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European Commission

Annual activity report 2022

annexes

DG RESEARCH AND INNOVATION

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

I declare that in accordance with the Commission's communication on the internal control framework[1], I have reported my advice and recommendations on the overall state of internal control in the DG to the Director-General.

I hereby certify that the information provided in Section 2.1 of the present Annual Activity Report and in its annexes is, to the best of my knowledge, accurate and complete.

Date: 31/03/2023

[Signed in ARES]

Michalea Di Bucci

Director Research and Innovation.I (Innovative Administration)

I hereby certify that the information provided in Sections 1 and 2.2 of the present Annual Activity Report and in its annexes is, to the best of my knowledge, accurate and complete."

Date: 31/03/ 2023

[Signed in ARES]

Amaury Neve-de-Mevergnies

Head of Unit 01 (Coordination & Interinstitutional Relations)

[1] C(2017)2373 of 19.04.2017

ANNEX 2: Performance tables

IMPACT INDICATORS

General objective 1: A EUROPEAN GREEN DEAL

General objective 1: A EUROPEAN GREEN DEAL		
Impact indicator 1: Climate mainstreaming in the European Union budget **Explanation:** Proportion of climate related spending (mainstreaming) in the EU budget **Source of the data:** European Commission Draft Budget Reports		
Baseline (2014-2020, previous MFF)[2]	**Interim milestone** (2022)	**Target** (2021-2024)
21%	30%	30%
Latest known results (situation on 31/12/2022)		**Comments**
34,8%[3]		
Impact indicator 2: Greenhouse gas emissions **Explanation**: This indicator measures man-made emissions of the so-called 'Kyoto basket' of greenhouse gases, which are integrated into a single indicator expressed in units of CO_2 equivalents using each gas' global warming potential. It shows changes in percent of the emissions compared to 1990 levels **Source of the data**: European Environmental Agency/Eurostat online data code: EEA approximated GHG inventory for the year 2021/sdg_13_10		
Baseline (2018)	**Baseline** (2020)	**Baseline** **(2030)**
-23%	-20.0%	-55%
Latest known results (2021)		**Comments**
- 30%[4]		

General objective 2: A EUROPE FIT FOR THE DIGITAL AGE

General objective 2: A EUROPE FIT FOR THE DIGITAL AGE
Impact indicator 1: Innovative enterprises **Explanation:** Enterprises with more than 10 persons employed introducing product and/or business process innovations, including enterprises with ongoing or abandoned innovation activities **Source of the data**: : Eurostat (Eurostat online data code: INN_CIS11_BAS

[2] Change from yearly basis to duration basis

[3] estimate based on commitment appropriations

[4] Net GHG emissions (i.e. including the Land Use, Land Use Change and Forestry (LULUCF) sector)

Baseline (2018)	Interim milestone (2022)	Target (2024)
50.3% EU 27	Increase	Increase
Latest known results (2020)		**Comments**
52.7%		

Impact indicator 2: Gross domestic expenditure on research and development

Explanation: This indicator measures gross domestic expenditure on research and development (R&D) as a percentage of GDP - the R&D intensity. The Frascati Manual defines R&D as creative and systematic work undertaken in order to increase the stock of knowledge - including knowledge of humankind, culture and society - and to devise new applications of available knowledge
Source of the data: Eurostat (Eurostat online data code: sdg_09_10)

Baseline (2018)	Interim milestone (2020)	Target (2024)
2.19%	3%	Increase
Latest known results (2021)		**Comments**
2.26%		

General objective 3: AN ECONOMY THAT WORKS FOR PEOPLE

General objective 3: AN ECONOMY THAT WORKS FOR PEOPLE

Impact indicator 1: Human resources in science and technology

Explanation: This indicator shows human resources in science and technology as a share of the active population aged 25 to 64 in percent. Human resources in science and technology are people with a tertiary education in and / or employed in science and technology
Source of the data: Eurostat (Eurostat online data code: tsc00025), based on the EU Labour Force Survey

