



2018

Annual Activity Report

Annexes

**DG Communications
Networks, Content
and Technology**

Table of Contents

ANNEX 1:	STATEMENT OF THE DIRECTOR IN CHARGE OF RISK MANAGEMENT AND INTERNAL CONTROL	3
ANNEX 2:	REPORTING – HUMAN RESOURCES, BETTER REGULATION, INFORMATION MANAGEMENT AND EXTERNAL COMMUNICATION	4
ANNEX 3:	DRAFT ANNUAL ACCOUNTS AND FINANCIAL REPORTS	13
ANNEX 4:	MATERIALITY CRITERIA	32
ANNEX 5A:	RELEVANT CONTROL SYSTEM(S) FOR BUDGET IMPLEMENTATION (RCSs)	37
ANNEX 6:	IMPLEMENTATION THROUGH NATIONAL OR INTERNATIONAL PUBLIC-SECTOR BODIES AND BODIES GOVERNED BY PRIVATE LAW WITH A PUBLIC SECTOR MISSION.....	57
ANNEX 7:	EAMR OF THE UNION DELEGATIONS (NOT APPLICABLE).....	62
ANNEX 8:	DECENTRALISED AGENCIES	63
ANNEX 9:	EVALUATIONS AND OTHER STUDIES FINALISED OR CANCELLED DURING THE YEAR	64
ANNEX 10:	SPECIFIC ANNEXES RELATED TO ‘FINANCIAL MANAGEMENT’	69
ANNEX 11:	SPECIFIC ANNEXES RELATED TO ‘ASSESSMENT OF THE EFFECTIVENESS OF THE INTERNAL CONTROL SYSTEMS’ (NOT APPLICABLE)	75
ANNEX 12:	PERFORMANCE TABLES	76

ANNEX 1: Statement of the Director in charge of Risk Management and Internal Control

I declare that in accordance with the Commission's communication on the internal control framework¹, I have reported my advice and recommendations on the overall state of internal control in the DG/Executive Agency to the Director-General/Executive Director.

I hereby certify that the information provided in the present Annual Activity Report and in its annexes is, to the best of my knowledge, accurate and complete.'

e-signed

Morten Fjalland

¹ C(2017)2373 of 19.04.2017.

ANNEX 2: Reporting – Human Resources, Better Regulation, Information Management and External Communication

Human resources

Objective: The DG deploys effectively its resources in support of the delivery of the Commission's priorities and core business, has a competent and engaged workforce, which is driven by an effective and gender-balanced management and which can deploy its full potential within supportive and healthy working conditions.

Indicator: Percentage of female representation in middle management.

Source of data: HR Reporting

Baseline 1.1.2016	Target 2019	Latest known results
28.9%	40%	34% on 16.12.2018

Indicator: First appointments of female middle managers

Source of data: HR Reporting

Baseline 1.5.2017	Target 2019	Latest known results
9	+6	+4 on 16.12.2018 (+6 on 01.01.2019)

Indicator 2: Percentage of staff who feel that the Commission cares about their well-being.

Source of data: Commission staff survey.

Baseline 2014	Target 2019	Latest known results
33.5%	50% by end 2019 This target is in line with the DG CONNECT results in the 2013 staff satisfaction survey and slightly above the current EC average.	57%(2018)

Indicator 3: Staff engagement index.

Source of data: Commission staff survey.

Baseline 2014	Target 2019	Latest known results
62	70 by end 2019 This target is in line with the DG CONNECT results in the 2013 staff satisfaction survey and with the current EC average.	68% (2018)

Main outputs in 2018:			
Description	Indicator	Target	Latest known results
Follow-up on the Women Development programme which included 360 degree feedback + coaching sessions, planned actions for 2018: close monitoring of all females in pre-management positions, steering the women in pre-management network, feedback by the Chair of pre-selection panels to female candidates who were not selected for HoU posts, training for interview preparation.	Number of female applicants shortlisted in each pre/middle-management selection procedure	At least 1.	Results of 7 (Deputy) Heads of Unit recruitment procedures: 1°) 2 female shortlisted applicants out of 5. Male appointment. 2°) 1 female shortlisted applicant out of 3. Male appointment. 3°) 4 female shortlisted applicants out of 5. Male appointment 4°) 2 female shortlisted applicants out of 6. Female appointment 5°) 3 female shortlisted applicants out of 7. Selection ongoing 6°) 3 female shortlisted applicants out of 5. Female appointment 7°) 1 female shortlisted applicant out of 6. Male appointment
Close monitoring and management of job quotas / budget and careful assessment of replacements for every departure, in light of the operational and political priorities	Taxation targets met within the deadlines set by the budgetary authority.	Staff reduction laid down in the 2018 allocation of establishment plan posts (-4%) and the appropriations for external personnel.	All taxations targets due by 1.1.2018 and 1.1.2019 are met. Monthly monitoring of consumptions of appropriations for external personnel at HRC led to controlled 2018 consumption within the budgetary ceiling
Learning & Development Strategy tailored to the skills/competences/ knowledge required for the completion of our operational and political priorities.	L&D priorities to be adopted as part of the overall HR strategy for the DG.	Complete curriculum reflecting newly identified requirements.	2018 L&D priorities were adopted by the management team on 18/12/2017. The Final DG CONNECT's L&D Priorities for 2019 were endorsed by MT on 21/01/2019.
Reduction of support functions to focus resources on operational activities.	Reduction of FTEs in support functions under scrutiny by DG HR.	FTE reduction in support functions in accordance with targets agreed with central services: -30 for 2018 -75 cumulative 2016-2018	Monthly monitoring of reduction of support functions at HRC. 2018 target are met.

Increase of DG CONNECT presence in Luxembourg within the Digital Pole.	Increase of FTEs in Luxembourg.	FTE increase in accordance with targets agreed with central services: +40 for 2018 +60 cumulative over 2017-2018	2018 targets are met.
Develop and monitor the implementation of the DG action plan as a follow-up to the 2018 Commission staff satisfaction survey.	Staff Engagement Index within the 2018 Commission staff satisfaction survey.	Staff Engagement Index of 65.	The target is met. The 2018 Staff engagement index is 68% with a 68% DG CONNECT participation rate to the survey.
Well-being activities organised at DG CONNECT within the context of the Fit@Work Programme.	Number of well-being activities organised within DG CONNECT in close cooperation with AMC3.	<ul style="list-style-type: none"> - 2 series of well-being trainings per year - 3 blood donation sessions - weekly well-being activities - ad hoc workshops to build resilience depending on staff needs (based on staff survey) 	<p>Ongoing cooperation with AMC on well-being activities, largely extended on Beaulieu site, within the context of the corporate Fit@work programme.</p> <p>1 well-being training (Mindfulness 8 week-course) organized;</p> <p>3 Blood Donations;</p> <p>Easter Eggs Sale;</p> <p>Aromatherapy;</p> <p>AMC Day;</p> <p>2 Walk in the Park;</p> <p>VeloMai events:</p> <p>Opening breakfast (by DG REGIO)</p> <p>4 Lunchtime bike rides – 2 picnics. Closing breakfast (by DG CONNECT);</p> <p>Seated massage in Beaulieu;</p> <p>Sound meditation in Beaulieu;</p> <p>Health week 22/10-26/10/2018, includes well-being workshops: resilience, ergonomics, digital overload;</p> <p>Parents@Work initiative:</p> <p>Workshop with parents,</p> <p>Workshop with managers.</p>

Better regulation

Objective: Prepare new policy initiatives and manage the EU's acquis in line with better regulation practices to ensure that EU policy objectives are achieved effectively and efficiently.

Indicator 1: Percentage of Impact assessments submitted by DG CONNECT to the Regulatory Scrutiny Board that received a favourable opinion on first submission.

Source of data: DG CONNECT and the Regulatory Scrutiny Board²

Baseline 2015	Interim milestone 2016	Target 2020	Latest known results 2018
68% = Commission average in 2014: We use the percentage of 2014, as the CONNECT value for 2015 is 100 % (2 out of the 2 IA submitted) because this figure has limited significance as DG CONNECT had very few IAs in 2015.	Positive trend compared to the DG's 2014 situation.	Positive trend compared to the DG's 2016 situation.	4 IAs submitted to the RSB, 3 with favourable opinion.
The 2018 IA indicator reflects that out of four IAs submitted to the RSB for the first time in 2018, ³ one received a negative opinion of the RSB, ⁴ followed by a positive opinion with reservations. The remaining three IAs received a positive opinion (though with reservations) in the first instance. This represents a rate of 75%.			

Indicator 2: Percentage of the DG's primary regulatory acquis covered by evaluations and Fitness Checks not older than five years.

Source of data: DG CONNECT

Baseline 2015	Interim milestone 2016	Target 2020	Latest known results 2018
Percentage of the DG's primary regulatory acquis covered by retrospective evaluations and Fitness Checks not older than five years: 67%.	Positive trend compared to baseline	Positive trend compared to interim milestone	67%
This indicator's value for 2016 has been recalculated to ensure comparability (by means of streamlining and removal of acquis items being less than 5 years old unless they have already undergone an evaluation or fitness check). The recalculated 2016 value is 61% (instead of 75%).			
Main outputs in 2018:			
The main planned outputs linked to the Better Regulation objective in the Strategic Plan are listed in Part 1 under the relevant specific objective. They are presented in the tables under the headings 'All new initiatives and REFIT initiatives from the Commission Work Programme' and 'Other			

² According to the Impact Assessment Board (IAB) 2014 statistics and the Regulatory Scrutiny Board Annual report 2016, which do not provide details per DG, there were 25 IAs examined in 2014 and 10 required resubmission, so 15 received positive opinion on first submission (60%).

³ Proposal for a Directive on the reuse of public sector information (recast) - COM(2018)234 final; Proposal for a Regulation on the implementation and functioning of the .eu Top Level Domain name and repealing Regulation (EC) No 733/2002 and Commission Regulation (EC) No 874/2004 - COM(2018)231 final; Proposal for a Regulation establishing the Digital Europe programme for the period 2021-2027 - COM(2018)434 final; Proposal for a Regulation establishing the European Cybersecurity Industrial, Technology and Research Competence Centre and the Network of National Coordination Centres - COM(2018)630 final.

⁴ Proposal for a Regulation establishing the Digital Europe programme for the period 2021-2027 (COM/2018/434 final).

important items’.			
Description	Indicator	Target	Latest known results
Commission proposal on the Council regulation for setting up the Euro HPC Joint Undertaking	Adoption by the Commission	Q1 2018 (PLAN/2017/1304)	Commission adopted the proposal on 11 January 2018.
Legislative proposal on fairness in platform-to-business relations.	Adoption by the Commission	Q1 2018 (PLAN/2017/1375)	Commission adopted the legislative proposal on 26 April 2018; political agreement on 13 February 2019.
Communication on artificial intelligence and robotics	Adoption by the Commission	Q1 2018 (PLAN/2017/1777)	Commission adopted the Communication on 25 April 2018.
Communication on Digital Transformation of Health and Care in the Digital Single Market	Adoption by the Commission	Q1 2018 (PLAN/2017/1353)	Commission adopted the Communication on 25 April 2018.
Legislative proposals for a revision of Regulation (EC) 733/2002 establishing the '.eu' TLD and Regulation (EC) 874/2004 laying down public policy rules concerning the implementation and functions of the '.eu' TLD.	Adoption by the Commission	Q2 2018 (2017/CONNECT/006) (CWP2017)	Commission adopted the legislative proposal on 27 April 2018.
Evaluation of the Directive 96/9/EC on the legal protection of databases	Adoption of the Evaluation Report (SWD)	Q2 2018 (2017/CONNECT/004)	Commission adopted the SWD on 25 April 2018.
Review of Directive 2013/37/EU on the re-use of public sector information (REFIT)	Adoption by the Commission.	Q2 2018 (PLAN/2017/1391)	Commission adopted the legislative proposal and the SWD on the evaluation supporting the review on 26 April 2018.
Review of the Significant Market Power guidelines	Adoption by the Commission.	Q2 2018 (2017/CONNECT/011)	Commission adopted the Communication and the accompanying SWD on 27 April 2018.
Communication Tackling online disinformation: a European Approach	Adoption by the Commission	Q2 2018 (PLAN/2017/1783)	Commission adopted the Communication on 26 April 2018.

Information Management

Objective: Information and knowledge in DG CONNECT is shared and reusable by other DGs. Important documents are registered, filed and retrievable		
Indicator 1: Percentage of registered documents that are not filed⁵ (ratio)		
Source of data: Hermes-Ares-Nomcom (HAN)⁶ statistics		
Baseline 2015	Target 2016	Latest known results 2018
3.07 %	0 %	0.61 %
Indicator 2: Number of HAN files readable/accessible by all units in the DG		
Source of data: HAN statistics		
Baseline 2015	Target 2016	Latest known results 2018
98.63 %	95% ⁷	92.61%
Indicator 3: Number of HAN files shared with other DGs		
Source of data: HAN statistics		
Baseline 2015	Target 2016	Latest known results 2018
22.55 %	95% ⁸	14.26% ⁹
Indicator 4: Percentage of units using collaborative tools to manage their activities		
Source of data: CONNECTED + SharePoint		
Baseline 2015	Target 2016	Latest known results 2018
95% ¹⁰	100% ¹¹	100% for CONNECTED 100% for SharePoint

Main outputs in 2018:			
Description	Indicator	Target	Latest known results
Provide training and coaching on document registration and filing	Training/coaching of unit secretariat and DMO correspondent	100% of units trained/coached	Training on Ares & Areslook: all units and directorate offices have received the training.
Awareness campaigns	a) 1 for Areslook; b) 1 for Windows 10 and Eurolook10/ c) 1 for AresBridgefor SharePoint & Connected d) 1 for Connected and SharePoint	Q4 2018	Awareness campaign on IT-tools 'Which tool to use for what' (brochure covering all tools) distributed to all staff. a) EuroLook, Ares & Areslook: all units and directorate offices have received the training. b) Windows10 / Office 2016: nothing specific for DG CONNECT, users get info from corporate campaign.

⁵ Each registered document must be filed in at least one official file of the Chef de file, as required by the e-Domec policy rules (and by ICS 11 requirements). The indicator is to be measured via reporting tools available in Ares.

⁶ Suite of tools designed to implement the e-Domec policy rules.

⁷ HR and OLAF files remain restricted; this is why 100% is not the target. A renewed file sharing policy will be investigated in the course of 2019 in line with the new marking system.

⁸ Same comment as in footnote 41.

⁹ In addition to 'Staff Matter' and OLAF files, further restrictions were recommended by IAS, e.g. on procurement files, which resulted in an overall decrease of the shared files ratio.

¹⁰ According to the most recent figures, 95% of staff are at least 'readers', while 70% are 'contributing'.

¹¹ All units are encouraged to use collaborative tools but, some categories of personnel (e.g. ushers) are not concerned.

			c) Aresbridge for SharePoint & Connected: pending integration of Aresbridge. d) Connected: Nothing specific for DG CONNECT (as the DG is not the only user of Connected).
Launch of a data analytics service (Doris Drive-In) available to all staff to perform analysis of documents and data	50% of operational units using the service at least once	Q3 2018	A first version is already deployed and accessible to all from the Commission Network. A user manual has been created.
Creation of a taxonomy reflecting the scope of DG CONNECT	To screen and re-organise the content of Connected, SharePoint and Ares to make it more retrievable and linked	Q2 2019	The Connected Directorate E space (the pilot Directorate), has been cleaned and reorganised. Out of total 57 places, 32 have been archived. 1400 Documents have been curated and the learned tags inserted in an R3 tagging engine. We are working now to link this repository back to Connected once access to the platform will be available from DG DIGIT.
Enhancement of Stakeholder Relationship Management (SRM)	Integration with Basis workflow. Enrichment of stakeholders information with data from other systems (Corda, Orbis)	Q2 2018	Integration with ORBIS completed and Database acquired. Integration with Basis is ongoing and will be completed in 2019. Adaptation to the new data protection rules ongoing, which will entail a clean-up of stakeholder database.
Roll-out of the Windows 10 and Unified Communication and Collaboration (UCC)	Training and coaching of staff	Q3 2018	Windows10/Office 2016: nothing specific for DG CONNECT, users are informed through corporate campaigns. UCC: in addition to corporate information and trainings, additional information sessions to all DG CONNECT staff in Brussels and Luxembourg. Regular updates also on Connected.
Rationalisation and adoption of DG CONNECT Standard Operating Procedures (SOP)	New SOP and one-stop-shop dashboard available to all staff. Awareness raising and coaching	Q2 2018	Completed. In addition to requests for updating individual SOPs and other guidelines; the Connected-team checked monthly if updates were needed.

External Communication

Objective: Citizens perceive that the EU is working to improve their lives and engage with the EU. They feel that their concerns are taken into consideration in European decision making and they know about their rights in the EU.

Indicator 1: Percentage of EU citizens having a positive image of the EU

Definition: Eurobarometer measures the state of public opinion in the EU Member States. This global indicator is influenced by many factors, including the work of other EU institutions and national governments, as well as political and economic factors, not just the communication actions of the Commission. It is relevant as a proxy for the overall perception of the EU citizens. Positive visibility for the EU is the desirable corporate outcome of Commission communication, even if

individual DGs’ actions may only make a small contribution.

Source of data: Standard Eurobarometer (DG COMM budget) [monitored by DG COMM [here](#)].

Baseline Q4 2014	Target 2020	Latest known results	
Total 'Positive': 39%	Positive image of the EU ≥ 50%	59%	
Neutral: 37 %			
Total 'Negative': 22%			
Main outputs in 2018:			
Description	Indicator	Target	Latest known results (31.12.2018)
How many people we have reached through our communication activities	1) People reading the Digital Single Market website	Yearly median 7 127 Unique browsers per day (baseline 7 127) (keep at least stable)	Yearly median 7 753 unique browsers per day (8% increase)
	2) People participating in our events	Total of registrations for events (currently Event in the Box accounts only 78 000 (baseline 73 053)(increase 6%)	Total of 83 960 registrations (15% increase)
	4) People reading any of the DSM Newsletters	Total of Newsroom subscription for newsletters 250 000 (base line 237 162) (increase 5.4%)	Total of 264 091 subscription (11% increase)
	5) People following DSM Facebook page	Total of DSM Facebook likes 29 000 Likes (baseline 23 551) (increase 23%)	Total of 28 812 likes (22% increase)
	6) People following DSM Twitter account	Total of DSM Twitter followers 88 000 (increase 20%)	Total of 87 180 (increase 11%)
How people interacted with us on the base of our communication activities	1) Engagement with DSM Facebook page	Cumulative monthly average 1 190 points engagement (baseline 1 189) (keep stable)	Cumulative monthly average 866 points (drop due to change in the Facebook algorithms)
	2) Engagement with DSM Twitter account	Cumulative monthly average 8 000 points engagement (baseline 7 991) (keep stable)	Cumulative monthly average 8 501 points (6% increase)
Participation in the ICT women event	People attending ICT Women event	100 participants	318 participants
Participation in Code Week 2018	People attending Code Week 2018 events	1.5 million participants	2.7 million participants
Participation in Digital assembly	People attending Digital Assembly	1000 participants	1354 participants
Digital Day II	People attending Digital Day II	200 participants	700 participants
Digital Skills and Jobs Coalition conference	People attending the Digital Skills and Jobs Coalition conference	350 participants	470 participants
Participation in the ICT 2018 event	People attending ICT 2018	5000 participants	4800 participants

Annual communication spending (based on estimated commitments):			
Baseline (2017)	Target (2018)	Total amount spent in (2018) ¹²	Total of FTEs working on external communication
EUR 5.4 million	EUR 9 million	EUR 1.95 million ¹³	20.18

¹² This number was calculated on the basis of budget spent for purely external communication activities also for DG CONNECT events (other costs for organising an event have not been taken into account); one third of the expenditure went to media and social media monitoring contracts which, strictly defining, is not expense for external communication but used to improve our communication.

