcements are being implemented. The Director General, in his capacity as Authorising Officer by Delegation has signed the Declaration of Assurance qualified by a reservation concerning the rate of the residual errors with regard to the accuracy of cost claims in the Seventh Research Framework Programme (FP7) and a reservation concerning the rate of the residual errors with regard to the accuracy of cost claims in the ICT Policy Support Programme of the Competitiveness and Innovation framework Programme (CIP ICT PSP).

Declaration of Assurance and reservations

I, the undersigned, Roberto Viola

Director-General of the Communication Networks, Content & Technology Directorate-General

In my capacity as authorising officer by delegation.

Declare that the information contained in this report gives a true and fair view²³.

State that I have reasonable assurance that the resources assigned to the activities described in this report have been used for their intended purpose and in accordance with the principles of sound financial management, and that the control procedures put in place give the necessary guarantees concerning the legality and regularity of the underlying transactions.

This reasonable assurance is based on my own judgement and on the information at my disposal, such as the results of the self-assessment, ex-post controls, the opinion of the Internal Auditor on the state of control, the observations of the Internal Audit Service and the lessons learnt from the reports of the Court of Auditors for years prior to the year of this declaration.

Confirm that I am not aware of anything not reported here which could harm the interests of the institution.

However the following reservations should be noted:

Reservations concerning the rate of residual errors with regard to the accuracy of costs claims for grants in the 7th Research Framework Programme and the ICT Policy Support Programme of the Competitiveness and Innovation framework Programme (CIP ICT PSP).

Brussels, 31 March 2017

Signed

Roberto Viola

²³ True and fair in this context means a reliable, complete and correct view on the state of affairs in the DG.

Reservation 1. Concerning the rate of the residual errors with regard to the accuracy of cost claims in the Seventh Research Framework Programme (FP7).

DG	DG CONNECT
Title of the reservation, including its scope	Reservation concerning the rate of the residual errors with regard to the accuracy of cost claims under the Seventh Research Framework Programme (FP7).
Domain	Grants in the Seventh Research Framework Programme.
ABB activity and amount affected (= "scope")	FP7 payments made by DG CONNECT in 2016 including the FP7 budget of DG CONNECT entrusted to ECSEL and the AAL Association: 430,85 MEUR from the 1.860,46 MEUR total for ABB 09.04.
Reason for the reservation	At the end of 2016, the residual error rate is not below the materiality threshold. It is not expected that the residual error rate will be below the 2% threshold at the end of the programming period.
Materiality criterion/criteria	The materiality criterion is the residual error rate, i.e. the level of errors that remains undetected and uncorrected, by the end of the management cycle. The control objective is to ensure that the residual error rate on the overall population is below 2% at the end of the management cycle. As long as the residual error rate is not below 2% at the end of a reporting year within the FP's management lifecycle, a reservation would be made.
Quantification of the impact (= actual exposure")	The maximum impact is calculated by multiplying the residual error rate in favour of the Commission by the amount of FP7 interim and final payments based on cost statements authorised in 2015 by DG CONNECT plus the amount of the pre-financing expenditure cleared in 2016. The Representative Error Rate for 2016 is 5,03%. The Residual Error Rate is 2,86%. The estimated amount at risk is 28,56 MEUR. (28,56 MEUR=2,86%*998,5 MEUR)
Impact on the assurance	Legality and regularity of the affected transactions, i.e. exclusively payments made against cost claims (interim payments and final payments). The assurance is affected within the scope of the quantified budgetary impact (the net amount at risk estimated at 28,56 MEUR).
Responsibility for the weakness	The main reason for errors is : -the complexity of the eligibility rules as laid down in the basic acts decided by the Legislative Authorities, based on the reimbursement of actual eligible costs declared by the beneficiaries; -the fact that there are many thousands of beneficiaries making claims, and not all can be fully controlled. The different control provisions set out by the Commission services, along with the audit certificates on financial statements and ex-post audits, can mitigate these risks to a certain extent, but can never be carried out on 100% of the cost claims received.

Responsibility for the corrective action	<p>The possibilities to simplify the FP7 rules have been exhausted. The programme is now in its final stage of implementation: the total amount paid per year will be decreasing, and therefore the financial impact too.</p> <p>In order to limit the error rate in the remaining part of the programme, the following actions are applied:</p> <ul style="list-style-type: none"> - continuous efforts to give guidance and feedback to the participants and certifying auditors to prevent errors occurring; - continuous control and audit work in order to further reduce the FP7 residual error rate: a third common representative audit sample has been launched and partially closed.
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Reservation 2. Concerning the rate of the residual errors with regard to the accuracy of cost claims in the ICT Policy Support Programme (PSP) of the Competitiveness and Innovation framework Programme (CIP).