Baseline (2019)	Interim milestone (2022)	Target (2024)
46,9%	Increase	Increase
Latest known results (2021)		**Comments**
48.6%		

General objective 4: A STRONGER EUROPE IN THE WORLD

General objective 4: A STRONGER EUROPE IN THE WORLD

Impact indicator 1: The European Union's voice counts in the world according to its citizens

Explanation: This indicator shows the percentage of EU citizens that tend to agree that the EU's voice counts in the world
Source of the data: Eurobarometer (Standard Eurobarometer 95 (Printemps 2021))

Baseline (2019)	Interim milestone (2022)	Target (2024)

71% (EU 27)	Increase	Increase
Latest known results (situation on 2021)		**Comments**
72 % (EU27)		

General objective 5: PROMOTING OUR EUROPEAN WAY OF LIFE

General objective 5: PROMOTING OUR EUROPEAN WAY OF LIFE		
Impact indicator 1: Healthy life years at birth **Explanation**: Number of years in absolute value that a person is expected to continue to live in a healthy condition **Source of the data**: Eurostat (Eurostat data code: [hlth_hlye])		
Baseline (2019)	**Interim milestone** (2022)	**Target** (2024)
Males: 64.2 years *Females:* 65.1 years *Total:* 64.6 years	Increase Increase	Increase Increase
Latest known results (2020)		**Comments**
Males: 63.5 years *Females:* 64.5 years *Total:* 64.0 years		
Impact indicator 2: Avoidable mortality[5] **Explanation**: Avoidable mortality refers to two sets of indicators - preventable and treatable deaths. (1) Preventable mortality refers to causes of death that can mainly be avoided through effective public health and primary prevention interventions (i.e. before the onset of diseases or injuries to reduce incidence). (2) Treatable mortality are causes of death that can mainly be avoided through timely and effective health care and treatment (i.e. after the onset of diseases to reduce case-fatality) **Source of the data**: Eurostat (Eurostat data code: [hlth_cd_aprl]) **Methodology for calculating the indicator:** Specific metadata		
Baseline (2016)	**Interim milestone** (2022)	**Target** (2024)
Preventable deaths: 162.48 per 100 000 inhabitants *Treatable deaths*: 93.16 per 100 000 inhabitants	Decrease Decrease	Decrease Decrease
Latest known results (2019)		**Comments**
Preventable deaths: 153.95 per 100 000 inhabitants		

[5] This is a new indicator for the 2020 EU SDG monitoring report. It will be published in Eurobase with code sdg_03_42 once the 2020 edition of the EU SDG monitoring report is released

Treatable deaths: 89.2 per 100 000 inhabitants	

General objective 6: A NEW PUSH FOR EUROPEAN DEMOCRACY

General objective 6: A NEW PUSH FOR EUROPEAN DEMOCRACY		
Impact indicator 1: Citizens agreeing that their voice counts in the European Union **Explanation:** This indicator measures the percentage of Europeans who tend to agree with the statement 'their voice counts in the EU' **Source of the data: Standard** Eurobarometer		
Baseline (2019)	**Interim milestone** (2022)	**Target** (2024)
42% (EU 27)[6]	Increase	Increase
Latest known results (2022)		**Comments**
47 % (EU 27)		
Impact indicator 2: Gender employment gap **Explanation**: The indicator measures the difference between men and women's employment rate (aged 20 to 64 years) in percentage points **Source of data**: Eurostat (Eurostat online data code: sdg_05_30), based on the EU Labour Force Survey		
Baseline (2018)	**Interim milestone** (2020)	**Target** (2024)
11.3 percentage points	Decrease	Decrease
Latest known results (2021)		**Comments**
10.8 percentage points		

General objective 7: A MODERN, HIGH PERFORMING AND SUSTAINABLE EUROPEAN COMMISSION

General objective 7: A MODERN, HIGH PERFORMING AND SUSTAINABLE EUROPEAN COMMISSION		
Impact indicator 1: Staff engagement index in the Commission **Explanation:** Staff engagement measures staff's emotional, cognitive and physical connection to the job, organisation and the people within it **Source of the data**: European Commission		
Baseline (2018)	**Interim milestone** (2022)	**Target** (2024)
69%	Increase	Increase
Latest known results (2022)		**Comments**

[6] Correction retrospectivley: 48% before

72%	

RESULT INDICATORS

General comment:

DG R&I has prepared a list of 20 result indicators in 2019 which are included in the Strategic Plan 2020-2024. 18 out of these indicators come from the Common Research Datawarehouse (CORDA) and have been prepared taking into account a methodology with baselines and interim milestones.