ANNEX 3: Draft annual accounts and financial reports

Annex 3 Financial Reports - DG CNECT - Financial Year 2018

Table 1 : Commitments

Table 2 : Payments

Table 3 : Commitments to be settled

Table 4 : Balance Sheet

Table 5 : Statement of Financial Performance

Table 5 Bis: Off Balance Sheet

Table 6 : Average Payment Times

Table 7 : Income

Table 8 : Recovery of undue Payments

Table 9 : Ageing Balance of Recovery Orders

Table 10 : Waivers of Recovery Orders

Table 11 : Negotiated Procedures (excluding Building Contracts)

Table 12 : Summary of Procedures (excluding Building Contracts)

Table 13 : Building Contracts

Table 14 : Contracts declared Secret

Table 15 : FPA duration exceeds 4 years

TABLE 1: OUTTURN ON COMMITMENT APPROPRIATIONS IN 2018 (in EUR million)					
			Commitment appropriations authorised	Commitments made	%
			1	2	3=2/1
Title 09 Communications networks, content and technology					
09	09 01	Administrative expenditure of the 'Communications networks, content and technology' policy area	65.43067663	65.2939355	99.79 %
	09 02	Digital single market	21.98493305	21.862626	99.44 %
	09 03	Connecting Europe Facility (CEF) - Telecommunications networks	24.29471651	24.2875124	99.97 %
	09 04	Horizon 2020	1739.648326	1567.56876	90.11 %
	09 05	Creative Europe	22.7115	22.71	99.99 %
Total Title 09			1874.070152	1701.72283	90.80%
Title 15 Education and culture					
15	15 04	Creative Europe	28.301217	28.301217	100 %
Total Title 15			28.301217	28.301217	100 %
Total DG CNECT			1902.371369	1730.02405	90.94 %

* Commitment appropriations authorised include, in addition to the budget voted by the legislative authority, appropriations carried over from the previous exercise, budget amendments as well as miscellaneous commitment appropriations for the period (e.g. internal and external assigned revenue).

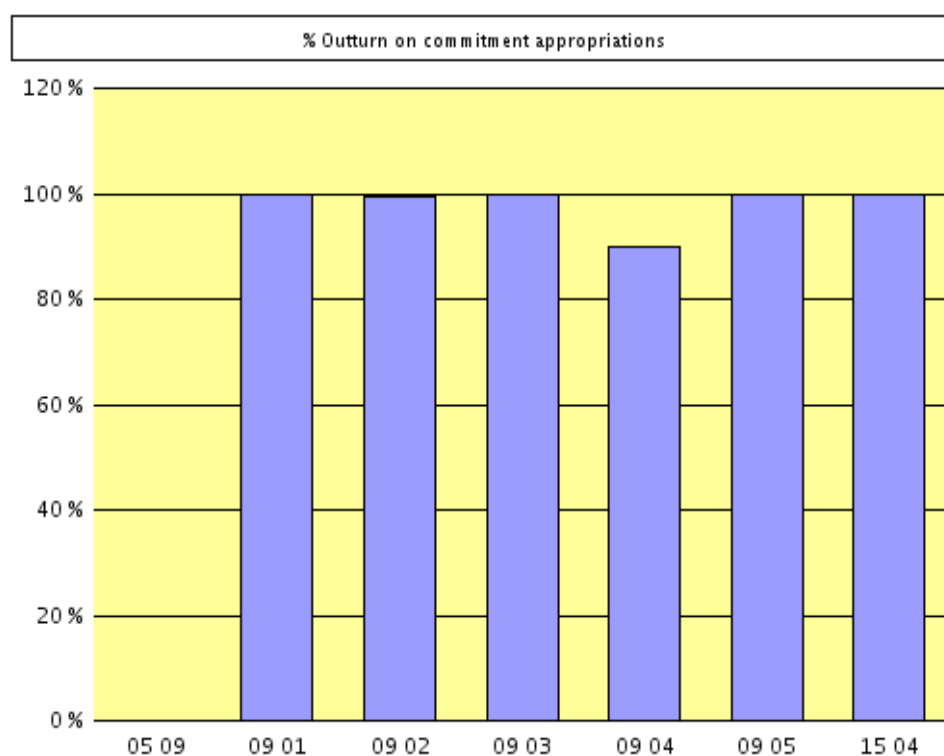


TABLE 2: OUTTURN ON PAYMENT APPROPRIATIONS IN 2018 (in EUR million)					
Chapter			Payment appropriations authorised *	Payments made	%
			1	2	3=2/1
Title 05 Agriculture and rural development					
05	05 09	Horizon 2020 - Research and innovation related to agriculture	2.45560078	2.45560078	100 %
Total Title 05			2.45560078	2.45560078	100%
Title 09 Communications networks, content and technology					
09	09 01	Administrative expenditure of the 'Communications networks, content and technology' policy area	19.53265416	11.77368574	60.28 %
	09 02	Digital single market	20.51236326	20.38968362	99.40 %
	09 03	Connecting Europe Facility (CEF) - Telecommunications networks	37.98193804	25.02084945	65.88 %
	09 04	Horizon 2020	1977.808931	1671.631335	84.52 %
	09 05	Creative Europe	18.79708449	18.79558449	99.99 %
Total Title 09			2074.632971	1747.611138	84.24%
Title 15 Education and culture					
15	15 04	Creative Europe	15.1364455	15.1364455	100 %
Total Title 15			15.1364455	15.1364455	100%
Total DG CNECT			2092.225017	1765.203185	84.37 %

* Payment appropriations authorised include, in addition to the budget voted by the legislative authority, appropriations carried over from the previous exercise, budget amendments as well as miscellaneous payment appropriations for the period (e.g. internal and external assigned revenue).

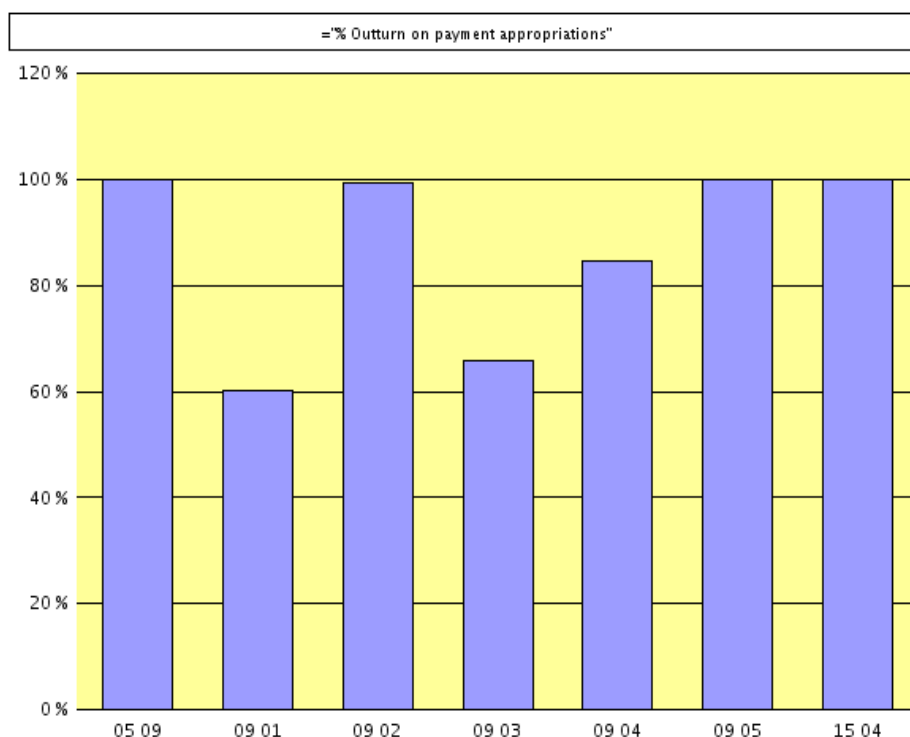


TABLE 3 : BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2018 (in EUR million)									
Chapter			2018 Commitments to be settled				Commitment s to be settled from financial years previous to 2018	Total of commitments to be settled at end of financial year 2018	Total of commitment s to be settled at end of financial year 2017
			Commitment s 2018	Payment s 2018	RAL 2018	% to be settled			
			1	2	3=1-2	4=1-2/1	5	6=3+5	7
Title 05 : Agriculture and rural development									
0509	0509	Horizon 2020 - Research and innovation related to agriculture	0	0.00	0	0.00 %	4.54	4.54	7.00
Total Title 05			0	0.00	0	0.00%	4.5443616	4.5443616	6.99996238
Title 09 : Communications networks, content and technology									
0900	0900	Administrative expenditure of the 'Communications networks, content and technology' policy area	65.29393548	56.75	8.54194302	13.08 %	0.00	8.54	9.22
	0900	Digital single market	21.862626	16.53	5.33364653	24.40 %	2.79	8.12	6.98
	0900	Connecting Europe Facility (CEF) - Telecommunications networks	24.28751244	1.30	22.98422956	94.63 %	144.41	167.40	171.80
	0900	Horizon 2020	1567.568759	787.93	779.6401376	49.74 %	912.12	1 691.76	1832.79
	0900	Creative Europe	22.71	0.04	22.665871	99.81 %	12.48	35.15	31.25
Total Title 09			1701.722833	862.56	839.1658277	49.31%	1071.804734	1910.970562	2052.03639
Title 15 : Education and culture									
1504	1504	Creative Europe	28.30121699	0.56	27.73756486	98.01 %	6.80	34.54	21.57
Total Title 15			28.30121699	0.56	27.73756486	98.01%	6.7997167	34.53728156	21.5659728
Total DG CNECT			1730.02405	863.12	866.9033926	50.11 %	1083.148812	1950.052205	2080.60233

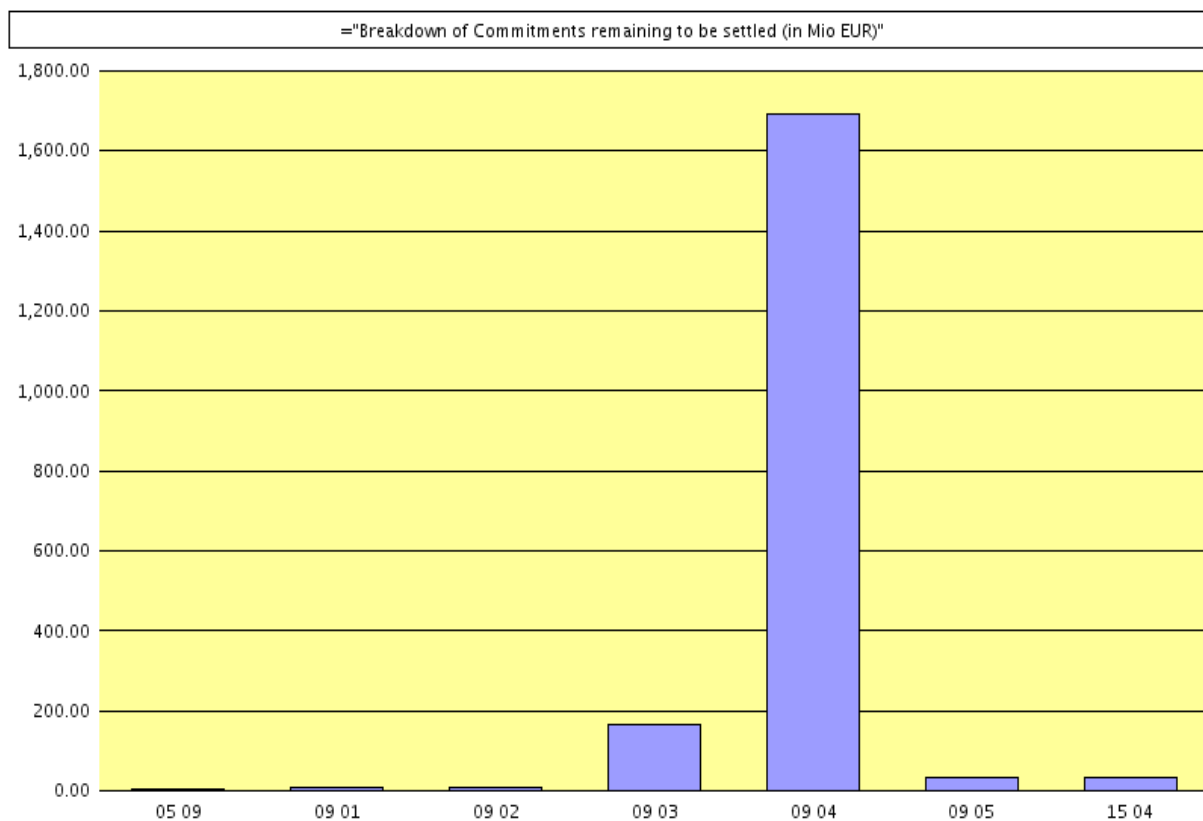


TABLE 4 : BALANCE SHEET CNECT

BALANCE SHEET	2018	2017
A.I. NON CURRENT ASSETS	749 574 941.76	378 786 798.57
A.I.1. Intangible Assets	-	5 360 322.99
A.I.3. Invstmnts Acctnd For Using Equity Meth	-	-
A.I.4. Non-Current Financial Assets	16 159 919.66	16 970 980.00
A.I.5. Non-Current Pre-Financing	731 978 132.10	356 455 495.58
A.I.6. Non-Cur Exch Receiv & Non-Ex Recoverab	1 436 890.00	
A.II. CURRENT ASSETS	761 756 549.04	830 167 214.26
A.II.1. Current Financial Assets	1 264 028.46	1 521 146.46
A.II.2. Current Pre-Financing	682 345 554.46	756 532 132.60
A.II.3. Curr Exch Receiv & Non-Ex Recoverables	48 258 321.12	53 777 545.20
A.II.6. Cash and Cash Equivalents	29 888 645.00	18 336 390.00
ASSETS	1 511 331 490.80	1 208 954 012.83
P.I. NON CURRENT LIABILITIES	- 8 808 829.00	- 2 562 303.00
P.I.2. Non-Current Provisions	- 8 808 829.00	- 2 562 303.00
P.III. NET ASSETS/LIABILITIES	886 990.00	- 155 644.00
P.III.1. Reserves	886 990.00	- 155 644.00
P.II. CURRENT LIABILITIES	- 232 948 788.48	- 283 755 827.95
P.II.2. Current Provisions	- 2 261 035.14	- 163 983.24
P.II.4. Current Payables	- 57 907 728.63	- 76 874 904.05
P.II.5. Current Accrued Charges & Defrd Income	- 172 780 024.71	- 206 716 940.66
LIABILITIES	- 240 870 627.48	- 286 473 774.95
NET ASSETS (ASSETS less LIABILITIES)	1 270 460 863.32	922 480 237.88

P.III.2. Accumulated Surplus/Deficit	7 903 539 168.10	6 317 629 692.32
--------------------------------------	------------------	------------------

Non-allocated central (surplus)/deficit*	- 9 174 000 031.42	- 7 240 109 930.20
--	--------------------	--------------------

TOTAL	0.00	0.00
--------------	-------------	-------------

TABLE 5 : STATEMENT OF FINANCIAL PERFORMANCE CNECT

STATEMENT OF FINANCIAL PERFORMANCE	2018	2017
II.1 REVENUES	- 7 182 834.61	- 21 073 580.33
II.1.1. NON-EXCHANGE REVENUES	- 5 408 482.70	- 19 536 826.65
II.1.1.5. RECOVERY OF EXPENSES	- 5 198 806.97	- 18 660 304.27
II.1.1.6. OTHER NON-EXCHANGE REVENUES	- 209 675.73	- 876 522.38
II.1.2. EXCHANGE REVENUES	- 1 774 351.91	- 1 536 753.68
II.1.2.1. FINANCIAL INCOME	- 256 628.00	- 128 297.00
II.1.2.2. OTHER EXCHANGE REVENUE	- 1 517 723.91	- 1 408 456.68
II.2. EXPENSES	1 377 620 893.47	1 606 983 056.11
II.2. EXPENSES	1 377 620 893.47	1 606 983 056.11
II.2.10. OTHER EXPENSES	22 145 361.24	19 182 140.45
II.2.2. EXP IMPL BY COMMISS&EX.AGENC. (DM)	1 075 087 158.01	1 272 789 454.96
II.2.3. EXP IMPL BY OTH EU AGENC&BODIES (IM)	235 334 472.98	298 933 111.65
II.2.4. EXP IMPL BY 3RD CNTR & INT ORG (IM)		146 456.88
II.2.5. EXP IMPL BY OTHER ENTITIES (IM)	45 000 199.66	15 920 291.96
II.2.8. FINANCE COSTS	53 701.58	11 600.21
STATEMENT OF FINANCIAL PERFORMANCE	1 370 438 058.86	1 585 909 475.78

TABLE 5bis : OFF BALANCE SHEET CNECT

OFF BALANCE	2018	2017
OB.1. Contingent Assets	172 310.00	2 239 349.79
GR for pre-financing	172 310.00	2 239 349.79
OB.2. Contingent Liabilities	- 18 804 386.00	- 18 804 386.00
OB.2.1. Guarantees given for EU FI	- 18 804 386.00	- 18 804 386.00
OB.2.7. CL Legal cases OTHER	-	-
OB.3. Other Significant Disclosures	- 1 719 716 860.25	- 1 813 490 644.38
OB.3.2. Comm against app. not yet consumed	- 1 719 716 860.25	- 1 813 490.644.38
OB.4. Balancing Accounts	1 738 348 936.25	1 830 055 680.59
OB.4. Balancing Accounts	1 738 348 936.25	1 830 055 680.59
OFF BALANCE	-	-

TABLE 6: AVERAGE PAYMENT TIMES FOR 2018 - DG CNECT

Legal Times							
Maximum Payment Time (Days)	Total Number of Payments	Nbr of Payments within Time Limit	Percentage	Average Payment Times (Days)	Nbr of Late Payments	Percentage	Average Payment Times (Days)
17	1	1	100.00 %	9			
19	1	1	100.00 %	14			
20	1	1	100.00 %	6			
28	1	1	100.00 %	17			
30	3176	3126	98.43 %	12.92450416	50	1.57 %	41.3
39	1	1	100.00 %	32			
41	1	1	100.00 %	14			
45	7	7	100.00 %	32.14285714			
46	1	1	100.00 %	19			
60	189	188	99.47 %	25.66489362	1	0.53 %	85
75	1	1	100.00 %	6			
90	623	615	98.72 %	59.28130081	8	1.28 %	131.125
103	3				3	100.00 %	108
120	21	21	100.00 %	20.47619048			

Total Number of Payments	4027	3965	98.46 %		62	1.54 %	
Average Net Payment Time	21.35088155			20.7962169			56.82258065
Average Gross Payment Time	34.01539608			33.41967213			72.11290323

Suspensions							
Average Report Approval Suspension Days	Average Payment Suspension Days	Number of Suspended Payments	% of Total Number	Total Number of Payments	Amount of Suspended Payments	% of Total Amount	Total Paid Amount
1	39	1303	32.36 %	4027	483 678 665.51	36.42 %	1 328 003 461.13

Late Interest paid in 2018			
DG	GL Account	Description	Amount (Eur)
CNECT	65010100	Interest on late payment of charges New FR	22 208.08
			22 208.08