DG	DG CONNECT
Title of the reservation, including its scope	Reservation concerning the rate of the residual errors with regard to the accuracy of cost claims in the ICT Policy Support Programme (PSP) of the Competitiveness and Innovation framework Programme (CIP).
Domain	Direct management grants in the Competitiveness and Innovation framework Programme (CIP)
ABB activity and amount affected ("scope")	CIP ICT PSP payments made by DG CONNECT in 2016 (32,3MEUR from the 1.860,46 MEUR total for ABB 09.04)
Reason for the reservation	At the end of 2016, the residual error rate is not below the materiality threshold. It is not expected that the residual error rate will be below the 2% threshold at the end of the programming period.
Materiality criterion/criteria	<p>The materiality criterion is the residual error rate, i.e. the level of errors that remains undetected and uncorrected, by the end of the management cycle.</p> <p>The control objective is to ensure that the residual error rate on the overall population is below 2% at the end of the management cycle. As long as the residual error rate is not (yet) below 2% at the end of a reporting year within the FP's management lifecycle, a reservation would be made.</p>
Quantification of the impact (= actual exposure")	<p>The maximum impact is calculated by multiplying the residual error rate in favour of the Commission by the amount of interim and final payments based on cost statements authorised in 2016 by DG CONNECT plus the amount of the pre-financing expenditure cleared in 2016. The Cumulative Error Rate for 2016 is 9,56%, while the Residual Error Rate is 8,92%. The estimated amount at risk for 2016 payments is 8,43 MEUR. (8,43 MEUR=8,92%*94,49 MEUR)</p> <p>However, given the low number of audits used to determine the cumulative and the residual error rates (75 ex-post audits covering 40,2 MEUR representing 8,2% of the requested EU contribution), the above mentioned error rates should be considered with caution.</p> <p>It is nevertheless expected that the 2% residual error rate target at the end of the programming period for CIP ICT PSP will not be attained.</p>
Impact on the assurance	Legality and regularity of the affected transactions, i.e. exclusively payments made against cost claims (interim payments and final payments). The assurance is affected within the scope of the quantified budgetary impact (the net amount at risk estimated at 8,43 MEUR).

Responsibility for the weakness	The Legislative Authorities for the funding rules in the basic acts which are complex, the beneficiaries and the certifying auditors for the incorrectness of cost claims and audit certificates, and the Commission services for the management and control systems in place.
Responsibility for the corrective action	<p>The first projects for Horizon 2020 are already up and running and that all of the contracts have been already signed under CIP, so further modification of the legal framework is no longer an option.</p> <p>Horizon 2020 includes a radical simplification of the legal framework, in order to meet the expectations of both stakeholders and legislative authorities.</p> <p>However, in order to further reduce the residual error rate of CIP ICT PSP, DG CONNECT will continue carrying out ex-post audits in line with the ex-post control strategy and will continue its efforts to give guidance and feedback to the participants and certifying auditors to prevent errors occurring.</p>

2.2 Other organisational management dimensions

2.2.1 Human resource management

During 2016, the main challenges for DG CONNECT in the area of HR management have been the overall human resources reduction, the reduction in support levels and the increase of DG CONNECT presence in Luxembourg. Within this context, DG CONNECT further explored new ways of working in search of further efficiency gains.

Resources allocation

In light of the overall pressure on human resources, DG CONNECT carefully monitored the allocation of human resources in light of political and operational priorities, while meeting its yearly obligations in terms of resources reduction as laid down by the Budgetary Authority. This included the redeployment of staff from support functions to operational activities and the gradual increase of DG CONNECT presence in Luxembourg, in accordance with the yearly targets set out by DG HR.



40% women in management

In order to contribute to the 40% target of women in management positions at Commission level, DG CONNECT provided pre-management opportunities to talented AD women which were also supported in their career aspirations along 2016. This included the Women Development Programme with a 360 degree development component. The continuous efforts will pave the way for further first-time appointments of women which will contribute to the 40% target at Commission level.