Following the recommendations by the Internal Audit Service on the performance framework and to ensure the quality of data, a deeper analysis on the values data has been asked and done. After internal investigations, our services noticed that the methodology to extract the data needed to be revised in order to ensure accuracy and reliability. Therefore, and throughout the time, DG R&I noticed that the main methodology used until now to report the data from Horizon projects (continuous reporting) was not giving the most accurate, reliable and up-to-date values. The main reason behind the low quality of the continuous reporting data lies in the different ways the beneficiaries perform the data entry: some are reporting cumulative values (which was the intended behaviour), but some are deleting all entries at the beginning of each period. In addition, the business definition and methodology to de-duplicate publications and patents was not fully clear and effective, leading to some double-counting. A first analysis indicated that in general, this methodology tends to overestimate the global values but not homogenously among the different thematic areas.

For the reasons described above, DG R&I decided to move from the continuous reporting to the periodic reporting methodology. Moreover, the way to uniquely identify some of the data objects has been improved in order to guarantee a more accurate & reliable collection of the data from Horizon projects.

One of the consequences of this change is that the calculation of the values done at the time of the preparation of the Strategic Plan 2020-2024 (in 2019) need to be updated, including for the baselines & milestones.

DG R&I intends to update the baselines each time its value is affected by the new calculation. This approach and revised methodology of work will bring more accurate values and will also take into account the timelag between the year of reporting and the values declared by the beneficiaries.

DG R&I will develop by the end of 2023 a descripton of the latest version of the methodology used, considering the need for the revision of baselines and updating the definition per indicator. The changes will be fully integrated in the next AAR 2023.

Furthermore, the availability of values depends and relies strongly on the beneficiaries that will upload the values on our reporting platform.

General objective 1: A EUROPEAN GREEN DEAL

Specific objective 1.1: High-quality science, knowledge and innovative solutions support climate policies and help to preserve biodiversity, ecosystem and natural resources	Related to spending programme(s): FP7, Horizon 2020, Horizon Europe, EURATOM

Result indicator 1: Number of newly reported Intellectual Property Rights (IPRs) applications from Horizon projects addressing the European Green Deal per year

Explanation: Framework programme projects are classified according to specific EU policy priorities pursued. This indicator is informed through a portfolio analysis of IPRs applications generated by funded projects contributing to the European Green Deal, also beyond the project duration. The indicator takes into account the time-lag involved in producing and reporting on research and innovation results and hence includes also the results of the past Framework Programmes. This indicator relates to Horizon Europe Key Impact Pathway 4.

The baseline is calculated based on IPR applications reported in 2019, using FP7 and Horizon 2020 project classification. The portfolio of projects is built using the following thematic priority tags: "biotechnology", "climate action, environment, resource efficiency and raw materials", "food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy", "secure, clean and efficient energy" and "smart, green and integrated transport". Due to ongoing methodological developments related to automatic project classification baseline value might be revised.