TABLE 7 : SITUATION ON REVENUE AND INCOME IN 2018

Chapter		Revenue and income recognized			Revenue and income cashed from			Outstanding balance
		Current year RO	Carried over RO	Total	Current Year RO	Carried over RO	Total	
		1	2	3=1+2	4	5	6=4+5	
52	REVENUE FROM INVESTMENTS OR LOANS GRANTED, BANK AND OTHER INTEREST	13 058.00	62.00	13 120.00	13 058.00	-	13 058.00	62.00
57	OTHER CONTRIBUTIONS AND REFUNDS IN CONNECTION WITH THE ADMINISTRATIVE OPERATION OF THE INSTITUTION	131 756.17	-	131 756.17	131 756.17	-	131 756.17	-
64	CONTRIBUTIONS FROM FINANCIAL INSTRUMENTS	1 085 679.25	-	1 085 679.25	1 085 679.25	-	1 085 679.25	-
66	OTHER CONTRIBUTIONS AND REFUNDS	20 178 034.64	40 939 504.24	61 117 538.88	13 377 489.27	5 158 292.50	18 535 781.77	42 581 757.11
90	MISCELLANEOUS REVENUE	164 160.40	2 314 444.24	2 478 604.64	133 838.09	244 303.34	378 141.43	2 100 463.21
Total DG CNECT		21 572 688.46	43 254 010.48	64 826 698.94	14 741 820.78	5 402 595.84	20 144 416.62	44 682 282.32

TABLE 8 : RECOVERY OF PAYMENTS
(Number of Recovery Contexts and corresponding Transaction Amount)

INCOME BUDGET RECOVERY ORDERS ISSUED IN 2018	Irregularity		OLAF notified		Total undue payments recovered		Total transactions in recovery context (incl. non-qualified)		% Qualified/Total RC	
	Nbr	RO Amount	Nbr	RO Amount	Nbr	RO Amount	Nbr	RO Amount	Nbr	RO Amount
Year of Origin (commitment)										
2004	2	155 316.54			2	155 316.54	3	167 154.31	66.67%	92.92%
2005	1	16 405.35			1	16 405.35	2	18 045.89	50.00%	90.91%
2006	9	406 668.35			9	406 668.35	11	506 607.30	81.82%	80.27%
2007	20	589 940.09	3	85 834.00	23	675 774.09	29	709 520.00	79.31%	95.24%
2008	28	2 374 122.21	3	98 483.20	31	2 472 605.41	33	2 483 893.56	93.94%	99.55%
2009	24	913 723.97	5	337 789 00	29	1 251 512.97	35	1 301 627.04	82.86%	96.15%
2010	43	1 298 416.52	7	568 420.30	50	1 866 836.82	60	1 924 869.82	83.33%	96.99%
2011	38	1 255 147.82	4	425 746.00	42	1 680 893.82	55	1 994 957.34	76.36%	84.26%
2012	27	571 386.62	2	280 923.00	29	852 309.62	37	1 392 718.62	78.38%	61.20%
2013	47	4 592 328.00	1	274 718.00	48	4 867 046.00	58	5 930 574.29	82.76%	82.07%
2014	26	310 061.36			26	310 061.36	35	702 931.30	74.29%	44.11%
2015	5	244 672.15			5	244 672 15	6	282 938.72	83.33%	86.48%
2017	2	674.38			2	674.38	6	127 500.25	33.33%	0.53%
No Link	6	789 272.21			6	789 272.21	11	3 738 431.86	54.55%	21.11%
Sub-Total	278	13 518 135.57	25	2 071 913.50	303	15 590 049.07	381	21 281 770.30	79.53%	73.26%

EXPENSES BUDGET	Error		Irregularity		OLAF Notified		Total undue payments recovered		Total transactions in recovery context (incl. non-qualified)		% Qualified/Total RC	
	Nbr	Amount	Nbr	Amount	Nbr	Amount	Nbr	Amount	Nbr	Amount	Nbr	Amount
INCOME LINES IN INVOICES			57	422 021.52			57	422 021.52	57	422 021.52	100.00%	100.00%
NON ELIGIBLE IN COST CLAIMS			117	4 827 141.92			117	4 827 141.92	306	35 317 200.50	38.24%	13.67%
CREDIT NOTES			19	64 515.98			19	64 515.98	30	601 782.65	63.33%	10.72%
Sub-Total			193	5 313 679.42			193	5 313 679.42	393	36 341 004.67	49.11%	14.62%
GRAND TOTAL			471	18 831 814.99	25	2 071 913.50	496	20 903 728.49	774	5 622 774.97	64.08%	36.28%

TABLE 9: AGEING BALANCE OF RECOVERY ORDERS AT 01/01/2019 FOR CNECT

	Number at 01/01/2018	Number at 01/01/2019	Evolution	Open Amount (Eur) at 01/01/2018	Open Amount (Eur) at 01/01/2019	Evolution
2002	2	2	0.00 %	737 418.19	737 418.19	0.00 %
2003	1	1	0.00 %	350 703.53	350 703.53	0.00 %
2004	4	4	0.00 %	455 707.50	455 707.50	0.00 %
2005	1	1	0.00 %	126 071.93	126 071.93	0.00 %
2006	5	4	-20.00 %	504 054.93	388 670.18	-22.89 %
2007	1	1	0.00 %	32 796.68	3 796.59	-88.42 %
2008	11	11	0.00 %	1 655 788.71	1 655 788.71	0.00 %
2009	25	24	-4.00 %	4 069 558.09	4 023 734.07	-1.13 %
2010	31	28	-9.68 %	3 348 885.80	2 860 008.70	-14.60 %
2011	61	56	-8.20 %	8 164 443.09	7 671 614.28	-6.04 %
2012	37	36	-2.70 %	1 906 396.88	1 751 909.14	-8.10 %
2013	31	28	-9.68 %	2 164 951.47	2 101 690.26	-2.92 %
2014	34	31	-8.82 %	4 539 736.21	4 241 753.76	-6.56 %
2015	28	24	-14.29 %	970 842.20	753 866.20	-22.35 %
2016	37	29	-21.62 %	5 968 746.21	4 355 764.65	-27.02 %
2017	77	32	-58.44 %	8 404 391.87	6 519 399.76	-22.43 %
2018		60			6 902 755.58	
	386	372	-3.63 %	43 400 493.29	44 900 653.03	3,46 %

TABLE 10 : RECOVERY ORDER WAIVERS IN 2018 >= EUR 60.000						
	Waiver Central Key	Linked RO Central Key	RO Accepted Amount (Eur)	LE Account Group	Commission Decision	Comments
1	3233180126	3241213185	-143 572.08	Private Companies	C(2018)4546 of 18/07/2018	Legal basis of Waiver: Article 80(2) of the Financial Regulation (Regulation (EU, Euratom) No 966/2012) and Article 91(1)(b) of its Rules of Application
2	3233180129	3240809202	-115 384.75	Private Companies	C(2018)4802 of 25/07/2018	Legal basis of Waiver: Article 80(2) of the Financial Regulation (Regulation (EU, Euratom) No 966/2012) and Article 91(1) (b) of the Rules of Application
3	3233180147	3241008292	-129 337.58	Private Companies	C(2018)5839 of 10/09/2018	Legal basis of Waiver: Article 101(2)(b) of the Financial Regulation
4	3233180151	3241406598	-253 420.02	Private Companies	C(2018)5842 of 10/09/2018	Legal basis of Waiver: Article 101(2)(b) of the Financial Regulation

Total DG CNECT	-641 714.43
-----------------------	--------------------

Number of RO waivers	4
-----------------------------	----------

TABLE 11 : CENSUS OF NEGOTIATED PROCEDURES - DG CNECT - 2018**Internal Procedures > EUR 60 000**

Negotiated Procedure Legal base	Number of Procedures	Amount (EUR)
Annex 1 - 11.1 (b) - Artistic/technical reasons or exclusive rights (technical monopoly, captive market)	1	99 396.90
Total	1	99 396.90

TABLE 12 : SUMMARY OF PROCEDURES OF DG CNECT EXCLUDING BUILDING CONTRACTS**Internal Procedures > EUR 60 000**

Procedure Legal base	Number of Procedures	Amount (EUR)
Negotiated Procedure with at least five candidates below Directive thresholds (Art. 136a RAP)	2	239 640.00
Negotiated procedure without prior publication (Annex 1 - 11.1)	1	99 396.90
Open Procedure (Art. 104(1) (a) FR)	15	12 861 510.00
Open Procedure (Art. 127.2 RAP)	1	14 000 000.00
Restricted procedure based on a call for expressions of interest - Preselection of candidates (Annex 1 - 13.3 (a))	2	130 000.00
Total	21	27 330 546.90

TABLE 13 : BUILDING CONTRACTS

Legal base	Contract Number	Contractor Name	Description	Amount (EUR)

TABLE 14 : CONTRACTS DECLARED SECRET

LC Responsible Organisation DG Code	LC Contract/Grant Type	LC Date	Legal base	Contract Number	Contractor Name	Description	Amount (EUR)

TABLE 15 : FPA duration exceeds 4 years - CNECT

FPA Central Identifier	FPA In Force From Date	FPA Expiry Date	FPA Duration	Duration in Days	FPA Local Identifier	FPA User Reference	FPA Version Type	FPA Status Code	FPA Status Desc
CE-0688218	23-12-2014	31-12-2027		4756	FUNDING OF PROJECTS AIMING TO CREATE BETTER LIVING CONDITIONS FOR OLDER ADULTS	CNECT/R2 - FUNDING OF PROJECTS AIMING TO CREATE BETTER LIVING CONDITIONS FOR OLDER ADULTS	CURRENT	VLF	In Force
653998	30-03-2015	29-12-2020	69 months	2101	Graphene-based revolutions in ICT and beyond	CNECT/C/04 - H2020-FETFLAG-2014 - Graphene-based revolutions in ICT and beyond			In Force
649953	30-10-2015	29-12-2020	62 months	1887	Human Brain Project Framework Partnership Agreement	CNECT/C/04 - H2020-FETFLAG-2014 - Human Brain Project Framework Partnership Agreement			In Force
650003	23-04-2015	22-12-2020	68 months	2070	GÉANT Research and Education Networking - Framework Partnership Agreement Proposal	CNECT/C/01 - H2020-EINFRA-2014-2 - GÉANT Research and Education Networking - Framework Partnership Agreement Proposal			In Force
4									

Justifications:

CE_0688218 :

The FPA for the full duration of the programme is needed in order to cover and conclude annual Transfers of Funds agreement concluded with an Association created to manage the programme. The programme is governed by the indirect management scheme.

ID 653998 and 649953:

H2020 Future and Emerging Technology workprogramme 2014-15, adopted by the Commission, considered HBP and GRAPHENE Flagships as science-driven, large-scale, multidisciplinary research initiatives. The goals of such initiatives (in the form of Framework Partnership Agreements) are visionary and highly ambitious in terms of scientific challenges, resources and coordinated efforts that require cooperation among a range of disciplines, communities and national, regional and European programmes. As foreseen in the 2014-2015 work programme, FET Flagships require partnerships extending over a long period (in the order of 10 years duration) in order to enable effective coordination of efforts.

ID 650003:

H2020 European Research Infrastructures workprogramme 2014-15, adopted by the Commission, mandated the formalization of a Framework Partnership Agreement covering the duration of Horizon 2020 (7 years) to provide a stable environment for the implementation of GÉANT as the European communication commons. GÉANT provides fundamental connectivity services to Research and Education communities in the Member States and extends to the entire ERA (European Research Area) covering 50 million users and 10,000 institutions across Europe.

ANNEX 4: Materiality criteria

The present document details the way DG CONNECT assesses the level of errors in its annual financial statements and the definition of the level of misstatement that is considered as quantitatively material.

DG CONNECT managed in 2017 financial operations under H2020, FP7 and other programmes such as CIP ICT PSP/SI.

The Research Framework programmes H2020, FP7 (common aspects)

Effectiveness of controls

The starting point to determine the effectiveness of the controls in place is the cumulative level of error expressed as the percentage of errors in favour of the EC, detected by ex-post audits, measured with respect to the amounts accepted after ex-ante controls.

However, to take into account the impact of the ex-post controls, this error level is to be adjusted by subtracting:

- Errors detected corrected as a result of the implementation of audit conclusions.
- Errors corrected as a result of the extrapolation of audit results to non-audited contracts with the same beneficiary.

For FP7, this results in a residual error rate, which is calculated in accordance with the following formula:

$$Re sER\% = \frac{(Re pER\% * (P - A)) - (Re pER_{sys}\% * E)}{P}$$

Where:

ResER% residual error rate, expressed as a percentage.

RepER% representative error rate, or error rate detected in the common representative sample, expressed as a percentage. For FP 7 this rate is the same for all Research services.

RepERsys% portion of the RepER% representing (negative) systematic errors, expressed as a percentage. The RepER% is composed of two complementary portions reflecting the proportion of negative systematic and non-systematic errors detected.

P total aggregated amount in EUR of EC share of funding in the auditable population. In FP7, the population is that of all received cost statements, and the EUR amounts those that reflect the EC share included in the costs claimed in each cost statement.

A total EC share of all audited amounts, expressed in EUR. This will be collected from audit results.

E total non-audited amounts of all audited beneficiaries. In FP7, this consists of the total EC share, expressed in EUR, of all non-audited received cost statements for

all audited beneficiaries (excluding those beneficiaries for which an extrapolation in ongoing).

The Common Representative Audit Sample (CRAS) is the starting point for the calculation of the residual error rate. It is representative of the expenditure of each FP as a whole. Nevertheless, the Director-General (or Director for the Executive Agencies) must also take into account other information when considering if the overall residual error rate is a sufficient basis on which to draw a conclusion on assurance (or make a reservation) for specific segment(s) of FP7/Horizon 2020. This may include the results of other ex-post audits, ex-ante controls, risk assessments, audit reports from external or internal auditors, etc. All this information may be used in assessing the overall impact of a weakness and considering whether to make a reservation or not.

If the CRAS results are not used as the basis for calculating the residual error rate this must be clearly disclosed in the AAR, along with details of why and how the final judgement was made.

In case a calculation of the residual error rate based on a representative sample is not possible for a FP for reasons not involving control deficiencies,¹⁴ the consequences are to be assessed quantitatively by making a best estimate of the likely exposure for the reporting year based on all available information. The relative impact on the Declaration of Assurance would be then considered by analysing the available information on qualitative grounds and considering evidence from other sources and areas. This should be clearly explained in the AAR.

Multiannual approach

The Commission's central services' guidance relating to the quantitative materiality threshold refers to a percentage of the authorised payments of the reporting year of the ABB expenditure. However, the Guidance on AARs also allows a multi-annual approach, especially for budget areas (e.g. programmes) for which a multi-annual control system is more effective. In such cases, the calculation of errors, corrections and materiality of the residual amount at risk should be done on a 'cumulative basis' on the basis of the totals over the entire programme lifecycle.

Because of its multiannual nature, the effectiveness of the Research services' control strategy can only be fully measured and assessed at the final stages in the life of the framework programme, once the ex-post audit strategy has been fully implemented and systematic errors have been detected and corrected.

In addition, basing materiality solely on ABB expenditure for one year may not provide the most appropriate basis for judgements, as ABB expenditure often includes significant levels of pre-financing expenditure (e.g. during the initial years of a new generation of programmes), as well as reimbursements (interim and final payments) based on cost claims that 'clear' those pre-financings. Pre-financing expenditure is very low risk, being paid automatically after the signing of the contract with the beneficiary.

Notwithstanding the multiannual span of their control strategy, the Director-Generals of the Research DGs (and the Directors of ERCEA, REA, and, for Horizon 2020, EASME and INEA) are required to sign a statement of assurance for each financial reporting year. In order to determine whether to qualify this statement of assurance with a reservation, the

¹⁴ Such as, for instance, when the number of results from a statistically-representative sample collected at a given point in time is not sufficient to calculate a reliable error rate.

effectiveness of the control systems in place needs to be assessed not only for the year of reference but also with a multiannual perspective, to determine whether it is possible to reasonably conclude that the control objectives will be met in the future as planned.

In view of the crucial role of ex-post audits defined in the respective common audit strategies, this assessment needs to check in particular whether the scope and results of the ex-post audits carried out until the end of the reporting period are sufficient and adequate to meet the multiannual control strategy goals.

The criteria for making a decision on whether there is material error in the expenditure of the DG or service, and so on whether to make a reservation in the AAR, will therefore be principally, though not necessarily exclusively, based on the level of error identified in ex-post audits of cost claims on a multi-annual basis.

Adequacy of the audit scope

The quantity of the (cumulative) audit effort carried out until the end of each year is to be measured by the actual volume of audits completed. The data is to be shown per year and cumulated, in line with the current AAR presentation of error rates. The multiannual planning and results should be reported in sufficient detail to allow the reader to form an opinion on whether the strategy is on course as foreseen.

The Director-General (or Director for the Executive Agencies) should form a qualitative opinion to determine whether deviations from the multiannual plan are of such significance that they seriously endanger the achievement of the internal control objective. In such case, she or he would be expected to qualify his annual statement of assurance with a reservation.

Research Framework programmes – specific aspects

The control system of each framework programme is designed in order to achieve the operational and financial control objectives set in their respective legislative base and legal framework. If the effectiveness of those control systems does not reach the expected level, a reservation must be issued in the annual activity report and corrective measures should be taken.

Each programme having a different control system, the following section details the considerations leading to the establishment of their respective materiality threshold and the conclusions to draw with regard to the declaration of assurance.

Seventh Framework programme

For the Seventh Framework programme, the general control objective, following the standard quantitative materiality threshold proposed in the Standing Instructions for AAR, is to ensure 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 programmes' management cycle.

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.

Horizon 2020 Framework Programme

The Commission's proposal for the Regulation establishing the H2020 framework programme¹⁵ states that.

'It remains the ultimate objective of the Commission to achieve a residual error rate of less than 2% of total expenditure over the lifetime of the programme, and to that end, it has introduced a number of simplification measures. However, other objectives such as the attractiveness and the success of the EU research policy, international competitiveness, scientific excellence and in particular the costs of controls need to be considered.'

'Taking these elements in balance, it is proposed 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 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.'

Further, it explains also that

'Horizon 2020 introduces a significant number of important simplification measures that will lower the error rate in all the categories of error. However, [...] the continuation of a funding model based on the reimbursement of actual costs is the favoured option. A systematic resort to output based funding, flat rates or lump sums appears premature at this stage [...]. Retaining a system based on the reimbursement of actual costs does however mean that errors will continue to occur.'

An analysis of errors identified during audits of FP7 suggests that around 25-35% of them would be avoided by the simplification measures proposed. The error rate can then be expected to fall by 1.5%, i.e. from close to 5% to around 3.5%, a figure that is referred to in the Commission Communication striking the right balance between the administrative costs of control and the risk of error.'

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%.'

In summary, the control system established for Horizon 2020 is designed to achieve a control result in a range of 2-5% detected error rate, which should be as close as possible to 2%, after corrections. Consequently, this range has been considered in the legislation as the control objective set for the framework programme.

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.

¹⁵ 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.

CIP ICT PSP

For the CIP ICT PSP, the calculation of the residual error rate is done according to the same principles as for the FP7 error rate, as follows:

$$\text{REsER}\% = \frac{\text{CumER}\% \times (\text{P} - \text{A}) - \text{Ex}}{\text{P}}$$

Where:

ResER% residual error rate, expressed as a percentage.

CumER% cumulative error rate detected in the non-risk based audit sample.

P The P represents the requested EU contribution until the moment when the error rate is calculated.

A The value of the EU contribution of all audited amounts, expressed in Euros.

Ex The value of the implemented extrapolations in the CIP programme in DG CONNECT.

If the residual error rate is not (yet) below 2% at the end of a reporting, a reservation must be considered.

Nevertheless, the Director-General must also take into account other information when considering if the overall residual error rate is a sufficient basis on which to draw a conclusion on assurance (or make a reservation). This may include the results of other ex-post audits, ex-ante controls, risk assessments, audit reports from external or internal auditors, etc. All this information may be used in assessing the overall impact of a weakness and considering whether to make a reservation or not.

In case a calculation of the residual error rate based on a representative sample is not possible for a programme for reasons not involving control deficiencies¹⁶, the consequences are to be assessed quantitatively by making a best estimate of the likely exposure for the reporting year based on all available information. The relative impact on the Declaration of Assurance would be then considered by analysing the available information on qualitative grounds and considering evidence from other sources and areas. This should be clearly explained in the AAR.