Learning & Development

In order to properly equip DG CONNECT staff with the necessary skills/competences/knowledge required for the completion of the DG's political and operational priorities, DG CONNECT management approved a Learning & Development Strategy tailored to the needs of the DG.

Staff survey action plan

DG CONNECT continued the implementation of specific actions in follow-up to the 2014 Commission staff satisfaction survey. Although these actions were still considered as relevant in light of the results of the 2016 staff survey, DG CONNECT focused on developing a new action plan in response to the most recent (2016) staff survey. DG CONNECT follow-up action plan for the 2016 staff survey will be communicated to DG HR by first quarter of 2017.

2.2.2 Better regulation

In 2016, the main challenges/successes for DG CONNECT in the area of better regulation have been:

- The proactive contribution to revising the Better Regulation guidelines and toolbox, to

reflect initial lessons drawn after the first year of operation as well as to clarify and strengthen guidance on a number of issues and tools which are key to DG CONNECT;

- The mid-year transfer of responsibilities for Impact Assessment Support, Public Consultation Support and Better Regulation coordination to the Policy and Outreach unit, whilst maintaining continuity of service.

DG CONNECT worked on developing some 13 different impacts assessments.

The Impact Assessment indicator of success shows a satisfactory result of 56% (which meets our 2016 interim milestone target of getting an IA success rate in the same range as the average success rate across DGs) since 5 out of the 9 IAs first presented to the RSB in 2016 received straight away a positive opinion from the RSB. Note that a third of the IAs which we first submitted this year were REFIT Reviews performed back to back with a retrospective evaluation (two of which were huge exercises, more akin to a Fitness checks).

Further, DG CONNECT also performed 13 retrospective evaluations (of which 8 were completed in 2016). DG CONNECT also contributed to the Interim Evaluation of H2020 and to the Mid-term Evaluation of Connecting Europe Facility – Telecommunications, which is still ongoing.

An estimated 73% of the DG's primary regulatory acquis has undergone a retrospective evaluation or Fitness Check in the past 5 years.

2.2.3 Information management aspects

During the year, the DG identified strong and modern IT-based solutions to support access right management which were evaluated by DG HR and are planned to be explored in cooperation with DIGIT as possible long-term corporate solutions.

DG CONNECT also managed to improve its performance in the volume of filed documents with only 0,79% of registered documents which are not filed. The number of files shared with other DGs (18,66%) is still below the targeted indicator of 95% but measures are now in place to achieve the targets initially planned.



In order to mitigate the risk of leaks that affected the DG in the beginning of the reporting year, DG CONNECT decided to limit access to its internal files based on strict need-to-know principles.

DG CONNECT has set a knowledge management strategy to improve operational efficiency and organisational intelligence. A Deputy Director-General of DG CONNECT is member of the Information Management Steering Board, which steers the implementation of the Communication on Data, Information and Knowledge Management.

2.2.4 External communication activities

2016 was the second full year of communicating the Digital Single Market under the Juncker Commission. There remains an explicit delineation between political communication (managed centrally by the SPP and supported by DG COMM via a limited number of IPs, speeches, the Commission's website and Commissioners' social media, and in which the DGs role is limited to content creation), and stakeholder communication, where DGs are given more latitude. The focus in 2016 was on communicating around the many DSM legislative and policy initiatives which followed one another in quick succession, and the mechanisms set up to deal with these files generally delivered successfully.



However, the biggest challenge we faced in 2016 was not a DSM-related file, but part of the legacy of the previous Commission - Roaming. The biggest commitment of resources now needs to be a combined policy and communication focus on ensuring that we can deliver on the Commission's commitment to end Roaming charges on 15th June.

Our impact in 2016 in key figures:

- While the **overall coverage of DSM**-related issues was up 20% at nearly 100.000 articles in 2016, the proportion of that coverage driven by Commission output (press releases, speeches, statements, digibytes, chapeaux...) increased by 64%, approaching 100 articles per communication, almost double the level of 2015;
- DG CONNECT's experts and press tem contributed to at least 20 press releases, 12 Memos, 47 digibytes and 60 LTTs and answered more than 140 media queries on hot topics in 2016.
- The **leading positive message** remains a consumer-focussed one: "promoting a consumer friendly DSM", with 2.5% of coverage (4% in 2015).
- The **leading negative message** was about the DSM impact on business: "EU/EC does not make doing business easier and better". This was mostly driven by issues around the AV sector, platforms and the UK creative sector speaking out against copyright proposals. In absolute terms, however, it was a minor issue, **affecting only 0.12% of coverage (compared to 0.22% 2015)**.
- **Hot topics:** Roaming remained the top story of 2016 (see below for deeper analysis). Coverage of May's announcements on AVMSD, Geo-blocking and platforms were particularly favourable (80% positive). Copyright and connectivity announcements from September's State of the EU speech were strongly linked. 61% of coverage was positive, but copyright also triggered some negative reactions (IPs, save the link, publishers' rights).
- **Web presence:** In 2016, the DAE website was rebranded into Digital Single website to align with the political priority. The website suffered (a) some loss of traffic of -3.6% in 2016 due to the quick revamp and the new positioning by DG COMM making the DSM site a sub-site of Next Europa and (b) lost position on search engines. We managed to slowly regain positions in the search engine lists. Thanks to Search Engine Optimization and work on metadata we are now second, which is the highest rank we will achieve.
- The **DSM Twitter** community grew by 24% to 66.720 followers. The most successful tweet triggered [477 interactions](#). But following the rebranding from DAE to DSM, the average Engagement per post decreased by 14% to 25 interactions. Facebook activity is up 12% and engagement per post doubled to 39

interactions. This has been triggered by better optimisation of our posts, focusing on audio-visual elements and by new way Facebook's algorithm displays posts. The top engagement peaks were the Digital Assembly (end Sept), Copyright & Connectivity (14/9) and Mobile World Congress (end Feb). The volume of mentions of the thematic accounts (how much other users are talking about us) increased by 30% in 2016 and doubled over the past 2 years.

- **Audio visual:** Web-streaming via YouTube ensured that our events reached audiences far beyond those who could fit into the conference venue (2.200 viewers alone for the DA2016 plenary). The MEDIA 25 clip had greatest success in the DSM YouTube account with 175.000 views for the FR version, partly attributable to the promotion made as part of the MEDIA 25 campaign.
- The **DSM blog** continued to be an important communications channel, with 90 posts this year, each viewed on average 175 times (up 34% on 2015). The top 5 most read blogs concerned the state of play of Open Data in Europe. eIDAS implementing acts, the new FinTech task force, EU-US cooperation for a better usability of open data and the Innovation Radar finalists.

The examples of economy and efficiency

Initiatives to improve economy and efficiency of financial and non-financial activities

In order to better align its organisational structure to the new political priorities, and taking into account the outcome of the synergies and efficiency review, DG CONNECT addressed the necessary requirements of an agile and effective organisation through **organisation chart changes** that entered into effect on 1 July 2016. These changes led to a better alignment of DG CONNECT's organisational structure with the Commission priorities set out by President Juncker, while meeting the HR requirements as regards synergies and efficiency gains and contributing to the implementation of the political agreement to gradually increase Commission staff and services in the digital pole in Luxembourg as of 2018.

Like other DGs of the Research Family, DG CONNECT delegated in part the execution of its Horizon 2020 budget management to executive agencies to improve the economy and efficiency of budget management at Commission level. Within that context, DG CONNECT takes measures to optimize duties and improve efficiency. For example, **Innovation Radars** involve external experts in project reviews in charge of gathering structured data about innovation and go-to-market needs in EU-funded projects. The Innovation Radar approach was initiated by DG CONNECT and is now used by executive agencies. Furthermore, as the Innovation Radar is not specific to ICT, the Common Support Service and DG CONNECT are exploring its possible use in non-digital themes of Horizon 2020.

In 2016, the redefinition by DG CONNECT of the role of its staff involved in the management of Research & Innovation contracts (i.e. **from "Project Officer" to "Programme Officer"**) entered into the first year of implementation. Experience showed that the approach fits well with the new organisational lines of DG CONNECT, which became effective in July 2016. Indeed, the activities of the majority of Directorates and Units integrate both Research & Innovation and policy functions. This new approach has proved powerful (i) to improve the evidence base of the policy priorities of DG CONNECT, (ii) to increase staff empowerment and satisfaction, and (iii) to achieve higher efficiency gains (through frequent involvement of Programme Officers in the handling of DSM policy files and their participation in networks of expertise, thematic clusters and knowledge-sharing activities within DG CONNECT).