Source of data: Horizon Dashboard, https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-dashboard

Baseline (2019)	**Interim milestone** (2022)	**Target** (2024)
256*	Higher than 2019 baseline	Higher than 2019 baseline
State of Play 2021 (results)		**Comments**
289**		***revised calculation of baseline due to the update on METHODOLOGY.** ****Only the value for 2021 is available, the value for 2022 will be provided at later stage. In the scope of indicators relating to IPRs, only patent applications have been considered. Only foreground patent applications have been considered in the scope of this analysis. Foreground patent applications are those applications with an application date equal or later than 1 year (365 days) after the project start.**
Indicator on simplification and burden reduction[7]		

[7] Applicable for law-making policy areas

Result indicator 2: Number of newly reported scientific publications from Horizon projects addressing the European Green Deal per year

Explanation: Framework programme projects are classified according to specific EU policy priorities pursued. This indicator is informed through a portfolio analysis of scientific publications generated by funded projects contributing to the European Green Deal, also beyond the project duration. The indicator takes into account the time-lag involved in producing and reporting on research and innovation results and hence includes also the results of the past Framework Programmes. This indicator relates to Horizon Europe Key Impact Pathway 4.

The 2019 baseline is calculated based on scientific publications reported in 2019, using FP7 and Horizon 2020 project classification. The portfolio of projects is built using the following thematic priority tags: "biotechnology", "climate action, environment, resource efficiency and raw materials", "food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy", "secure, clean and efficient energy" and "smart, green and integrated transport". Due to ongoing methodological developments related to automatic project classification baseline value might be revised.

Source of data: Horizon Dashboard, https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-dashboard

Baseline (2019)	**Interim milestone** (2022)	**Target** (2024)
6626*	Higher than 2019 baseline	Higher than 2019 baseline
State of Play 2022 (results)		**Comments**
13897		***revised calculation of baseline due to the update on methodology.**
Indicator on simplification and burden reduction[8]		

Specific objective 1.2: Mainstreaming of the public and private research and innovation investments for climate actions strengthens the European Green Deal's impact	Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM

Result indicator 3: Proportion of climate related spending (climate mainstreaming) in Horizon Europe spending

Explanation: The Framework programme legal base estimates devoting at least 35% of budget across the programme to climate action. The value for this indicator is based on the tagging of Horizon projects using the OECD RIO-Marker methodology (EC wide approach). It is computed cumulatively. Additional data from ad-hoc reporting might be used to complement data available in CORDA.

Source of data: CORDA Reporting, https://webgate.ec.testa.eu/RTD_CORDA_BI_REPORTING/BOE/BI

Baseline (2019)	**Interim milestone** (2022)	**Target** (2024)
29 %	35%	35%
State of Play 2022 (results)		**Comments**
34%		**At the end of 2022, the preliminary figures indicate**

[8] Applicable for law-making policy areas

	that Horizon Europe has contributed 34 % on climate change from the budgets 2021 and 2022 combined of the operational budget.

Specific objective 1.3: Co-creation of Horizon Europe and its missions and partnerships increases awareness of the key role of research and innovation for achieving climate neutrality	Related to spending programme(s): Horizon 2020, Horizon Europe

Result indicator 4: Share of Horizon Europe Green Deal related projects where citizens and end-users contribute to the co-creation of R&I content

Explanation: Horizon Europe aims at strengthening the uptake of research and innovation in society. To do so, funded projects are expected to involve citizens and end-users in co-creation of R&I projects, increasing their relevance, as well as the awareness and uptake of the project's outputs. This is a leading indicator capturing to what extent the projects and their results are co-created with citizens and end-users. Data related to the roles of partners (incl. citizen) in the projects will be requested for all Horizon Europe projects. This indicator relates to Horizon Europe Key Impact Pathway 6. Baseline values and targets might be refined by an ongoing study aiming at identifying the most appropriate data sources, methodologies for baseline computation and possible targets.

Source of data: Horizon Dashboard, https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-dashboard

Baseline (average 2014-2019)	**Interim milestone** (2022)	**Target** (2024)
11% (value for the whole FP)	Higher than value	Higher than value
State of Play 2022 (results)		**Comments**
12,36%		

Result indicator 5: Progress towards R&I missions' targets related to the European Green Deal

Explanation: Horizon Europe incorporates research and innovation missions to increase the effectiveness and impact of funding by pursuing clearly defined targets. Mission Boards are advising Commission on defining the targets and milestones of each mission, including the ones related to the European Green Deal.