Adequacy of the audit scope

The quantity of the (cumulative) audit effort carried out until the end of each year is to be measured by the actual volume of audits completed. The data is to be shown per year and cumulated, in line with the current AAR presentation of error rates. The multiannual planning and results should be reported in sufficient detail to allow the reader to form an opinion on whether the strategy is on course as foreseen.

The Director-General should form a qualitative opinion to determine whether deviations from the multiannual plan are of such significance that they seriously endanger the achievement of the internal control objective. In such case, she or he would be expected to qualify his annual statements of assurance with a reservation.

¹⁶ Such as, for instance, when the number of results from a statistically-representative sample collected at a given point in time is not sufficient to calculate a reliable error rate.

ANNEX 5a: Relevant Control System(s) for budget implementation (RCSs)

Grants direct management – FP7 and H2020

Stage 1: Programming, evaluation and selection of proposals

A - Preparation, adoption and publication of the Annual Work Programme and Calls for proposals

Main control objectives: Ensuring that the most promising projects for meeting the policy objectives are among the proposals submitted; Compliance; Prevention of fraud

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The work programme and the subsequent calls for proposals do not adequately reflect the policy objectives, priorities, are incoherent and/or the essential eligibility, selection and award criteria are not adequate to ensure the evaluation of the proposals.</p> <p>The annual work programmes are not consistent within the Research and Innovation family and with the 7 years' framework</p> <p>The programme Horizon 2020 implementation (procedures, monitoring arrangements, communication with beneficiaries, budget planning, etc) is not consistent within the Research and Innovation family and with the 7 years' framework.</p>	<p>Hierarchical validation within the authorising department Inter-service consultation, including all relevant services Adoption by the Commission Explicit allocation of responsibility.</p> <p>The Common Support Centre in RTD provides all the members of the Family with harmonised procedures, guidance and IT tools. DG RTD centralises the budget planning and the monitoring of the Horizon 2020's budget implementation</p>	<p>Coverage / Frequency: 100%</p> <p>Depth: All work programmes are thoroughly reviewed at all levels, including for operational and legal aspects.</p> <p>Coverage/ Frequency: 100% Depth All the underlying implementation tools are defined et developed at family level.</p>	<p>Effectiveness: The work programme is adopted by the Commission. Success ratios in terms of 'over-subscription': number of proposals retained for funding compared to number of eligible proposals received.</p> <p>Qualitative Benefits: A good Work Programme and well publicised calls should generate a large number of good quality projects, from which the most excellent can be chosen. There will therefore be real competition for funds.</p> <p>Optimised procedures, common approach on multiple issues (audits, fraud, legal aspects, reporting...); better reporting on the whole programme – better management of the programme.</p>

B - Selecting and awarding: Evaluation, ranking and selection of proposals

Main control objectives: Ensuring that the most promising projects for meeting the policy objectives are among the proposals selected; Compliance; Prevention of fraud

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The evaluation, ranking and selection of proposals is not carried out in accordance with the established procedures, the policy objectives, priorities and/or the essential eligibility, or with the selection and award criteria defined in the annual work programme and subsequent calls for proposals.</p>	<p>Selection and appointment of expert evaluators Assessment by independent experts</p> <p>Comprehensive IT system supporting the stage and allowing better monitoring of the process</p> <p>Validation by the AOSD of ranked list of proposals. In addition, if applicable: Opinion of advisory bodies; comitology; inter-service consultation and adoption by the Commission; publication</p> <p>Systematic checks on operational and legal aspects performed before signature of the GA Redress procedure</p> <p>Evaluation review procedure</p>	<p>100% vetting (including selecting) of experts for technical expertise and independence (e.g. conflicts of interests, nationality bias, ex-employer bias, collusion)</p> <p>100% of proposals are evaluated. Coverage: 100% of ranked list of proposals. Supervision of work of evaluators. 100% of contested decisions are analysed by redress committee</p>	<p>Effectiveness: Number of proposals evaluated</p> <p>Efficiency Indicators: % of Time-To-Inform on time. % of number of (successful) redress challenges upheld / total number of proposals evaluated</p> <p>Qualitative benefits: Expert evaluators from outside the Commission bring independence, state of the art knowledge in the field and a range of different opinions. This will have an impact on the whole project cycle : better planned, better implemented projects</p>

Stage 2: Contracting

Main control objectives: : Ensuring that the most promising projects for meeting the policy objectives are among the proposals contracted; SFM (optimal allocation of the budget available); Compliance; Prevention of fraud

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The description of the action in the grant agreement includes tasks which do not contribute to the achievement of the programme objectives. and/or that the budget foreseen overestimates the costs necessary to carry out the action.</p> <p>The beneficiary lacks operational and/or financial capacity to carry out the actions.</p> <p>Procedures do not comply with regulatory framework.</p> <p>The evaluation stage hasn't detected a potentially fraudulent proposal/beneficiary.</p>	<p>Project Officers implement evaluators' recommendations. Hierarchical validation of proposed adjustments.</p> <p>Validation of beneficiaries (financial capacity checks on demand). Systematic checks on operational and legal aspects performed before signature of the GA</p> <p>Risk assessment and risk based checks before the grant agreement signature and reinforced monitoring flagging if necessary</p> <p>Ad hoc anti-fraud checks for riskier beneficiaries Signature of the grant agreement by the AO. Financial verification where necessary Participant Guarantee Fund.</p>	<p>100% of the selected proposals and beneficiaries are scrutinised. Coverage: 100% of draft grant agreements. Depth may be differentiated; determined after considering the type or nature of the beneficiary (e.g. SMEs, joint-ventures) and/or of the modalities (e.g. substantial subcontracting) and/or the total value of the grant.</p> <p>Note that, given the constraints on the time to grant set out in the Horizon 2020 legislation, 'negotiation' of projects is kept to a minimum, as far as possible the positively evaluated projects are accepted without modification.</p>	<p>Effectiveness: Number of grants signed</p> <p>Efficiency Indicators: Average time to grant % of Time-to-grant on time</p> <p>Qualitative benefits: The whole committed budget checked for quality (prevention of later errors, prevention of ethics issues). This stage should lead to a higher assurance on the achievement of the projects – and policy objectives.</p>

Stage 3: Monitoring the implementation

Main control objectives: ensuring that the operational results (deliverables) from the projects are of good value and meet the objectives and conditions; ensuring that the related financial operations comply with regulatory and contractual provisions; prevention of fraud; ensuring appropriate accounting of the operations.

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The actions foreseen are not, totally or partially, carried out in accordance with the technical description and requirements foreseen in the grant agreement.</p> <p>The amounts paid exceed what is due in accordance with the applicable contractual and regulatory provisions.</p> <p>The cost claims are irregular or fraudulent.</p> <p>Lack of harmonised approach within the family with the consequence of unequal treatment of the beneficiaries</p>	<p>Kick-off meetings and 'launch events' involving the beneficiaries in order to avoid project management and reporting errors</p> <p>Effective external communication about guidance to the beneficiaries</p> <p>Anti-fraud awareness raising training for the project officers</p> <p>Enhanced family approach (anti-fraud cooperation; common legal and audit service; comprehensive and common IT system for all the family)</p> <p>Operational and financial checks in accordance with the financial circuits.</p> <p>Operation authorisation by the AO</p> <p>For riskier operations, more in-depth ex-ante controls</p> <p>Selection and appointment of expert for scientific reviews of intermediate and/or final reporting</p> <p>If needed: application of Suspension/interruption of payments, Referring case to OLAF</p>	<p>100% of the projects are controlled, including only value-adding checks.</p> <p>Riskier operations subject to more in-depth controls.</p> <p>The depth depends on risk criteria. However, as a deliberate policy to reduce administrative burden, and to ensure a good balance between trust and control, the level of control at this stage is reduced to a minimum</p> <p>High risk operations identified by risk criteria.</p> <p>Red flags: suspicions raised by staff, audit results, EDES, individual or 'population' risk assessment</p> <p>Audit certificates required for any beneficiary claiming more than EUR 375000 (FP7)/EUR 325 000 (Horizon 2020).</p>	<p>Effectiveness: Number of payments (interim and final)</p> <p>Efficiency: Time-to-pay: % of payments made on time</p> <p>Qualitative Benefits: Projects are executed and produce benefits for the community</p>

Overall economy and quantitative benefit for ex-ante control

			Economy: <u>a. Estimation of cost of staff involved in the ex-ante checks</u> Programme management and monitoring Financial management Budget and accounting <u>b. Estimation of other costs linked to ex-ante checks</u> Cost of experts Costs of IT external contracts Benefits: Total amount committed for grants signed Total amount paid against cost claims including clearings on prefinancing
--	--	--	---

Stage 4: Ex-post controls

Effectiveness, efficiency and qualitative benefits are detailed per stages A to D.

Economy is calculated overall for the ex-post controls and detailed at the end of paragraph 2.

A - Reviews, audits and monitoring

Main control objectives: Measuring the level of error in the population after ex-ante controls have been undertaken; detect and correct any error or fraud remaining undetected after the implementation ex-ante controls; identifying possible systemic weaknesses in the ex-ante controls, or weaknesses in the rules

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The ex-ante controls (as such) do not prevent, detect and correct erroneous payments or attempted fraud to an extent going beyond a tolerable rate of error.</p> <p>Lack of consistency in the audit strategy within the family.</p> <p>Lack of efficiency for absence of coordination: multiple audits on the same beneficiary, same programme: reputational risk and high administrative burden on the beneficiaries' side.</p>	<p>Common Ex-post control strategy for the entire Research and Innovation family (Horizon 2020), implemented by a central service (Common Support Centre, DG RTD):</p> <ul style="list-style-type: none"> - At intervals carry out audits of a representative sample of operations to measure the level of error in the population after ex-ante controls have been performed - Additional sample to address specific risks - When relevant, joint audits with the Court of Auditors <p>Multi-annual basis (programme's lifecycle) and coordination with other AOs concerned.</p> <p>Validate audit results with beneficiary.</p> <p>In case of systemic error detected, extrapolation to all the projects run by the audited beneficiary.</p> <p>If needed: referring the case to OLAF.</p>	<ul style="list-style-type: none"> - Common Representative audit Sample (CRaS): MUS sample across the programme to draw valid management conclusions on the error rate in the population. - Risk-based sample, determined in accordance with the selected risk criteria, aimed to maximise deterrent effect and prevention of fraud or serious error 	<p>Effectiveness: Representative and residual error rate identified Number of audits finalised % of beneficiaries & value coverage</p> <p>Efficiency: Percentage of implementation of CAS audit plan</p> <p>Qualitative benefits: Deterrent effect. Learning effect for beneficiaries. Improvement of ex-ante controls or risk approach in ex-ante controls by feeding back findings from audit. Improvement in rules and guidance from feedback from audit.</p>

B - Implementing results from ex-post audits/controls

Main control objectives: Ensuring that the (audit) results from the ex-post controls lead to effective recoveries; Ensuring appropriate accounting of the recoveries made

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
The errors, irregularities and cases of fraud detected are not addressed or not addressed in a timely manner	Systematic registration of audit / control results to be implemented and actual implementation. Validation of recovery in accordance with financial circuits. Authorisation by AO Notification to OLAF and regular follow up of detected fraud.	Coverage: 100% of final audit results <i>with a financial impact</i> . Depth: All audit results are examined in-depth in making the final recoveries. Systemic errors are extrapolated to all the non-audited projects of the same beneficiary	Effectiveness: Amounts being recovered and offset Efficiency: Number/value/% of audit results pending implementation, Number/value/% of audit results implemented Benefits: Budget value of the errors, detected by ex-post controls, which have actually been corrected (offset or recovered). Loss: Budget value of such ROs which are 'waived' or have to be cancelled.

Overall economy for ex-post control

			Economy: Estimation of cost of staff involved in the coordination and execution of the ex-post audit strategy and in the implementation of audits.
--	--	--	--

ANNEX 5b: Relevant Control System(s) for budget implementation (RCSs) Indirect entrusted management DG CONNECT

The RCS covers: (1) the executive agencies EACEA, INEA, REA and EASME (the two latter for H2020)¹⁷ (2) cross delegations to other Commission services (3) the ESCEL Joint Undertaking (4) Active and Assisted Living (AAL) Association, (5) Decentralised Agencies (BEREC Office & ENISA).

Stage 1: Establishment (or prolongation) of the mandate to the entrusted entity ('delegation act' / 'contribution agreement' / etc).

Main control objectives: Ensuring that the legal framework is fully compliant and regular (legality & regularity), delegated to an appropriate entity (best value for public money, economy, efficiency), without any conflicts of interests (anti-fraud strategy), and gives all the references necessary for a smooth running of the new entity.

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The establishment (or prolongation) act of the mandate of the entrusted entity lacks clear references regarding the responsibilities of each involved actor.</p> <p>For PPPs: the evaluation method of the in-kind contributions provided by the industry partners is not clear.</p>	<p>Ex-ante evaluation</p> <p>Widespread consultation, internally and with external stakeholders.</p> <p>Hierarchical validation within the authorising department</p> <p>Inter-service consultation, including all relevant DG.</p> <p>Adoption by the Commission.</p>	<p>Coverage/Frequency:</p> <p>100%/once for the establishment and partial for amendments or extensions.</p>	<p>Effectiveness:</p> <p>Quality of the legal work (basic act, delegation act/contribution agreement)</p> <p>Efficiency:</p> <p>Average cost of preparation, adoption and selection work done for the entrusted entities. Overall supervision cost per (type of) entrusted entity (%)</p> <p>Economy:</p> <p>Estimation of costs of staff involved in monitoring the entrusted entity.</p> <p>Benefits: Benefits cannot be calculated in terms of budget.</p>

¹⁷ The contribution of DG CONNECT to the administrative budget of the executive agencies is removed from the financial programming at the beginning of the Multi-annual Financial Framework. The operational budget is directly allocated to the Agency on a yearly basis – DG CONNECT does not strictly have a financial responsibility, but does still have a responsibility to supervise the agency in terms of the achievement of results.

Stage 2: Assessment and supervision of the entrusted entity's financial and control framework (towards 'budget autonomy'; 'financial rules').

Main control objectives: Ensuring that the entrusted entity is fully prepared to start/continue implementing the delegated funds autonomously with respect of all 5 ICOs.

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
The financial and control framework deployed by the entrusted entity is not fully mature to guarantee achieving all 5 ICOs	Ex-ante assessment, conditional to granting budget autonomy Hierarchical validation within the authorising department Use of Model- or Framework-financial rules (MFR or FFR) Standard business processes and IT tools (EAs and JUs) Secondment or selection of key staff Continuous cooperation within the Research family (IC network, FAIR...) in order to harmonize the IC framework Review of audit reports (IAS, ECA)	Coverage/frequency: 100% of entrusted entities/once at the beginning and partial (problem focussed) for amendments or work arrangements Depth is determined after considering the type or nature of the entrusted entity, its form and/or the value of the budget concerned.	Effectiveness: The entrusted entities is granted budget autonomy, without too significant delays. Efficiency: Number of deviations from the MFF. Economy: Estimation of costs of staff involved in ex-ante assessment process. Benefits: The total budget amount entrusted to the entity.

Stage 3: Operations: monitoring, supervision, reporting.

Main control objectives: Ensuring that the Commission is fully and timely informed of any relevant management issues encountered by the entrusted entity, in order to possibly mitigate any potential financial and/or reputational impacts (legality & regularity, achievement of scientific objectives, sound financial management, true and fair view reporting, anti-fraud strategy).

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The Commission is not informed of relevant management issues encountered by the entrusted entity in a timely manner</p> <p>The Commission does not react upon and mitigate notified issues in a timely manner which may reflect negatively on the Commission's governance reputation and quality of accountability reporting.</p> <p>The programme H2020 implementation (procedures, monitoring arrangements, communication with beneficiaries, budget planning, etc.) is not consistent within the Research family and with the 7 years' framework</p>	<p>Delegation Act/ Contribution agreement/etc. specifying the control, accounting, audit, publication, etc. related requirements – incl. the modalities on reporting back relevant and reliable control results</p> <p>Membership of the Governing Boards (ECSEL – the Commission holds 1/3 of voting rights) or the Steering Committee (Executive Agencies)</p> <p>Monitoring or supervision of the entrusted entity e.g. 'regular' monitoring meetings at operational level to review progress in achieving operational results; review of reported control results and any underlying management/audit reports; scrutiny of annual report, etc.</p> <p>Management review of the supervision results.</p> <p>If appropriate/needed:</p> <ul style="list-style-type: none"> - reinforced monitoring of operational and/or financial aspects of the entity 	<p>Coverage: 100% of the entities are monitored/supervised.</p> <p>Frequency: key KPI's reported on a monthly basis, regular steering committee or Governing Board meetings), annual reports (AAR and operational reporting), evaluation reports.</p> <p>In case of operational and/or financial issues, appropriate mitigating measures are available and should be used</p> <p>Coverage/ Frequency: 100%</p> <p>Depth</p> <p>All the underlying implementation tools are defined et developed at family level.</p>	<p>Effectiveness:</p> <p>Relevance and reliability of control data reported back, quality of underlying mngt/audit reports received.</p> <p>Efficiency:</p> <p>Overall supervision cost per entrusted entity</p> <p>Economy:</p> <p>Estimation of costs of staff involved in monitoring of the entrusted entities</p> <p>Benefits:</p> <p>The average annual budget amount entrusted to the entity. Optimised procedures, harmonised approach to beneficiaries on multiple issues (audits, fraud, legal)</p>

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
	<p>- potential escalation of any major governance-related issues with entrusted entities</p> <p>The Common Support Centre provides all the members of the Research Family with harmonised procedures, guidance and IT tools. DG RTD centralises the budget planning and the monitoring of the H2020's budget implementation.</p>		

Stage 4: Commission contribution: payment or suspension/interruption.

Main control objectives: Ensuring that the Commission adequately assesses the management situation at the entrusted entity, before either paying out the (next) contribution for the operational and/or operating budget of the entity, or deciding to suspend/interrupt the (next) contribution. This is very closely linked to stage 3 above

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The Commission pays out the (next) contribution to the entrusted entity, while not being aware of the management issues that may lead to financial and/or reputational damage.</p> <p>Bad cash forecast leading to the Commission paying too much compared to the EE's needs</p> <p>In times of shortage of credits, the budget appropriations are not optimised with the current needs within the family.</p>	<p>Delegation Act/ Contribution agreement/etc specifying the control, accounting, audit, publication, etc related requirements – including reporting</p> <p>Management review of the supervision results. Standard procedures for the validation of all payments and recovery of non-used operating budget subsidy</p> <p>Good internal communication to ensure that issues are known and dealt with (see stage 3)</p> <p>Family level budget coordination</p>	<p>Coverage: 100% of the contribution payments. Frequency: following the rhythm of the payments</p> <p>There is a review before each payment is made. However, the depth will depend on identified issues and on the body involved.</p>	<p>Effectiveness: Number of control failures.</p> <p>Efficiency: Overall supervision cost per entrusted entity</p> <p>Economy: Estimation of costs of staff involved in monitoring of the entrusted entities.</p> <p>Benefits: The average annual budget amount entrusted to the entity Qualitative benefit: optimised credit implementation</p>

Stage 5: Audit and evaluation, Discharge for Joint Undertakings

Main control objectives: Ensuring that assurance building information on the entrusted entity's activities is being provided through independent sources as well, which may confirm or contradict the management reporting received from the entrusted entity itself (on the 5 ICOs).