To adapt processes and tools aligned with our business and political priorities and to capitalize on the staff expertise and promote cross DG collaboration, the decision was taken in 2016 to set up **project teams** around cross-cutting and key issues (e.g. Observatory of labour market linked to digitisation, Artificial Intelligence, Innovation Radar, Horizontal strands of liability, etc.). These teams can draw on the knowledge-sharing possibilities of the 'Connected' collaboration platform.

The Commission has identified knowledge management and collaborative working as a strategic priority in order to streamline, accelerate and update internal work to make the organisation fit for 21st century challenges. The ABM Steering Group of 7 July 2016 recognised the merits of the **Connected platform as an efficiency enhancing tool for better collaboration and knowledge sharing at the Commission**, and endorsed a step by step approach to rolling out the tool for other interested DGs. The "Connected Commission" project aims to make a general state-of-the-art collaborative working tool and approach available to all staff in the Commission. DG JRC (as new business owner), DG HR, SG and DG DIGIT (as new service provider) are collectively resourcing a Core Project Team, which is providing coordinated services for Connected. Transfer of ownership from DG CONNECT to DG JRC occurred on 1 March 2017 and migration of infrastructure from DG CONNECT to DG DIGIT will follow.

To improve its data analysis capacity to support the DSM policy priorities in a

timely manner, DG CONNECT has developed advanced data analytics pilots (DORIS) to support policy making and operation that are recognised within and outside our DG as leading-edge technologies. DORIS benefits the DSM by providing useful tools for the preparation and monitoring of its actions. Its key functional blocks are:

- a dashboard for analysing and visualising the feedback provided by stakeholders to Online Public Consultations via the Better Regulation/ EU Survey portal.
- platforms providing assistance for experts matching and portfolio analysis based on unsupervised (data-driven) machine learning techniques.
- a set of algorithms and tools to process textual and structured data and extract relevant information such as the key topics, relevant sentences, named entities (people, organisations,...), keywords, and as well as stakeholder sentiment.
- a network analysis tool to better understand the links between entities and topics, etc.

DG CONNECT has developed a toolkit, called Futurium, to quickly and cheaply build **engagement platforms for evidence based policymaking**. Futurium offers the possibility to create and manage engagement communities for policymaking and foresight that are open to everyone's participation, consultative rather than deliberative, experimental, low cost/risk, flexible, but also structured with evidence support. The toolbox is designed to be flexible and transparent, enabling a viral engagement process that nevertheless allows diverse variables to be exploited to analyse the results.

The **Stakeholder Relation Management (SRM) tool** was enhanced with new functionality and data sources including connecting to the Transparency Register and EUSurvey to incorporate answers to our public consultations. Around 200 users have been trained and given access to the tool. The Commission's ABM Steering Group recognised the need for an SRM tool and agreed to that the SRM pilot can be extended and will become an inter-service project with interested DGs.

To further simplify the organisation structure and processes in order **to minimise the number of full time equivalents working in support functions** DG CONNECT also launched several initiatives in search of efficiency gains: (i) simplification of financial circuits; (ii) virtual pooling of financial support within the area of programme implementation; (iii) rationalisation and close monitoring of administrative secretarial support per unit; (iv) internal redeployment of support functions (including colleagues formerly involved in HR matters within the context of the new DG CONNECT HR governance) to operational activities; (v) set-up of internal virtual task forces (see above); and, (vi) centralisation of the financial and contractual handling of procurement files. This last initiative created efficiency gains in term of resources but also improves the rationalisation of studies procurement in DG CONNECT thanks to a re-design process that addresses (i) a closer monitoring of studies by senior management and (ii) more coherence between the studies through a gap analysis helping identifying information needs and overlaps, in support of our policy making. In order to achieve the reduction in support levels agreed with central services, DG CONNECT did not replace externally any support position falling vacant. The resources being freed were either used to meet taxation requirements, or redeployed to operational activities.

DG CONNECT is continuing to reinforce its **100% digital approach in communicating and using mainly internal resources** (no framework contracts or other big campaign contracts) for our communication: social media, press & AV material and content for the web. We work closely with DG COMM & SPP services for our output so that there is no duplication of efforts and resources. DG CONNECT makes an extra effort to localise also our content via our multipliers: stakeholders, REPs, journalists, digital champions, etc. Finally, in the context of the web transformation work of DG COMM, DG CONNECT is a key partner in making the DSM website the first site to be following the new europa2.0 theme and our web-developers are working together with DG COMM and DG DIGIT developers for the benefit of all the other DGs that will follow on transforming their own web presence in the course of the next coming years.