Source of data: to be indicated on the later stage when the indicator will be defined

Baseline (2020)	**Interim milestone** (2022)	**Target** (2024)
0	Higher than 2020 baseline	Higher than 2020 baseline
State of Play 2020 (results)		**Comments**
No indicator (and methodology) defined for the data yet*		***Missions have started in late 2021 and values are not yet available.**
Indicator on simplification and burden reduction		

General objective 2: A EUROPE FIT FOR THE DIGITAL AGE

The three following specific objectives with relevant results indicators cover the broad spectrum of R&I activities contributing to the 'Europe fit for the Digital Age' general objective:

Specific objective 2.1: High-quality science, knowledge and innovative solutions facilitate a digital transition in Europe, including a new European approach to Artificial Intelligence	Related to spending programme(s): FP7, Horizon 2020 and Horizon Europe

Result indicator 6: Number of newly reported Intellectual Property Rights (IPRs) applications from Horizon projects addressing the digital transition in Europe per year

Explanation: Framework programme projects are classified according to specific EU policy priorities pursued. This indicator is informed through a portfolio analysis of IPR applications generated by funded projects contributing to the EU Digital priority, also beyond the project duration. The indicator takes into account the time-lag involved in producing and reporting on research and innovation results and hence includes also the results of the past Framework Programmes. This indicator relates to Horizon Europe Key Impact Pathway 4.

The baseline is calculated based on IRP applications reported in 2019, using FP7 and Horizon 2020 project classification. The portfolio of projects is built using the following thematic priority tags: ""ICT", "INTNET" and "SPACE". Due to ongoing methodological developments related to automatic project classification baseline value might be revised.

Source of data: Horizon Dashboard, https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-dashboard

Baseline (2019)	**Interim milestone** (2022)	**Target** (2024)
223*	Higher than 2019 value	Higher than 2019 value
State of Play 2022 (results)		**Comments**
248		***revised calculation of baseline due to the update on methodology**

Result indicator 7: Number of newly reported scientific publications from Horizon projects addressing the digital transition per year

Explanation: Framework programme projects are classified according to specific EU policy priorities pursued. This indicator is informed through a portfolio analysis of scientific publications generated by funded projects contributing to the EU Digital priority, also beyond the project duration. The indicator takes into account the time-lag involved in producing and reporting on research and innovation results and hence includes also the results of the past Framework Programmes. This indicator relates to Horizon Europe Key Impact Pathway 4.

The baseline is calculated based on scientific publications reported in 2019, using FP7 and Horizon 2020 project classification. The portfolio of projects is built using the following thematic priority tags: ""ICT", "INTNET" and "SPACE". Due to ongoing methodological developments related to automatic project classification baseline value might be revised.

Source of data: Horizon Dashboard, https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-dashboard

Baseline (2019)	**Interim milestone** (2022)	**Target** (2024)
5478*	Higher than 2019 baseline	Higher than 2019 baseline

State of Play 2022 (results)		Comments
8412		***revised calculation of baseline due to the update on methodology**
Indicator on simplification and burden reduction[9]		

Result indicator 8: Amount of public and private investment mobilised with the initial Framework Programme investment (leverage ratio) towards the GDP for R&D 3% target

Explanation: Horizon is leveraging investments for research and innovation in Europe. This indicator captures the other investments mobilised with the initial investment from the projects' partners to support project execution. This indicator relates to Horizon Europe Key Impact Pathway 9.
Due to ongoing methodological developments related to leverage, the baseline value was revised.

Source of data: Horizon Dashboard, https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-dashboard

Baseline (2019)	**Interim milestone** (2022)	**Target** (2024)
26%*	Higher than 2019 baseline	Higher than 2019 baseline

State of Play 2022 (results)		Comments
25%		***revised calculation of baseline due to the update on methodology**
Indicator on simplification and burden reduction[10]		*new baseline for 2019 recalculated based on the recent data.