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The Commission has not sufficient information from independent sources on the entrusted entity's management achievements, which prevents drawing conclusions on the assurance for the budget entrusted to the entity – which may reflect negatively on the Commission's governance reputation and quality of accountability reporting.</p>	<p>Delegation Act/Contribution agreement/etc. specifying the control, accounting, audit, publication, etc. related requirements – including independent audit function (where appropriate) and cooperation with IAS and ECA. The IAS is the internal auditor for all EAs and JUs. The ECA has access to all bodies for which recourse to new management modes has been done and gives a separate opinion (leading to separate discharge) for JUs and EAs for their administrative budget.</p> <p>Harmonised ex-post audits (common audit strategy for H2020), common audit service-potential escalation of any major governance-related issues with entrusted entities</p> <p>- Exchange of relevant anti-fraud information about shared beneficiaries within the Research family</p>	<p>Coverage: sample as needed (e.g. random/representative, value-targeted, risk-based).</p> <p>Frequency: whenever necessary.</p> <p>The depth depends on the type of entity and the level of risks assessed.,</p> <p>Annual report of the ECA on all JUs.</p>	<p>Effectiveness: Assurance being provided (via management/audit reporting).</p> <p>Efficiency: Overall supervision cost per entrusted entity</p> <p>Economy: Estimation of costs of staff involved in monitoring of the entrusted entities.</p>

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
	Interim evaluations by independent experts of achievement of policy objectives		

The below RCS covers: (1) the cultural and creative sectors guarantee facility.

IFI = (entrusted) International Financial Institution (eg EIB/EIF, etc); **FI** = (further entrusted) Financial Intermediaries;
'sub'-FI = (further) sub-delegated FI; **FR** = Final Recipient

Stage 1 – Set-up/design of the Financial Instrument and designation of International Financial Institution (IFI)

Main control objectives:

- Ensuring that the Financial Instrument is adequate for meeting the policy or programme objectives (effectiveness); Compliance (legality & regularity); Prevention of fraud (anti-fraud strategy)
- Ensuring that the most promising International Financial Institution (IFI) is pre-determined or selected to ensure that the Financial Instrument is implemented effectively and efficiently; Sound financial management; Legality and regularity; Fraud prevention and detection

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
a) The actions supported through the Financial Instrument do not adequately reflect the policy objectives	a) Hierarchical validation (incl. at DG level) of the: <ol style="list-style-type: none"> 1) Regulation (approved by the Legislative Authority); 2) Delegation agreement, including notably an ex-ante evaluation (required by RAP art. 224); 3) Annual work programme for 'Access to risk finance' (part of the 	If risk materialises, the Financial Instrument would be irregular. Theoretical impact 100% of the funds involved and significant reputational consequences. <u>Coverage /frequency:</u> 100%	Effectiveness: Assurance being provided (via management/audit reports). Efficiency: Overall supervision cost. Economy: Estimation of the cost of staff involved in the monitoring of the Financial Instrument.

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
	<p>H2020 WP) with an annual budget</p> <p>Inter-service consultation of relevant DGs (horizontal and operational)</p> <p>Consultation of the H2020 Advisory Group on Access to Risk Finance</p> <p>Formal adoption by the Legislative Authority (for the Regulation), by Commission decision (for the DA), and by the Budgetary Authority (for the WP and the annual budget).</p> <p>Regular evaluations (see Stage 3)</p>		<p>Benefits: The total value of the Financial Instrument (this is our maximum risk exposure if the basic acts are inadequate)</p>
<p>b) The Delegation Agreement is inadequate in coverage of operational and management provisions (RAP art. 217 & 222-225)</p>	<p>b) The main principles were agreed with the IFI in the FAFAs (managed by ECFIN)</p>		
<p>c) The selection of the <u>IFI</u> is not in line with FR & RAP criteria, especially re: 'alignment of interests' (FR art 140.2e)</p>	<p>c) EIF was pre-determined in accordance with FR art. 58.1c.</p>		<p>Effectiveness: Assurance being provided (via management/audit reports).</p> <p>Efficiency: Overall supervision cost.</p> <p>Economy: Estimation of the cost of staff involved in the monitoring of the Financial Instrument.</p>

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
d) The IFI (and the (sub)FI) does not have the experience and financial capacity / administrative & control capacity to ensure an effective & sound implementation of the Financial Instrument (FR art 60.2)	d) The Council asked the Commission to work with EIF.		
e) The RSM (Risk-Sharing Mechanism) is too generous to the IFI (risk of unbalanced risks)	e) <i>Same controls as for a) above</i> The EU's risk share is defined in the Delegation agreement. The risk sharing model was agreed in line with horizontal guidance for Financial instruments from DG BUDG and ECFIN. It was also subject to a formal Commission decision.		

Stage 2 – Implementation of the Financial Instrument by the International Financial Institution (IFI), via Financial Intermediaries (FIs)

Main control objectives:

- Ensuring that the funds allocation is optimal (best value for public money; effectiveness, economy, efficiency); ensuring that the most promising Financial Intermediaries (FI), Final Recipients (FR) are selected to meet the policy objectives (effectiveness)
- Ensuring that the remuneration paid to the IFI is adequate (cost-effectiveness)
- Compliance (legality & regularity); Prevention of fraud (anti-fraud strategy); Safeguarding of assets and information; Reliable reporting (true and fair view)

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
a) The call for and selection of the <u>contracted FIs and FRs</u> is not in line with FR & RAP criteria for eligibility or exclusion, especially 'alignment of interests' and 'no relations with offshore banking and tax havens'	<p>a) Responsibility for the call, for evaluating, proposing and selecting FIs, lies with the IFI (the FIs do not perform calls).</p> <p>Due diligence by the IFI, which checks as part of the evaluation that banks are not registered in tax havens etc.</p> <p>Redress procedure for FIs not selected (part of EIF's evaluation procedure)</p> <p>Implementation of various controls by the IFI/FIs in accordance with the FAFA and Delegation agreement</p> <p>EIB's control strategy is presented to the Commission</p> <p>Ex-ante controls by IFIs at 'contracting' stage – EIF has a large department who check ex-</p>	<p><u>Coverage / frequency</u>: determined by the IFI/FIs in accordance with the Delegation agreement</p> <p><u>Depth</u>: determined by the IFI/FIs in accordance with the Delegation agreement</p>	<p>Effectiveness: Number of control failures. Assurance being provided (via management/audit reports)</p> <p>Efficiency: Overall supervision cost</p> <p>Economy: Estimation of the cost of staff involved in the monitoring of the Financial Instrument.</p>

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>b) The design of the accounting and reporting arrangements would not provide a True & Fair View</p> <p>c) the remuneration (structure and/or level) of the IFI¹⁸, the reimbursement of any exceptional costs and costs for technical assistance or additional tasks would not be in line with the SFM objective (e.g. admin fees unjustifiably high)</p>	<p>ante that the proposed projects are eligible, excellent science and financially viable.</p> <p>On-the-spot verifications by IFIs – a 'monitoring team' visits FIs and FRs before project and after project finalisation</p> <p>b) Separate records per Financial Instrument are to be kept by the IFI; and harmonised reporting has been required by the Commission.</p> <p>c) Fees and incentives are defined in the FAFA and the Delegation agreement, including an overall cap.</p>	<p>c) In-depth assessment of the statement of expenses</p>	

¹⁸ Remuneration may include administrative fees, treasury management fees and incentives as well as exceptional and unforeseen expenses.

Stage 3 - Monitoring and supervision of the Financial Instrument by the Commission, incl. ex-post control and assurance building

Main control objectives:

- Ensuring that the operational results (deliverables) from the Financial Instrument are of good value and meet the objectives and conditions (effectiveness & efficiency); ensuring that the related financial operations comply with regulatory and contractual provisions (legality & regularity); prevention of fraud (anti-fraud strategy); ensuring appropriate accounting of the operations (reliability of reporting, safeguarding of assets and information)
- Ensuring appropriate accounting of the repayments and assigned revenue made (reliability of reporting)
- Ensuring that the (audit) results from the ex-post controls lead to assurance for the accountable AOD (5 ICOs)

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>a) The IFI (and the (sub)FI) provide support to activities which are not contributing to achieving the policy objectives and the implementation is not in compliance with applicable regulations and is not in accordance with the principle of sound financial management</p> <p>b) Internal control weaknesses, irregularities, errors and fraud are not detected and corrected by the IFI (and the (sub)FI),</p>	<p>a, b) Monitoring and supervision of the IFI/FIs is organised formally through the Steering Committee.</p> <p>Regular reporting (quarterly, annually and ad hoc) by the IFI to the Commission 'Designated Service' on operational and financial performance and administrative costs.</p> <p><u>Annual reporting: Financial statements; Management declaration; Summary report of audits and controls;</u> independent (external) audit opinion.</p> <p><u>In case of a key issue (weak reporting, negative audit opinion, high risk operations, etc):</u></p> <p>Reinforced monitoring and supervision, If needed: The Commission has the right to</p>	<p><u>Coverage: 100% of the funding payments to the entrusted entity</u> are controlled</p>	<p>Effectiveness: Number of control failures. Assurance being provided (via management/audit reports).</p> <p>Efficiency: Management (fees) and supervision costs over assets under management</p> <p>Benefits: Estimation of the cost of staff involved in the monitoring of the Financial Instrument.</p>

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>resulting in the EU funds not achieving the policy objectives and not complying with applicable regulations</p> <p>c) The IFI does not report information that DG CONNECT considers crucial</p> <p>d) The Financial Instrument transactions lead to contingent liabilities for the EU budget</p>	<p>suspend or interrupt payments, or even apply the exit strategy (winding-up)</p> <p>Referring IFI/FI to OLAF</p> <p>c) Annual report has to be audited by an independent auditor, who also reports on the control system</p> <p>d) The legal base stipulates that the EU's liability (i.e. financial risk) is limited to the contribution it has paid, so there can be no contingent or off-balance sheet liabilities over this amount.</p>		

ANNEX 6: Implementation through national or international public-sector bodies and bodies governed by private law with a public sector mission

This annex, which applies only to indirect management, includes information about implementing tasks entrusted to national or international public sector bodies and bodies governed by private law with a public sector mission. In practice, this includes 'national agencies' and bodies governed by private law with a public sector mission including PPPs such as Joint Undertakings (but not executive agencies, regulatory agencies, EIB and EIF).

ECSEL Joint Undertaking

1. Programmes concerned:	Horizon 2020 - the Framework Programme for RTD (2014-2020) - PART II. PRIORITY Industrial leadership, under specific objective - Leadership in enabling and industrial technologies
2. Annual budgetary amount entrusted / payments made	EUR 184.48 million / EUR 220.36 million
3. Duration of the delegation:	27 June 2014 - 31 December 2024
4. Justification of recourse to indirect centralised management:	Required by the Council Regulation establishing ECSEL Joint Undertaking to implement a Joint Technology Initiative on Electronic Components and Systems for European Leadership ¹⁹
5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc):	Set out in the Council Regulation establishing the ECSEL Joint Undertaking as a Union body
6. Summary description of the implementing tasks entrusted.	<p>The ECSEL JU shall carry out the following tasks:</p> <p>(a) support financially research and innovation indirect actions, mainly in the form of grants;</p> <p>(b) implement the tasks related to the operations of the Participants Guarantee Fund (PGF) for all the grants awarded by the ECSEL JU, according to the rules set out in the Rules for Participation and the Commission Decision on the financial management of the Participants Guarantee Fund C (2013) 9092, that establishes that the Executive Director of the ECSEL JU as the Authorising Officer (AO) will be responsible:</p> <p>- for retaining, from each initial pre-financing, 5% of the maximum grant amount provided for in the</p>

¹⁹ Council Regulation (EU) No 561/2014 of 6 May 2014, OJ L 169, 7.6.2014, p. 152.

	<p>grant agreement and for transferring this amount from their specific account to the PGF;</p> <p>- for returning PGF contributions to beneficiaries, for PGF interventions and for receipts.</p> <p>(c) ensure sustainable management of the ECSEL JU;</p> <p>(d) develop close cooperation and ensure coordination with European (in particular Horizon 2020), national and transnational activities, bodies and stakeholders, aiming at fostering a fertile innovation environment in Europe, creating synergies and improving exploitation of research and innovation results in the area of electronic components and systems;</p> <p>(e) define and make any necessary adjustments to the multiannual strategic plan;</p> <p>(f) draw up and implement work plans for executing the multiannual strategic plan;</p> <p>(f) initiate open calls for proposals, evaluate proposals, and award funding to indirect actions through open and transparent procedures within the limits of available funds;</p> <p>(g) publish information on the indirect actions;</p> <p>(h) monitor the implementation of the indirect actions and manage the grant agreements or decisions;</p> <p>(i) monitor overall progress towards achieving the objectives of the ECSEL JU;</p> <p>(j) engage in information, communication, exploitation and dissemination activities by applying mutatis mutandis Article 28 of Regulation (EU) No 1291/2013, including making the detailed information on results from calls for proposals available and accessible in a common Horizon 2020 e-database;</p> <p>(k) liaise with a broad range of stakeholders, including research organisations and universities.</p>
--	---

Active and Assisted Living (AAL) Joint Programme

1. Programmes concerned:	H2020 Societal Challenges – Health, demographic change and well-being
2. Annual budgetary amount entrusted /payments made	EUR 14.68 million / EUR 6.83 million
3. Duration of the delegation:	2014-2027
4. Justification of recourse to indirect centralised management:	Required by co-decision ²⁰ by the European Parliament and the Council concerning the Community participation in the AAL Joint Programme (represented by the AAL Association, an International ASBL under Belgian Law)
5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc):	Set out in co-decision by the European Parliament and the Council on the participation of the Union in the AAL Programme jointly undertaken by several Member States
6. Summary description of the implementing tasks entrusted.	<p>The AAL JP shall implement the following tasks set-out in the co-decision by the European Parliament and the council ²¹:</p> <ol style="list-style-type: none"> 1. support market-oriented research and innovation projects for active and healthy ageing, which shall demonstrate the capability to exploit the project results within a realistic time frame; the financing of those indirect actions under the AAL Programme shall mainly take the form of grants. It may also take other forms such as prizes, pre-commercial procurement, and public procurement of innovative solutions. 2. Implement actions for the purposes of brokerage, programme promotion, in particular outreach activities to countries not currently participating in the AAL Programme, actions to raise awareness of the current capabilities, foster deployment of innovative solutions and connect supply and demand side organisations and facilitating access to finance and investors may be supported. 3. Draw up and implement annual work plans identifying forms of funding and topics for calls for proposals. 4. consult with relevant stakeholders (including

²⁰ Decision 554/2014/EU of 15 May 2014

²¹ Annex II of Decision 554/2014/EU of 15 May 2014

	<p>decision-makers from public authorities, user representatives, private-sector service providers and insurance providers as well as industry, including small and medium-sized enterprises) concerning the applied research and innovation priorities to be addressed.</p> <p>5. take into account demographic trends and demographic research in order to provide solutions that reflect the social and economic situation across the Union.</p> <p>6. take into account the Union's industrial, climate and energy policies. The AAL Programme shall also promote energy efficiency and reflect the need to tackle energy poverty.</p> <p>7. Due account shall be taken of gender, ethical, social sciences and humanities and privacy issues, in line with the Horizon 2020 principles and rules. Account shall also be taken of relevant Union and national legislation and international guidelines, in particular regarding the rights to privacy and data protection.</p> <p>8. In line with the close-to-market nature of the AAL Programme and in compliance with the rules set out in Regulation (EU, Euratom) No 966/2012, the AALA shall ensure time-to-grant and time-to-payment in accordance with Regulation (EU) No 1290/2013 and ensure compliance with them by Participating States during the implementation of the AAL Programme.</p> <p>9. Each Participating State shall strongly promote, from the earliest stage of all research and innovation projects, the participation of organisations representing demand side actors, including end users.</p> <p>10. Each Participating State shall co-finance its national participants whose proposals are successful through national agencies that shall, in addition, channel the Union co-funding from the dedicated implementation structure, on the basis of a common project description, which forms part of an agreement to be concluded between the respective national programme management agencies and their national participants for each project.</p> <p>11. After the closure of a call for project proposals, a central eligibility check shall be carried out by the AALA in cooperation with the designated national programme management agencies. That check shall</p>
--	---

	<p>be performed on the basis of the common eligibility criteria for the AAL Programme which shall be published with the call for project proposals.</p> <p>12. The AALA shall, with the assistance of the national programme management agencies, check the fulfilment of additional national eligibility criteria set out in the calls for project proposals.</p> <p>13. The national eligibility criteria shall relate only to the legal and financial status of the individual applicants and not to the content of the proposal and shall concern the following aspects:</p> <p>13.1. applicant type, including legal status and purpose;</p> <p>13.2. liability and viability, including financial soundness, fulfilment of tax and social obligations.</p> <p>14. Eligible project proposals shall be evaluated by the AALA with the assistance of independent experts, on the basis of transparent and common evaluation criteria, as set out in the published call for proposals, and a list of projects in order of score shall be produced. Projects shall be selected in accordance with that ranking and taking account of available funding. That selection, once adopted by the General Assembly of the AALA, shall be binding on the Participating States.</p> <p>15. If a project participant fails to meet one or more of the national eligibility criteria or if the corresponding national budget for commitment for funding is exhausted, the Executive Board of the AALA may decide that an additional central independent evaluation of the proposal concerned should be carried out with the assistance of independent experts, in order to evaluate the proposal either without the participation of the participant in question or with a replacement participant, as suggested by project participants.</p> <p>16. Legal and financial issues concerning participants in projects selected for funding shall be handled by the designated national programme management agency. National administrative rules and principles shall be applied.</p>
--	--

ANNEX 7: EAMR of the Union Delegations (not applicable)

ANNEX 8: Decentralised agencies

ENISA

Policy concerned	Annual budgetary amount entrusted (EUR)
To achieve a high and effective level of Network and Information Security within the European Union. Together with the EU-institutions and the Member States, 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.	10 777 626

BEREC Office

Policy concerned	Annual budgetary amount entrusted (EUR)
The main task of the BEREC Office is to support and assist BEREC, the Body of European Regulators for Electronic Communications. BEREC's mission is to contribute to the development and better functioning of the internal market for electronic communications networks and services by aiming to ensure a consistent application of the EU regulatory framework for electronic communications.	4 331 000

ANNEX 9: Evaluations and other studies finalised or cancelled during the year

No	Title	Reason ¹	Scope ²	Type	Associated DGs	Costs (EUR)	Comments ⁴	Reference ⁵
		L, LMFF, FR, REFIT, CWP, O						
	I. Evaluations finalised or cancelled in 2018							
	a. Evaluations finalised in 2018							
	Evaluation of the Directive on the re-use of public sector information (Directive 2003/98/EC)	REFIT / L	Directive evaluated as a back-to-back exercise (evaluation and revision). With this review, the EC fulfils the periodic review obligation contained in article 13 of the Directive, and at the same time further the goals of the DSM Strategy in the field of the data economy.	E		489 300 (study)	This revised Directive is part of the 2018 data package	https://ec.europa.eu/digital-single-market/en/news/commission-staff-working-document-evaluation-re-use-public-sector-information
	Evaluation of the Recommendation on access to and preservation of scientific information (C(2012) 4890)	REFIT	Recommendation evaluated as a back-to-back exercise (evaluation and revision). Announced in the context of the European Cloud Initiative (COM(2016) 178) and the 2018 Data Package. Informed technical update aimed at making the Recommendation future-proof.	E	DG RTD		Part of the 2018 data package. Work done jointly with DG RTD. CNECT is chef de file for the full package; DG RTD is chef de file for the technical review of the Recommendation, with CONNECT as co-chef and managing the entire process.	https://ec.europa.eu/digital-single-market/en/news/recommendation-access-and-preservation-scientific-information https://ec.europa.eu/digital-single-market/en/policies/building-european-data-economy
	Evaluation of the Recommendation on fixed and mobile termination rates	L	The evaluation of the 2009 Termination Rates Recommendation (TRR) was carried out between 2015 and 2017 and covers the implementation of TRR across the EU since its adoption in 2009 to September 2016. It ran in parallel with the legislative	E				https://ec.europa.eu/digital-single-market/en/news/staff-working-document-and-executive-summary-evaluation-directive-969ec-

			works on the adoption of the European Electronic Communications Code.					legal-protection
	Evaluation REFIT review of the regulation establishing the .eu top-level domain	REFIT	The online environment, the market and the EU political and legislative context have changed considerably in the last 10 years. Hence, the Commission has conducted a Regulatory Fitness and Performance Programme (REFIT) review of the .eu Regulations which led to a new legislative proposal on the .eu TLD.	E				https://ec.europa.eu/digital-single-market/en/news/staff-working-document-executive-summary-evaluation-refit-review-regulation-ec-7332002
	Evaluation of Europeana	L	The Council Conclusions confirmed Member States' continued support for Europeana, recognised Europeana's relevance both from a cultural as well as a digital innovation perspective, identified challenges to be addressed, and invited Member States, the Commission and the Europeana operator to undertake action. In these Council Conclusions, the Commission was invited: 'to present to the Council an independent evaluation of Europeana and give clear orientations for the mid- and long-term development of Europeana by assessing alternatives at the EU level for the future scope, sustainable funding and governance of Europeana, including a possibility to transform or integrate Europeana into a European legal entity, whilst taking account of the dual nature of Europeana as both a cultural and digital innovation project	E				https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1536235661093&uri=SWD:2018:398:FIN
	b. Evaluations cancelled in 2018							
	-	-	-	-	-	-	-	-
	II. Other studies finalised or cancelled in 2018							
	a. Other studies finalised in 2018							

2017/0046	Fixed Broadband Prices in Europe - SMART 2017/0046	O	The Broadband Coverage in Europe study is designed to monitor the progress of EU Member States toward their specific broadband coverage objectives – namely: 'Universal Broadband Coverage with speeds at least 30 Mbps by 2020' and 'Broadband Coverage of 50% of households with speeds at least 100 Mbps by 2020'.	STUDY		150 000	Published: 2018-06-07	PUBLICATION NOT YET FINALISED
2016/0050	EGovernment Benchmark 2017 Taking stock of user-centric design and delivery of digital public services in Europe : final background report. Volume 2 - Study	O	The digital transformation of governments across Europe is one of the cornerstones of achieving the Digital Single Market vision, as well as the broader EU2020 goals. The recent Ministerial Declaration emphasises the need to strive towards 'open, efficient and inclusive, providing borderless, interoperable, personalised, user-friendly, end-to end digital public services to all citizens and businesses – at all levels of public administration'. The Declaration also includes 'User-centricity principles for design and delivery of digital public services'. The 2017 EU eGovernment benchmark sheds light onto the state-of-play of the digital transformation of European public administrations and the extent to which they are 'on track' with regard to achieving these objectives. This year's measurement gains further relevance when assessed against the background of the publication of the new eGovernment Action Plan 2016-2020 in April last year. The 2017 measurement not only provides an in-depth analysis of the progress made by European public administrations in their modernisation of service provision; it also delivers the 'baseline' against which the progress made by the actions under the new eGovernment Action Plan 2016-2020 can be benchmarked. In doing so, the benchmark aims at providing – like every year—an assessment of the extent to which European public administrations are on track to achieving the 2020 vision of a Digital Single Market. This Background Report presents a detailed overview of the updated measurement, the four life events, and provides the reader with a	STUDY		60 000	Published: 2018-01-12	https://publications.europa.eu/en/publication-detail/-/publication/7f1b4ecb-f9a7-11e7-b8f5-01aa75ed71a1

			thorough analysis of the results on the top-level benchmarks, in each of the 2016 life events. The current report is accompanied by an Insight Report which highlights the main findings of the benchmarking exercise.					
2018/0045	Mobile broadband prices in 2018	O	This study generates key inputs for DESI and the European Digital Progress Report. The study also generates valuable evidence to monitor the performance of the telecom regulatory framework in relation to retail mobile prices	STUDY		49 176		PUBLICATION NOT YET FINALISED
2017/0056	Pilot project for the development of digital skills through internships	O	Pilot scheme for the development of digital skills through internships. This study is needed to gather information from enterprises so to inform on specific aspects related to the implementation. The results of the study will be used for the implementation of the scheme in 2018.	STUDY		175 000		PUBLICATION NOT YET FINALISED
2016/0043	Broadband coverage in Europe 2017	O	The Broadband Coverage in Europe study is designed to monitor the progress of EU Member States toward their specific broadband coverage objectives – namely: 'Universal Broadband Coverage with speeds at least 30 Mbps by 2020' and 'Broadband Coverage of 50% of households with speeds at least 100 Mbps by 2020'.	STUDY		74 855	Published: 2018-06-07	https://publications.europa.eu/en/publication-detail/-/publication/0f079a7b-6ac8-11e8-9483-01aa75ed71a1
2016/0043	Broadband Coverage in Europe 2017	O	The Broadband Coverage in Europe study is designed to monitor the progress of EU Member States toward their specific broadband coverage objectives – namely: 'Universal Broadband Coverage with speeds at least 30 Mbps by 2020' and 'Broadband Coverage of 50% of households with speeds at least 100 Mbps by 2020'.	STUDY		74 855	Published: 2018-06-07	https://publications.europa.eu/en/publication-detail/-/publication/0f079a7b-6ac8-11e8-9483-01aa75ed71a1
2017/0052	International Digital Economy and Society Index 2018	O	This report introduces the International Digital Economy and Society Index (I-DESI), which evaluates the digital performance of EU countries and the EU as a whole, in comparison to 15 other countries (Australia, Brazil, Canada, China, Iceland, Israel, Japan, Korea (Rep.), Mexico, New Zealand, Norway, Russia, Switzerland, Turkey and the United States). The I-DESI benchmarks the development of the digital economy and society in Europe against top world peers	STUDY		50 000	Published: 2018-01-12	https://publications.europa.eu/en/publication-detail/-/publication/0655615d-f9a8-11e7-b8f5-01aa75ed71a1

			so as to identify room for improvement. The results show that the top countries in Europe are also leading in the global stage. The three top performing countries (Sweden, Denmark and Finland) are closely followed by Korea (Rep.), United States and Japan. The EU as a whole scores high in three out of the five main dimensions (Use of the Internet, Human Capital and Integration of Digital Technology). However, the results also show that the EU is behind the non-EU top performers in the other two dimensions (Connectivity and Digital Public Services) and on specific individual indicators. Moreover, there are substantial differences between EU member states concerning both score and progress over time (I-DESI 2014 vs. I-DESI 2015). Europe is progressing to slowly bridge this gap, which is pivotal to realise the potential of a Digital Single Market					
	b. Other studies cancelled in 2018							

¹ L - legal act, LMFF - legal base of MFF instrument, FR - financial regulation, REFIT - listen on REFIT programme, REFIT/L - both legal act requirement+listed on REFIT, CWP - 'evaluate first', O - other (please specify in Comments)

² Specify what programme/regulatory measure/initiative/policy area etc. has been covered

³ FC – fitness check, E – expenditure programme/measure, R – regulatory measure (not recognised as a FC), C – communication activity, I – internal Commission activity, O – other – please specify in the Comments

⁴ Allows to provide any comments related to the item (in particular changes compared to the planning). When relevant, the reasons for cancelling evaluations/ other studies also needs to be explained in this column.

⁵ For evaluations the references should be 1) number of its Evaluation Staff Working Document and number of the SWD's executive summary; 2) link to the supportive study of the SWD in EU bookshop. For other studies the references should be the link to EU bookshop or other reference where the 'other study' is published via different point.

ANNEX 10: Specific annexes related to 'Financial Management'

DG CONNECT activities covered by cross sub-delegations in 2018

Chapter	Article	Fund Mgt Center	Date of signature	Period	Heading	Amount	Date DG's answer	Verified par R1	Ares
09.03	09.0303	CNECT/EMPL	24.11.2015	unlimited	Promoting interoperability, sustainable deployment, operation and upgrading of trans-European digital service infrastructures, as well as coordination at European level	appropriation authorised			empl.f.3(2019)535134

Chapter	Article	Fund Mgt Center	Date of signature	Period	Heading	Amount	Date DG's answer	Verified par R1	Ares
09.03	09.0303	CNECT/ENER	4.7.2016	unlimited	Promoting interoperability, sustainable deployment, operation and upgrading of trans-European digital service infrastructures, as well as coordination at European level	appropriation authorised	25.1.2019	25.1.2019	(2019)434921

Chapter	Article	Fund Mgt Center	Date of signature	Period	Heading	Amount	Date DG's answer	Verified par R1	Ares
09.03	09.0303	CNECT/JUST	6.8.2015	unlimited	Promoting interoperability, sustainable deployment, operation and upgrading of trans-European digital service infrastructures, as well as coordination at European level	appropriation authorised			just.04.dir(2019)696206

Chapter	Article	Fund Mgt Center	Date of signature	Period	Heading	Amount	Date DG's answer	Verified par R1	Ares
09.04	09.040302	CNECT/RTD	14.4.2015	unlimited	Fostering inclusive, innovative and reflective European societies	appropriation authorised	Pending approval DG	6.2.2019	rtd.ddg2.r.2(2019)549109

Chapter	Article	Fund Mgt Center	Date of signature	Period	Heading	Amount	Date DG's answer	Verified par R1	Ares
09.02	09.0205	CNECT/SANTE	5.7.2017	unlimited	Measures concerning digital content, and audiovisual and other media industries	appropriation authorised	30.1.2019	30.1.2019	(2019)533508

Chapter	Article	Fund Mgt Center	Date of signature	Period	Heading	Amount	Date DG's answer	Verified par R1	Ares
26.01	26.030101	DIGIT/CNECT	25.4.2016	unlimited	Interoperability solutions for European public administrations, (ISA 2)	appropriation authorised	DG reply expected 8/2		

Chapter	Article	Fund Mgt Center	Date of signature	Period	Heading	Amount	Date DG's answer	Verified par R1	Ares
32.04	32.040301	ENER/CNECT	3.6.2014	unlimited	Social challenge: Making the transition to a reliable, sustainable and competitive energy system	appropriation authorised	5.2.2019	31.1.2019	(2019)656963

Chapter	Article	Fund Mgt Center	Date of signature	Period	Heading	Amount	Date DG's answer	Verified par R1	Ares
12.02	12.027706	FISMA/CNECT	30.6.2017	unlimited	Pilot project - Horizontal Task Force on Distributed Ledger Technology (DLT)	appropriation authorised	Reply DG expected 11-12/2/19		

Chapter	Article	Fund Mgt Center	Date of signature	Period	Heading	Amount	Date DG's answer	Verified par R1	Ares
---------	---------	-----------------	-------------------	--------	---------	--------	------------------	-----------------	------

19.06	19.060100	FPI/CNECT	2.3.2016	unlimited	Information outreach on the Union's external relations	appropriation authorised	5.2.2018	30.1.2019	(2019)661781
-------	-----------	-----------	----------	-----------	--	--------------------------	----------	-----------	--------------

Chapter	Article	Fund Mgt Center	Date of signature	Period	Heading	Amount	Date DG's answer	Verified par R1	Ares
02.03	02.030100	GROW/CNECT	12.12.2016	unlimited	Ensuring the protection of rights and empowering citizens	appropriation authorised	Pending approval DG	01.1.2019	cnect.ddg2.f.2(2019)334047

Chapter	Article	Fund Mgt Center	Date of signature	Period	Heading	Amount	Date DG's answer	Verified par R1	Ares
08.02	08.020304	RTD/CNECT	27.2.2015	unlimited	Achieving a European transport system that is resource-efficient, environmentally friendly, safe and seamless	appropriation authorised	Reply DG expected 8/2		

Table Y – Overview of the estimated cost of control

Direct budget implementation

Relevant control system related to Payments							
Ex ante controls			Ex post controls			Total	
EC total costs (in EUR million)	Funds managed (in EUR million)	Ratio (%)	EC total costs (in EUR million)	Total value verified and/or audited (in EUR million)	Ratio (%)	EC total estimated cost of control (in EUR million)	Ratio (%)
26.35	1 465.62	1.80%	0.77			27.12	1.85%
DG Connect share²² to CSC and REA							
19.23	1 465.62	1.31%	2.13			21.36	1.46%
Total							
45.58	1 465.62	3.11%	2.90	63²³	4.60%	48.48	3.31%

²² The amount contains: DG CONNECT share of costs for REA – EUR 11.24 million (ex-ante controls) and share of costs of DG Connect for CSC – EUR 10.12 million (79% for ex-ante and 21% for ex-post – based on the split of the total costs of the CSC).

²³ Total value audited for DG CONNECT in 2018 – H2020, FP7, Non-Research programmes.

Budget implementation tasks entrusted to other DGs and entities

Relevant control system related to Payments							
Ex ante controls			Ex post controls			Total	
EC total costs (in EUR million)	Funds managed (in EUR million)	Ratio (%)	EC total costs (in EUR million)	Total value verified and/or audited (in EUR million)	Ratio (%)	EC total estimated cost of control (in EUR million)	Ratio (%)
2.39	654.46	0.36%	-	-	-	2.39	0.36%

**ANNEX 11: Specific annexes related to
'Assessment of the effectiveness of the internal control
systems' (not applicable)**

ANNEX 12: Performance tables

General objective A Connected Digital Single Market				
Impact indicator 1: Aggregate score in Digital Economy and Society Index (DESI) EU-28 Explanation: DESI is a composite index that summarises relevant indicators on Europe's digital performance and tracks the evolution of EU Member States in digital competitiveness. The closer the value is to 100, the better. The DESI index is calculated as the weighted average of the five main DESI dimensions: 1. Connectivity (25%), 2. Human Capital (25%), 3. Use of Internet Services (15%), 4. Integration of Digital Technology (20%) and 5. Digital Public Services (15%). The DESI index is updated once a year.				
Source of the data: DESI				
Baseline (DESI 2015)	Latest known value (DESI-2018)		Target (2020)	
45 [Baseline adjusted: before: 46 according to new scale]	54		Increase	
Specific objective 1.1: Digital goods and services are available to consumers and businesses across Europe			Related to spending programme Creative Europe MEDIA	
Impact indicator 1: Number of Member States above the value 0.6 in Digital Economy and Society Index (DESI) Definition: The Digital Economy and Society Index (DESI) is a composite index that summarises relevant indicators on Europe's digital performance and tracks the evolution of EU Member States in digital competitiveness. The closer the value is to 100, the better. As digital technologies are changing very quickly, the methodology to calculate the index is reviewed every year. In its 2016-2020 Strategic Plan, DG CONNECT defined as a target that all 28 EU Member States should reach a DESI score of 0.6 by 2020 with the 2014 baseline indicating 13 Member States above this target value. Following change of methodology, to obtain the same 2014 baseline of 13 Member States, the target value corresponds to a DESI score of 43 and 25 EU Member States.				
Source of the data: https://digital-agenda-data.eu/datasets/desi/visualizations				
Baseline 2014	Interim Milestone 2017	Interim Milestone 2019	Target 2020	Latest known result 2018
13	20	24	28	25
Result indicator 1: Increased portability of online content service. Source of data: Impact assessment accompanying the proposal of Regulation on portability. Measurement every 2 years, as part of the monitoring of the impact of the legislation, comprehensive assessment 5 years after the start of application; data sources will be existing ones (e.g. European Audio-visual Observatory), data provided by online content service providers or right holders and possible specific studies or Eurobarometer				
Baseline 2015	Target 2017		Latest known results 2018	
Substantial number of online content services remain locked in national territories.	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 2017).		The Portability Regulation is applicable since 1.4.2018, with all paid online content services being now obliged to provide cross-border portability to their subscribers. A Eurobarometer survey will be carried out in Q1 2019 in order to assess consumers' experience with the new rules.	
Result indicator 2: New legislation to tackle unjustified geo-blocking is in place. Source of data: Roadmap for completing the DSM				
Baseline 2015	Interim Milestone		Target 2017	Latest known results 2018
	2016	2017		
DSM Strategy adopted by the Commission.	Legislative proposal to tackle	Adoption of the legislation	Entry into force of the legislation and transposition	Following political agreement in February 2018, the Regulation entered into force in March

	unjustified geo-blocking.	by EP and Council.	in national law in all Member States.	2018 and applies since 3.12.2018.
Main outputs in 2018:				
All new initiatives and REFIT initiatives from the Commission Work Programme				
Output	Indicator	Target date	Latest known results 2018	
Legislative proposals for a revision of Regulation (EC) 733/2002 establishing the '.eu' TLD and Regulation (EC) 874/2004 laying down public policy rules concerning the implementation and functions of the '.eu' TLD.	Adoption by the Commission.	Q2 2018 2017/CNECT/006 (CWP2017)	Commission proposal adopted on 27.4.2018. Political agreement reached on 5.12.2018. Final adoption by the co-legislators on-track for Q1 2019.	
Important items from work programmes/financing decisions/operational programmes				
Output	Indicator	Target date	Latest known results 2018	
Creative Europe MEDIA Work Programme 2019 following up the mid-term evaluation.	Adoption by the Commission.	Q2 2018	Adopted on 16.10.2018.	
Adoption of a Commission Delegated Act on supplementary performance indicators for the Creative Europe Programme.	Adoption by the Commission.	Q4 2018	The launch of the procedure was postponed. Adoption now envisaged for December 2019.	
Strategic stakeholder dialogue through the European Film Forum and national film funds on accompanying measures.	Holding 7 events in film festivals in 2018.	Q4 2018	DG CONNECT organised 9 European Film Forum events and supported an Open Method of Coordination Group of Member States.	
Other important outputs				
Output	Indicator	Target date	Latest known results 2018	
Directive on copyright in the DSM.	Adoption by the co-legislators.	Q3 2018	5 trilogues took place in 2018. Political agreement achieved at the trilogue in February 2019, which allows adoption during this legislature.	
Regulation applicable to certain online transmissions of broadcasting organisations and retransmissions of television and radio programmes.	Adoption by the co-legislators.	Q3 2018	Political agreement reached on 13.12.2018. The co-legislators decided to turn the Regulation into a Directive. Final adoption expected for Q1 2019.	

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.			Related to spending programme(s): Horizon 2020	
Result indicator 1: Future-friendly regulatory framework for electronic communications is in place in Member States.				
Source of data: Roadmap for completing the DSM.				
Baseline	Interim Milestone		Target	Latest known results
2015	2016	2018	2020	2018

Public Consultation	Adoption of the legislative proposal by the Commission	Adoption of legislation by EP and Council.	Transposition in national law in all Member States by 2020.	Regulation 2018/1971 (BEREC Regulation) and Directive 2018/1972 (European Electronic Communications Code) entered into force on 20.12.2018.
Result indicator 2: Number of connected devices in the EU, impacting the IoT market size. Source of data: Global System for Mobile Association (GSMA), Gartner, industry analysis (International Data Corporation) ²⁴				
Baseline 2016	Interim Milestone 2018	Target 2020 (Target is based on industrial forecasts)		Latest known results 2018
500 million phones and 100 million machine to machine devices	2 billion connected devices.	Multiplication by 10 in 2020, about 5 billion connected devices in Europe, 5 devices average per citizen.		The number of IoT connected devices worldwide increased by 30% between 2016 and 2018 to 7 billion, of which approximately 2 billion were in Europe. At the end of 2018, the number of SIM Connections in Europe was 680 million, corresponding to 470 million unique mobile subscribers. The proportion of smartphones is about 70%.
Result indicator 3: European agreement of at least 1 GHz identified above 6 GHz for 5G IMT 2020 allocation in 2019. Source of data: International Telecommunication Union, World Radio communication Conference decisions, work programme of the European Conference of Postal and Telecommunications Administrations (CEPT), EU research.				
Baseline 2015	Target 2019: Based on running research and use case as e.g. developed in project Mobile Enablers for 2020 Information Society (METIS) flagship 5G initiative, in the context of WRC 2019 preparatory actions			Latest known results 2018
0 MHz available for 5G above 6 GHz.	1 GHz minimum.			26 GHz band identified as pioneer band in Europe by CEPT. The Code sets a deadline of 31 December 2020 for Member States to authorise at least 1 GHz of the 26 GHz band for 5G use. Italy is the first Member State that has assigned 1 GHz of the band.
Result indicator 4: Policy instruments available for the public and private sector actors to invest in Open Service Platforms (OSP). Market actors consolidated by the use of FIWARE and supported by a number of significant industrial companies to reach an appropriate penetration in several markets. Source of data: Open Service Platforms study, FIWARE Core Industry Group. Continuous assessment will be carried out by projects selected under the WP 2016 in collaboration with the FIWARE foundation (in-house assessment based on the data sources listed above).				
Baseline 2015	Interim Milestone		Target 2020	Latest known results 2018
	2017	2019		
- No Member States programmes on OSP	- At least one Member State programme	- Increase in Member States programmes on OSP	Streamlining European OSP industry policy across all Member States.	- In Germany the 'Smart Services World' programme includes the OSP concept. - 5 large companies as

²⁴ <https://www.gsmainelligence.com/research/?file=357f1541c77358e61787fac35259dc92&download>

- 4 large Telco companies, - 5000 people in the FIWARE ecosystem.	on OSP - 6 large companies - 5000 people in the FIWARE ecosystem.	- 6 large companies - Increase beyond 5000 people in the FIWARE ecosystem.	including innovation funding actions.	Platinum members in FIWARE Foundation. - 10 000+ FIWARE Lab users and 11 500+ followers on Twitter.
Result indicator 5: Entry into force of a new legal framework for Audio-visual Media Services Directive (AVMSD)				
Source of data: Roadmap for completing the DSM.				
Baseline 2015	Interim Milestone		Target 2019	Latest known results 2018
	2016	2017		
Public consultation	Adoption of the legislative proposal by EC.	Adoption of legislative proposal by EP & Council.	All Member States have transposed directive.	The revised Audiovisual Media Services Directive (AVMSD) was adopted on 6.11.2018 and entered into force on 18.12.2018.
Result indicator 6: Transposition of legislative acquis in Network Information Security (NIS) and e-Privacy.				
Source of data:				
Baseline 2015	Interim Milestone		Target 2022	Latest known results 2018
	2016	2018		
Political agreement on NIS Directive	Adoption of the NIS Directive by EP and Council	1) All Member States have transposed NIS Directive 2) Adoption of the ePrivacy Regulation (revised ePrivacy Directive).	2) E-privacy regulation entered into force and is properly implemented by Member States.	1) 25 Member States have transposed the NIS Directive. 2) Negotiations on the ePrivacy Regulation are ongoing with a view to Council mandate in Q1 2019 and start of trilogues so that agreement can be reached in 2019.
Result indicator 7: Notified Electronic identifications (eIDs) by Member States to the Commission: Number of Member States that notify an eID scheme to the Commission under the eIDAS Regulation.				
Source of data: Electronic identification and trust services (eIDAS) Regulation				
Baseline Q4 2015	Interim Milestone		Target 2018	
	2016	2017		
0	7	13	All Member States	
Latest known results (2018)				
11 Member States: 8 Member States notified eID schemes. 3 other Member States' eID schemes in pre-notification or peer-review stage. The Commission has not direct competence to influence the Member States' choice to notify. However, the main policy challenge is to increase uptake of eID by both - public and private sector which would in turn incentivize Member States to notify. The Commission actively promotes the uptake of eID by the public and private sectors through stakeholder dialogue, specific expert group set up to develop eIDAS compliant eIDs to fulfil KYC and other customer due diligence requirements under the 5th Anti-money laundering directive, funding provided within CEF and Horizon 2020. Another major stimulator for the take up of eID will be the implementation of the Single Digital Gateway Regulation, incorporating the once-only principle.				
Main outputs in 2018:				
All new initiatives and REFIT initiatives from the Commission Work Programme				
Output	Indicator	Target date	Latest known results 2018	
Legislative proposal on fairness in platform-to-business relations.	Adoption by the Commission.	Q1 2018 PLAN/2017/1375	Adopted on 26 April 2018.	
Review of the Significant Market Power guidelines.	Adoption by the	Q2 2018 2017/CNECT/011	The guidelines were adopted on 26 April 2018.	

	Commission.		
Important items from work programmes/financing decisions/operational programmes			
Output	Indicator	Target date	Latest known results 2018
Commission proposal establishing the Network of cybersecurity competence centres and European Cybersecurity Research and Competence Centre.	Adoption by the Commission.	Q3 2018 PLAN/2017/1743	Proposal for a European Cybersecurity Competence Network and Centre adopted on 19 September 2018.
Evaluation of the Directive 96/9/EC on the legal protection of databases.	Adoption of the Evaluation Report (SWD).	Q2 2018 2017/CNECT/004	Adopted on 25 April 2018.
Other important outputs			
Output	Indicator	Target date	Latest known results 2018
Adoption of a Commission Decision (under Article 19 Framework Directive) on fixed and mobile termination rates in the EU	Adoption by the Commission.	Q3 2018 2017/CNECT/012	The initiative was abandoned and replaced by a provision in the European Electronic Communications Code (Article 75).
Legislative proposals for a European Electronic Communications Code and a new BEREC Regulation	Political agreement of the co-legislators.	Q2 2018	Adoption of both legislative instruments on 11.12.2018, after political agreement end Q2 2018. Directive (EU) 2018/1972 establishing the European Electronic Communications Code and Regulation (EU) 2018/1971 establishing the Body of European Regulators for Electronic Communications (BEREC) and the Agency for Support for BEREC (BEREC Office) both entered into force on 20.12.2018.
Commission Notice on the Weighted Average Cost of Capital (WACC)	Adoption by the Commission.	Q2 2018 PLAN/2017/1800	Adoption planned for June 2019.
Interim Report to the EP and Council on the implementation of Roam-Like-At-Home	Adoption by the Commission.	Q4 2018 PLAN/2018/2712	Adopted on 12.12.2018.
Report to the EP and Council on the implementation of Directive 2014/61/EU	Adoption by the Commission.	Q2 2018 PLAN/2017/1573	Adopted on 27.6.2018.
Legislative proposal on Privacy and Electronic Communications	Adoption by the co-legislators.	Q2 2018	Negotiations are ongoing. Council General Approach expected by mid-2019.

Specific objective 1.3: The digital economy can develop to its full potential underpinned by initiatives enabling full growth of digital and data technologies.			Related to spending programme: H2020, CEF
Result indicator 1: Actions to digitise European industry			
Source of data:			
Baseline 2015	Target 2020	Latest known results 2018	
European industry not prepared for	Roll-out of actions and establishing digital innovation hubs in every	At the end of 2018, there are Digital Innovation Hubs in 120 out	

the challenges posed by digitalisation.	region.	of 281 NUTS 2 regions in Europe. Several actions are underway to train organisations to become a Digital Innovation Hub. It is expected that by 2020 almost all regions will be covered.	
Result indicator 2: Number of TOP10 supercomputers installed in the EU by 2020 Source of data: http://www.top500.org			
Baseline 2015	Interim Milestone 2018	Target 2020	Latest known results 2018
1	2 in TOP10	3 in Top 10. The EuroHPC Joint Undertaking has the objective of acquiring 2 pre-exascale supercomputers by 2020 aiming at the top 10 ranking.	On track. The EuroHPC Joint Undertaking started in 2018 the preparations for the acquisition of the 2 pre-exascale supercomputers by 2020. Regarding Member States, Germany ranked 1 supercomputer in the top 10.
Result indicator 3: Removal of legislative and regulatory obstacles at Member States' level to the free flow of data. Source of data: Two studies on 'Facilitating cross-border data flow in the DSM'			
Baseline 2016	Interim Milestone 2017		Target 2020
	2018		
Data localisation restrictions as identified by the two studies on 'Facilitating cross-border data flow in the DSM' – data available in Q4 2016.	Adoption of the legislative proposal by the Commission.	Adoption of legislative proposal by EP and Council.	Removal of legislative and regulatory obstacles at Member States' level to the free flow of data by 2020.
Latest known results (2018) The Regulation was adopted on 14.11.2018 and will apply as of 28.5.2019. The Regulation provides that by 30.5.2021, Member States shall ensure that any existing data localisation requirement is repealed.			
Result indicator 4: Interoperable IoT solutions developed for automotive market. Source of data: European Road Transport Research Advisory Council, 5G PPP, industry			
Baseline 2015	Interim Milestone 2016		Target 2020: Target conforms to automotive industry plans
6 early pilots for connected and autonomous cars.	Large-scale pilots showcasing Society of Automotive Engineers autonomy level 4 or higher in at least 10 Member States.		Availability of infrastructure for connected cars; e.g. Long-Term Evolution (LTE)-V 5G upgradable.
Latest known results (2018) 10 5G Corridors were agreed among Member States allowing for large-scale pilots. 3 trial projects were launched in 2018 operating on 4 of these corridors.			
Result indicator 5: New Data framework for connected automated driving and energy efficient smart homes. Source of data: Support action from 2015 Transport call or 2014 Smart cities call.			
Baseline 2015	Target 2020		Latest known results 2018
None.	The framework is used by 10 major companies in at least 5 different countries.		Smart Readiness Indicator entered into force in July 2018 following the revision of the European Energy Performance of Buildings Directive. Its transposition deadline is March 2020. The test phase of the

		technical support study is scheduled for last quarter of 2019.	
Result indicator 6: Citizens and businesses can access eGovernment services in any country of the EU, regardless of their country of origin. Source of data: CEF Digital.			
Baseline 2014/2015	Interim Milestone 2016	Target 2020: as listed in CEF Digital and defined in annual Work Programmes	
CEF Work Programmes 1 and 2 adopted.	Launch of 4 sectoral Digital Service Infrastructures (DSIs) reusing building block DSIs (eProcurement, Business Registers Interconnection Systems, European Energy Service Initiative, eJustice).	All CEF building block DSIs (eID, eDelivery, eSignature, eInvoicing, Automated Translation) are effectively reused by all Member States and integrated in all CEF-funded domain-specific DSIs.	
Latest known results (2018) - All Member States are re-using at least one building block, with most re-using multiple. - All the sector-specific DSIs supported under the 2018 work programme of CEF Telecom (Business Registers Interconnection Systems, Electronic Exchange of Social Security Information, Online Dispute Resolution, eJustice Portal, eProcurement) are re-using one or more of the building blocks.			
Main outputs in 2018:			
All new initiatives and REFIT initiatives from the Commission Work Programme			
Output	Indicator	Target date	Latest known results 2018
Review of Directive 2013/37/EU on the re-use of public sector information (REFIT).	Adoption by the Commission.	Q2 2018 PLAN/2017/1391	Adopted on 25.4.2018.
Actions at EU level to harness the benefits of technological innovation for the European financial sector.	Adoption by the Commission.	Q1 2018 PLAN/2017/635	The FinTech action plan: For a more competitive and innovative European financial sector was adopted on 8.3.2018.
Important items from work programmes/financing decisions/operational programmes			
Output	Indicator	Target date	Latest known results 2018
Implementation of the European Open Science Cloud (EOSC) Portal	Launching the EOSC portal prototype	Q4	Prototype presented to EU science ministers and future users on 28.11.2018 in Vienna.
Commission proposal on the Council regulation for setting up the EuroHPC Joint Undertaking.	Adoption by the Commission Adoption by the Council.	Q1 2018 PLAN/2017/1304 Q4 2018	Proposal adopted on 11.1.2018. Regulation adopted by Council on 28.9.2018 EuroHPC Joint Undertaking formally established in October 2018, and first Governing Board held on 7.11.2018.
Implementation of the HPC strategy: - Developing a European low-power microprocessor - Pan-European HPC infrastructure and services (PRACE) - HPC Centres of Excellence.	Signature of grants.	Q4 2018	- Framework Partnership Agreement established in March 2018 for the European Processor Initiative. Signature of Grant Agreement in December 2018; - PRACE grant agreement signed in Q4 2018 (PRACE-6IP), ensuring computing time for scientific and industrial

			research provided by the best European supercomputers ; - 10 HPC Centres of Excellence for world-class HPC applications ecosystem in Europe (Result of second call in 2018).
Implementing the Digitising European Industry (DEI) strategy.	Launching DEI-related calls and selecting first projects addressing digital innovation hubs and digital industrial platforms.	Q1 2018	Creation of a focus area 'Digitising and Transforming European Industry and services' in the H2020 work programme 2018-20. Launch of calls for topics supporting digital innovation hubs and platforms with contributions from LEIT-ICT, SC1, SC2 and SC3. Q1-Q2: Selection of robotics innovation hubs for EUR 66 million.
Other important outputs			
Output	Indicator	Target date	Latest known results 2018
Communication on artificial intelligence and robotics.	Adoption by the Commission.	Q1 2018 PLAN/2017/1777	Communication COM(2018)237 'Artificial Intelligence for Europe' adopted on 25.04.2018.
Coordinated Plan on Artificial Intelligence.	Development of the plan with Member States Adoption by the Commission.	Q4 2018	Communication COM(2018)795 'Coordinated Plan on Artificial Intelligence' adopted on 7.12.2018 (with the plan developed with Member States in annex).
DG CONNECT contribution to the Communication Action Plan on the Future of Learning.	Adoption by the Commission.	Q1 2018 PLAN/2017/1744	Communication – Digital Education Action Plan and Staff Working Document adopted on 17.1.2018. COM(2018) 22 final.
Staff Working Document on the Implementation Roadmap for the European Open Science Cloud.	Adopted by the Commission.	Q1	SWD(2018) 83 final, adopted on 14.3.2018.
Revision of the Recommendation on access to and preservation of Scientific Information in the context of the Data Package 'Towards a common European data space'.	Adopted by the Commission.	Q2	COM(2018) 232 final, adopted on 25.04.2018.
Staff Working Document on liability for emerging digital technologies.	Adoption by the Commission.	Q2 2018	SWD (2018) 137/3 adopted on 25.4.2018.
Regulation on a framework for the free flow of non-personal data in the EU.	Adoption by the co-legislators.	Q4 2018	The Regulation was adopted on 14.11.2018 and entered into force on 18.12.2018.
Industry-driven self-regulation approach for cloud policies.	Launch of a DSM Cloud Stakeholders Platform on the basis of inclusive and diverse participation (SMEs and users alongside providers).	Q2 2018	On 17.4.2018 the new DSM Cloud Stakeholders Platform was launched in Brussels. Three plenary meetings with more than 200 organisations took place in 2018, resulting e.g. in the development of two codes of conduct on data portability and cloud switching,

			targeting respectively infrastructure cloud services and cloud-based software applications. Before the codes can be finally adopted by the working group, stakeholders have to finalise discussions on the governance of the codes (by end 2019).
Cross-border experimentation and pre-deployment projects on Connected and Automated Driving covering regulatory issues and 5G.	At least two projects launched as part of the 5G PPP. Operational instruments on cybersecurity, data and privacy to complement existing instruments.	Q4 2018 Q4 2018	Three 5G PPP projects contracted in November 2018 covering 4 Corridors and about 1200km of motorways.
Connected Automated Driving: framework agreements with Member States on a) cross-border regulatory issues concerning field tests (focus on digital aspects) and b) data issues such as ownership, access, storage.	Agreement reached between Member States concerned by a testing corridor.	Q2 2018	27 Member States plus Norway and Switzerland intensified cooperation in the establishment of 5G cross-border corridors for large scale testing and early deployment purpose. This effort resulted in the establishment of 8 corridors.
5G PPP: launch of an industry large scale validation platform for 5G in Europe.	Launch of 3 platforms, capable of validating the main 5G KPI's (bandwidth, latency, density, services).	Q2 2018	Three 5G end to end validation platforms contracted in June 2018 providing more than 20 test sites and nodes across Europe and open to 'plug in' testing for vertical industries.
Better Digital Skills for all Europeans, accompanied by H2020 support.	Implementation of the Digital Opportunity pilot and first results.	Q3 2018	The Digital Opportunity pilot was launched successfully and at the end of 2018, about 1 800 traineeships had already started.

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 programmes: Connecting Europe Facility (CEF), H2020

Result indicator1: Ensure favourable conditions towards full deployment of 5G networks, notably by a 5G PPP investment reaching EUR 700 million matched by 5 times private investment.

Source of data: Industry roadmaps

Baseline 2015	Interim Milestone		Target 2022: This is in line with industry roadmaps
	2017	2020	
Availability of 4 G networks based on 'Long term evolution (LTE)' standards in all Member States EUR 129 million committed as per phase 1 of 5G PPP investment.	EUR 283 million committed after implementation of phase 2.	First 5G service introduction in at least 1 Member State	Availability of 5G full solutions including operations of bands above 6GHz in at least 5 Member States. EUR 520 million committed for Phase 3 implementation.

Latest known results (2018):

By 2018, 45% of connections covered by 4G, 63% predicted for 2025. 210 million 5G connections

in 2025 (29%). In 2018, 5G PPP investments of EUR 110 million are enabling extensive user trials for deployments of full-fledged 5G beyond 2020. Overall 5G PPP project investment until end 2018 lies in the order of EUR 380 million.

Result indicator 2: Deploying of network infrastructure enabling the Gigabit society to socio-economic drivers

Source of data: DESI Index /scoreboard and industry reports

Baseline June 2015	Interim Milestone 2020	Target 2022	Latest known results (data collected 2018)
a) 71% coverage at 30 Mbps (Digital Agenda Europe (DAE) target) b) 10% take-up at 100 Mbps (DAE target)	a) 100% coverage at 30 Mbps (EU citizens, DAE target) b) 50% take-up at 100 Mbps (households, DAE target)	c) Coverage of socio economic drivers with Gigabit connectivity allowing 1 Gbps download, 100 Mbps upload and very low latency. The targets for coverage were determined in 2016 in the context of the Gigabit Society Communication.	a) The total fixed broadband coverage is 83.1% . b) The total EU average ultrafast broadband penetration is 19.9% . c) Data not yet available.

Main outputs in 2018:

Important items from work programmes/financing decisions/operational programmes

Output	Indicator (e.g. adoption by the Commission; completion)	Target date	Latest known results (situation on 31.12.2018)
CEF Broadband fund.	Raising at least EUR 100 million of funds from market investors in addition to EU/EIB funds. Finance first 3 projects.	Q2 2018	The Connecting Europe Broadband Fund was successfully launched on 27.6.2018 and has raised EUR 420 million at first closing, of which EUR 240 from the EIB and the Commission (CEF) and EUR 180 million from market investors. Additional (private) fundraising efforts are ongoing for subsequent closing(s) up until December 2019. First projects expected to receive partial funding during Q1 2019, following delays in the negotiations regarding the instrument's governance structure, which were finalized in 2018.
WiFi4EU voucher scheme for local authorities.	- First call (EUR 42 million);	November 2018	2 800 vouchers of EUR 15 000 value each awarded. Over 2 000 grant agreements countersigned at 25.1.2019.
CEF Telecom Work Programme 2018 financing projects of common interest in the form of Digital Service Infrastructures.	Adoption of the CEF Telecom Work Programme.	Q1 2018 PLAN/2017/2150	Adopted in February: (EU) 2018/568 Amended in November: (EU) 2018/7635.

Other important outputs

Output	Indicator	Target date	Latest known results (situation on 31.12.2018)
Commission implementing Decision amending the designation of the 900 MHz and 1800 MHz frequency bands under harmonised	Adoption by the Commission.	Q2 2018 PLAN/2017/1924	Adopted on 20.4.2018: Commission Implementing Decision (EU) 2018/637 amending Decision 2009/766/EC on the harmonisation of the 900 MHz and 1800 MHz frequency bands for terrestrial systems capable of providing pan-European electronic communications services in the

technical conditions.			Community as regards relevant technical conditions for the Internet of Things.
Commission implementing Decision on harmonisation of the radio spectrum for use by SRD in the frequency bands 870-876 and 915-921 MHz.	Adoption by the Commission.	Q1 2018 PLAN/2017/1054	Adopted on 11.10.2018: Commission Implementing Decision (EU) 2018/1538 on the harmonisation of radio spectrum for use by short-range devices within the 874-876 and 915-921 MHz frequency bands.
Implementation of the 5G Action Plan a) advanced pre-commercial trials b) Guidance through 5G Working Group of Member States and EC.	a) At least 2 5G CAD experimentation projects launched b) Guidance document agreed between the Commission and Member States in the COCOM committee.	a) Q4 2018 b) Q2 2018	a) Three 5G corridor trials launched in 2018 b) Report on the exchange of best practices concerning national broadband strategies and 5G 'path-to-deployment' published in September 2018.
Action Plan for rural broadband : a) Reinforcing Broadband Competence Offices; b) Deployment of broadband Country Missions to the five priority countries; c) Development of a common Methodology for planning, reporting, monitoring of broadband investments; d) Set up of a Rural Proof Test; e) Update of the Guide on Very High-Speed Broadband; f) Design of a rural broadband project.	Implementation of 6 actions.	a) Q4 2018 b) Q2 2018 c) Q2 2018 d) Q2 2018 e) Q4 2018 f) Q4 2018	a) List of BCO's includes now 28 national and 85 regional BCO; a BCO assessment dashboard, remedial actions and dedicated brochures were developed. b) Missions to Croatia, Slovakia, Bulgaria, Czech Republic and Romania with specific support measures (e.g. concerning decisions on state aid, right investment models, re-programming and appropriate mapping) were made. c) Draft methodology with common indicators was created and will now be populated with data. There are four indicators, namely: Rural overall NGA coverage; Rural coverage of at least 100 Mbit/s (or FTTP); Availability of funds; Operational Capacity. Data is being collected for the five priority Member States of the Rural Action Plan. d) Rural Proof Test with checklist was shared with Member States. e) New Guide will be finished in June 2019. f) Study on best practice for local authorities concerning the financing, business models, technology solutions, planning and implementing of rural broadband projects will be finished in February 2019.

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

Related to spending programme: Creative Europe

Result indicator 1: Share of European works in linear broadcast services.

Source of data: Second report on the application of Articles 16 and 17 of the AVMSD for the period of 2011-12.

Baseline 2012	Target 2020	Latest known results 2014
64.1% (average share on European level).	65% (average share on European level). A mature market that seems to have reached its level of saturation, so stability to be expected with a potential minor increase.	63.72% (the EU average transmission time dedicated to European works by all reported channels in EU-28).

Result indicator 2: Share of European films in the catalogue of on-demand services.

Source of data: European Audio-visual Observatory – Report on the origin of films and TV series in VOD catalogues – 2017 edition.

Baseline 2015	Target 2020	Latest known results 2018
27% (average share)	30% (average share)	<p>The share of European films proposed by the 4 pan-European TVoD services corresponding to 47 different catalogues (Apple iTunes in 25 countries, Chili TV in 5 countries, Microsoft Film & TV series in 12 countries and Rakuten in 5 countries) ranges from 17% to 30%. The average share of European films proposed by the SVoD catalogues is 20%.</p> <p>The revised Audiovisual Media Services Directive reinforces the obligation to promote European works for VODs, which will be obliged to have a 30% share in their catalogues.</p>

Result indicator 3: Share of non-national European works in linear broadcast services.

Source of data: Study on the implementation of the provisions of the Audio-visual Media Services Directive concerning the promotion of European works. Next study on the promotion of European works.

Baseline 2010	Target 2020	Latest known results 2016
8.1% (average share)	10% (average share)	Non-domestic European works make up 16.88% of the total qualifying European transmission hours in 2016. This picture is different from the 2011 study, where the percentage of non-domestic European works make up 8.1% of the total qualifying transmission hours in 2010. There is a greater circulation of European works, although domestic productions still represent the majority.

Result indicator 4: Share of non-national European films in the catalogues of on-demand services.			
Source of data: European Audio-visual Observatory – Report on the origin of films and TV series in VOD catalogues – 2017 edition			
Baseline 2015	Target 2020	Latest known results 2017	
21% (average share)	25% (average share)	EU non-national films available on the VoD catalogues are often co-productions. Whereas co-productions represent 22% of films produced in Europe, they account from 38% to 57% of all EU films available.	
Result indicator 5: New legislation for web accessibility in place in Member States.			
Source of data: Roadmap for completing the DSM.			
Baseline 2015	Interim Milestone 2016	Target 2019	Latest known results 2018
Proposal for a Directive on the Accessibility of Public Sector Bodies' Websites adopted in 2012.	Adoption of Directive by EP and Council.	Transposition in national law in all Member States (transposition deadline to 23.09.2018.)	The Directive was adopted on 26 October 2016. Full transposition notified by 11 Member States and partial transposition by 6 Member States.
Main outputs in 2018:			
All new initiatives and REFIT initiatives from the Commission Work Programme			
Output	Indicator	Target date	Latest known results (situation on 31.12.2018)
Communication on Fake news and online misinformation.	Adoption by the Commission.	Q2 2018 PLAN/2017/1783	Adopted on 26.4.2018.
Commission report from the Commission to the European Parliament and the Council on the evaluation of Europeana and the way forward and accompanying Staff Working Document	Adoption by the Commission.	Q2 2018	Adopted on 06.09.2018.
Important items from work programmes/financing decisions/operational programmes			
Output	Indicator	Target date	Latest known results (situation on 31.12.2018)
Full implementation of Cultural and Creative Sectors Guarantee Facility, including the top up from EFSI.	Guarantee Agreements signed up to the ceiling of the Guarantee Facility, including the EFSI top up.	Q4 2018	Guarantee Agreements were signed up to the ceiling of the Guarantee Facility, including the EFSI top up.

Facilitating a European Centre for Press and Media Freedom (ECPMF).	Second year of the preparatory action - Funding of ECPMF and its partners' activities, and a project on financing investigative journalism.	Q1 2018	In September 2018, ECPMF presented an interim report on the activities carried out under the preparatory action.
H2020 ICT European Media Innovation – Social Media.	Timely launch of 6 projects (budget: EUR 21 million).	Q4 2018	Ten projects on social media were successfully launched following the call evaluated in 2018.
Creative Europe MEDIA Work programme 2019 following up the mid-term evaluation.	Adoption by the Commission.	Q2 2018	Adopted on 16.10.2018.
Other important outputs			
Output	Indicator	Target date	Latest known results (situation on 31.12.2018)
Strengthening Europeana (CEF DSI).	Independent evaluation of Europeana and new funding method.	Q2 2018 PLAN/2016/55	The independent evaluation fed in the Report of the Commission of 6.9.2018 on the evaluation of Europeana and the way forward. Award of the open tender of the Europeana CEF DSI in July 2018.

General objective A New Boost for Jobs, Growth and Investment				
Impact indicator 1: Europe 2020 target: Percentage of EU GDP invested in R&D (combined public and private investment).				
Source of data: Eurostat ²⁵				
Baseline 2012	Target (2020) Europe 2020 target		Latest known results 2017	
2.00% [Baseline adjusted, before: 2.01%]	3.00%		2.07% (provisional)	
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(s): Horizon 2020	
Result indicator 1: H2020 to become an important source of innovation for young companies and dynamic SMEs in pursuit of excellence by maintaining at least the current percentage of H2020 ICT budget dedicated to innovation activities				
Source: internal DG CONNECT statistics.				
Baseline 2015	Interim Milestone		Target 2020	Latest known results 2018
	2017	2019		
45% in 2015	45%	45%	45 % of the 2020	45% of the 2020

²⁵ Eurostat periodically revises its published data to reflect new or improved information, also for previous years. The latest published data is available by clicking on 'bookmark'. The 'latest known value' column reflects the data that was available at the time of the preparation of the AARs 2018 and it is the reference point for the AARs of Commission services.

			H2020 LEIT ICT grant budget is allocated to Innovation Actions.	H2020 LEIT ICT grant budget is allocated to Innovation Actions.
Result indicator 2: Established platform for national cybersecurity industry to cooperate at European level				
Source of data:				
Baseline	Interim Milestone 2017		Target 2020	
None	Contractual Public Private Partnership established and working on Research and Innovation implementation		Industrial cooperation extended to all industrial aspects (standardisation, certification, investment, skills...)	
Latest known results (2018): The European Cyber Security Organisation currently counts about 250 members, organised in six working groups covering: <ul style="list-style-type: none">- Standardisation, certification, labelling and supply chain management- Market deployment, investments and international- Sectoral demand- Support to SMEs etc.- Education, awareness, training, cyber ranges- Strategic research and innovation agenda.				
Result indicator 3: Number of cities involved in replication and /or dissemination of solutions developed under the European Innovation Partnership on Smart Cities and Communities (EIP SCC) and/or H2020.				
Source of data: The value of this indicator will be monitored by a support action from the 2014 Smart Cities call.				
Baseline 2015	Target 2020		Latest known results 2018	
0 cities	50 cities: based on the requested replication rate in H2020 Smart Cities lighthouse projects.		40 lighthouse cities and 53 follower cities from the 14 ongoing Smart Cities Call projects.	
Result indicator 4: Number of pilot projects launched for Open Government activities (including eParticipation, co-creation) and Once Only Large Scale Pilot (according to DSM).				
Source of Data: H2020 WP SC6. In 2018 (midterm review of OOP pilot) and 2019 (assessment of the need for legal measures).				
Baseline 2015	Interim Milestone		Target 2019	Latest known results 2018
	2016	2019		
Adoption of H2020 WP 2016-17 with relevant Open Government objectives and calls.	Launch of 4-5 Open Government projects (H2020 WP2016/17) and 1 large-scale pilot to test implementation of Once-Only Principle (OOP) for businesses across borders (H2020 WP 2016/17).	Mid-term review of pilots and OOP pilot.	20 projects launched. Assessment of necessity for legal measures of OOP completed.	H2020 WP 2016-2017: 13 ongoing projects H2020 WP 2018-2020: - Integration of migrants: 4 projects - transformative impact of disruptive technologies in public services: 2 projects e.g blockchain.
Main outputs in 2018:				
Important items from work programmes/financing decisions/operational programmes				
Output	Indicator	Target date	Latest known results 2018	
Communication on Digital Transformation of Health and Care in the Digital Single Market and	Adoption by the Commission.	Q1 2018 PLAN/2017/1353	Adopted on 25.04.2018.	

accompanying Staff Working Paper.			
Staff Working Paper on Progress of the European Innovation partnership.	Adoption by the Commission.	Q3 2018	Adopted on 9.10.2018.
Reinforced Startup Europe with 7 new projects to benefit 3500 startups and raising 850 mio EUR from the market in two years.	Number of startups that benefit from Startup Europe Capital raised from the market.	1750 startups EUR 425 million	Seven H2020 projects were launched, which supported 1700 startups to raise EUR 450 million.
Full implementation of the One Stop Shop for startups in Europe.	Number of unique visitors to the One Stops Shop and presence in social media.	50K unique visitors per month, 30K twitter followers, 20K Facebook group members.	The One Stop Shop reached 30K unique visitors per month. Also 28K followers on Twitter and 25K Facebook group members. A new LinkedIn was also created.
Update of the H2020 Work Programme 2018-20 including Societal Challenges.	Adoption by the Commission.	Q1 2018 for amendment 1; Q3 2018 for amendment 2.	Three amendments adopted for H2020 on 31.1.2018, 24.7.2018 and 13.11.2018.
Public launch of Innovation Radar tool and launch of two support projects.	Public launch event and start of support projects.	Q2 2018	The public Innovation Radar platform was launched at the Digital Day 3 in April 2018. Two projects (MERLIN & IRSUS) support the Radar.
Startup Europe Open to the World: creation of platforms with Africa, Latin America, Asia and US Silicon Valley.	International platforms created to connect EU ecosystems with international ecosystems.	Q4 2018	The 4 platforms were set up.
H2020 – Societal challenges calls.	Timely launch of 5 calls (budget: EUR 219.5 million EUR).	Q4 2018	Done on time.
Other important outputs			
Output	Indicator	Target date	Latest known results 2018
Standardisation initiatives, notably through the European Telecommunications Standards Institute on the basis of the European Smart Cities Framework.	2-3 standardisation initiatives. (German DIN standardisation initiative established; further initiatives at the International Telecommunication Union (ITU) to be	Q4 2018	ITU-T initiatives established; work is ongoing in the ITU-T Study Group 20 - Focus Group on Data Processing and Management to support IoT and Smart Cities & Communities.

	established).		
--	---------------	--	--

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	
Result indicator 1: Future and Emerging Technologies: Number of publications in peer-reviewed high-impact journals per EUR 10 million of EU funding (defined in H2020 Specific Programme Regulation).					
Source of data: Reporting done by H2020 beneficiaries via Common Grant Management System (SYGMA) available through CORDA (RTD/CSC).					
Baseline N/A		Target 2020: The target was set on the basis of FP7 data for overall number of publications and estimating the share of publications in high-impact journals)			Latest known results 2018
N/A new approach adopted under H2020		25 per EUR 10 million			9.7 per EUR 10 million
Result indicator 2: Reinforcing industrial partnerships and strengthened cloud and software research that will enable technological capacity building and wide take up of cloud in Europe.					
Source of data: Strategic Research and Innovation Agenda to be developed by stakeholders by mid-2016 - COMPASS / SYGMA					
Baseline 2014		Interim Milestone 2018		Target 2020	
EUR 174 million investment from H2020 calls 2014/16		EUR 314 million (cumulative)		EUR 384 million (cumulative). Further leveraging public funding to secure additional private investments and potential ESIF funding.	
				In 2018 EUR 21.5 million funding of software and cloud technologies. Between 2014-2018 EUR 216 million, 67 projects funded, including EUR 10 million for international cooperation.	
Result indicator 3: Leveraging private investment through Contractual Private Public Partnerships.					
Source of data: Internal Commission plans and contractual arrangement signed with the associations.					
Baseline 2014		Interim Milestone 2017		Target 2020: target agreed at the inception of the cPPPs	
Level of private		Additional private		Private investment	
				2017 leverage information is based on the published cPPP reports ²⁶ . All cPPPs clearly exceed the 2020	

²⁶ a) 5G cPPP: <https://5g-ppp.eu/wp-content/uploads/2018/10/5G-PPP-Progress-Monitoring-Report-2017.pdf>

b) Cyber: <http://www.ecs-org.eu/documents/uploads/progress-monitoring-report-2016-2017.pdf>

c) Big Data Value cPPP:

http://www.bdva.eu/sites/default/files/MR2017_BDV_PPP_Main%20Report_September%202018_1.pdf

d) Factories of the Future cPPP:

https://www.effra.eu/sites/default/files/fof_cppp_progress_monitoring_report_for_2017_online.pdf

e) HPC cPPP: https://www.etp4hpc.eu/pujades/files/2017_PMR_HPC_cPPP%20Final_web.pdf

f) Photonics cPPP: <https://www.photonics21.org/download/ppp-services/photonics-downloads/cPPP-Progress-Monitoring-Report-2018-final-002.pdf>

funding in Research and Development	funding matching at least EU funding (i.e. EUR 1.3 billion)	at least 3 times the total EU funding for the cPPPs	leverage target of 3. a) 5G cPPP: leverage factor of 7 ²⁷ ; b) Cyber: leverage factor above 5; c) Big Data Value cPPP: leverage factor of 6.95; d) Factories of the Future cPPP: leverage factor rate of 4.65; e) High Performance Computing cPPP: leverage factor above 5; f) Photonics cPPP: leverage factor estimated to 4.	
Result indicator 4: Increase development of networks beyond 5G technologies, exploit spectrum above 90 Ghz up to 1Thz for mobile communications, and invent novel architectures and systems for wireless communications. Source of data: H2020 Future Internet WP2016/17, Network technologies consultations for WP2016/17, Networld2020 beyond 5G white paper, WP2016/17.				
Baseline 2015	Interim Milestone 2017		Target 2025	Latest known results 2018
EUR 18 million for Networking research Beyond 5G; Long term R&D to support the 1000+ constituency that forms the European Technology Platform	EUR 72 million (cumulative)		EUR 200 million (cumulative) to be commensurate with required efforts to develop technologies beyond 5G.	EUR 18 million 'fresh money' invested end of 2017 and contracts running in 2018. In Finland, authorities announced a EUR 250 million programme for 6G developments over the next 8 years.
Result indicator 5: Industrial strategy for Next Generation Internet. Maximise the impact of the current PPPs by integration of the key outcomes into a Next Generation Internet objective. As a very large innovation policy initiative it is a project of important European value beyond 2020. Source of data: FIWARE ecosystem and others.				
Baseline 2016	Interim Milestone 2017		Target 2020	Latest known results 2018
Concept development	Start developing the industrial strategy and policy support ecosystem. Allocation of funds.	Interim outcomes European industry policy impact.	Adoption of the industrial strategy for the Next Generation Internet.	First projects started including the selection of the first 4 NGI intermediaries in charge of directly funding and supporting internet innovators.
Result indicator 6: 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). Source of data: CORDA data warehouse (data collected by CSC).				
Baseline 2014	Target (2020: as defined in the Horizon 2020 Specific Programme)			Latest known results 2018
N/A: this is a new approach under Horizon 2020	3 patent applications per EUR 10 million funding			0.35 patent applications per EUR 10 million funding in LEIT ICT and 0.2 patent applications per EUR 10 million funding in FET
Result indicator 7: Leveraged investment from SMEs, industry, public bodies and Non-Governmental Organisations in the Active & Assisted Living Programme and H2020 Societal Challenge 1 topics. Source of data: Cordis+ Active & Assisted Living Programme funding reports.				
Baseline 2015	Target 2020			Latest known results 2018
EUR 28 million	EUR 160 million The expected leveraged investment from SMEs.			EUR 74 million AAL + EUR 37 million H2020 totalling EUR

²⁷ The methodology used for calculating the leveraging factor is not fully consistent with the methodology used for other partnerships. The leveraging factor of 7 corresponds to EU actors only. When applied to all actors, including non-EU actors that have significant Research & Innovation investment in 5G, the leveraging factor would be in the order of 21.

	industry, public bodies and non- governmental organisations in the Active & Assisted Living Programme and H2020 Societal Challenge 1 topics, estimated on the basis of the used co-funding instruments.	111 million.	
Main outputs in 2018:			
Important items from work programmes/financing decisions/operational programmes			
Output	Indicator	Target date	Latest known results 2018
H2020 – Future and Emerging Technologies Quantum Technologies FET Flagship.	Timely signature of grant agreements (EUR 130 million).	Q3 2018	Launch of the Quantum Technologies Flagship on 1 October 2018 with the start of 19 Research and Innovation Actions.
Update of the H2020 Work Programme 2018-20 - Excellent Science (FET, e-infrastructures), - Industrial Leadership (LEIT ICT, LEIT ICT ECSEL), - Cross-cutting activities.	Adoption by the Commission.	Q1 2018 for amendment 1 and Q3 2018 for amendment 2	Three amendments adopted for H2020 on 31.1.2018, 24.7.2018 and 13.11.2018.
Setting up of Electronic Leaders Group 2.	First meeting.	Q1 2018	Commissioner and high-level representatives of companies and research and technology organisations active in semiconductor technology met on 1.2.2018. Report delivered on 19.6.2018.
H2020 - Excellent Science calls.	Timely launch of 4 calls (budget: EUR 46.5 million).	Q4 2018	Done on time.
H2020 - Industrial Leadership calls.	Timely launch of 8 calls (budget: EUR 992.2 million).	Q4 2018	Done on time.
FET-Flagships: the Graphene Flagship and the Human Brain Project.	Start of the third phase of the Flagships.	Q2 2018	Done on time.
Other important outputs			
Output	Indicator	Target date	Latest known results 2018
Preparatory actions for possible future FET Flagships in the next Framework Programme for R&I.	Selection of up to 6 preparatory actions (two stages).	Stage 1 selection by Q2 2018	Done, including 2nd stage selection by Q4 2018.
IPCEI supporting research and innovation in microelectronics	Approval of IPCEI by the Commission.		Approval on 18.12.2018 of the IPCEI proposed by France, Germany, Italy and the UK.