Specific objective 2.2: The revitalised European Research Area sets directions for societal, economic and ecological transitions in Europe and contributes to spreading excellence, closing research and innovation gap and working out a common global response to emerging challenges	Related to spending programme(s): Horizon 2020, Horizon Europe

Result indicator 9: Number of researchers accessing European research infrastructures, including e-infrastructures, supported through the Framework Programme

Explanation: The European approach to research infrastructures has made remarkable progress in recent years with the implementation of the European Strategy Forum on Research Infrastructures (ESFRI) roadmap, integrating and opening national research facilities and developing e-infrastructures underpinning a digital European Research Area. The networks of research infrastructures across Europe strengthen its human capital base by providing world-class training for a new generation of researchers and engineers and promoting interdisciplinary collaboration. This indicator captures the extent to which researchers access and use these infrastructures. The value computed is cumulative.

Source of data: Internal Horizon Dashboard, http://intragate.ec.europa.eu/rtd-apps/webcorda/dashboard/kpi.cfm

[9] Applicable for law-making policy areas

[10] Applicable for law-making policy areas

Baseline (August 2020)	Interim milestone (2022)	Target (2024)
114319 (of which 102 949 having access through e-Infrastructures)	Higher than 2020 baseline	Higher than 2020 baseline
State of Play 2022 (results)		**Comments**
184434		**Researchers accessing physical R&I infrastructures and e-Infrastructures**

Result indicator 10: Share of researchers from widening countries researchers' population involved in the Framework Programme per year

Explanation: ERA's aims to fully exploiting the potential of Europe's talent pool. The differences in research and innovation performance among Member States are determined by a multitude of factors beyond the influence of the Framework Programme, such as the national priorities, the level of private and public investments, the availability and quality of infrastructures, human capital and skills, etc. requiring tailored policy mixes in Member States in line with each country's specific challenges. Widening participation in the EU Framework Programme is a shared responsibility to be addressed nationally and at EU level in a complementary and synergetic way whilst respecting the principles and role of each level and the measures used. This indicator captures both elements, by putting in perspective the participation to the Framework Programmes with the national efforts to increase the researchers' population at the national level. The indicator is based on self-declaration by the beneficiary organisations about their workforce composition, disaggregated by researcher/non-researcher personnel. The baseline is a proxy using data covering EU R&I lower performing countries because the data needed to normalise is only available for these countries.

Source of data: Internal Horizon Dashboard, http://intragate.ec.europa.eu/rtd-apps/webcorda/dashboard/results.cfm and EUROSTAT https://ec.europa.eu/eurostat/statistics-explained/index.php/R_%26_D_personnel

Baseline (2017)	Interim milestone (2022)	Target (2024)
6.38%*	Higher than 2017 baseline	Higher than 2017 baseline
State of Play 2020 (results)		**Comments**
6.36%**		***revised calculation of baseline due to the update on methodology.** ****Value for 2020 only available. The value for 2022 is not yet available In the scope of indicators relating to IPRs, only patent applications have been considered. Only foreground patent applications have been considered in the scope of this analysis. Foreground patent applications are those applications with an application date equal or later than 1 year (365 days) after the project start.**

Indicator on simplification and burden reduction[11]		

Specific objective 2.3: Research and innovation actions and the European Innovation Council in particular support development and scaling-up of SMEs with breakthrough and disruptive technologies		Related to spending programme(s): Horizon 2020, Horizon Europe
Result indicator 11: **Share of funds allocated to SMEs in Horizon projects per year*** **Explanation:** Horizon projects systematically flag support given to SMEs. This indicator is informed through a portfolio analysis of scientific and innovation funded projects, signed in a year. It measures the share of the total EU contribution that is allocated to SMEs. **Source of data**[12]**:** Horizon Dashboard, https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-dashboard		
Baseline (2019)	**Interim milestone** (2022)	**Target** (2024)
16.11%*	Higher than 2019 value	Higher than 2019 value
State of Play 2022 (results)		**Comments**
16.67%		***revised calculation of baseline due to the update on methodology**
Indicator on simplification and burden reduction[13]		

General objective 3: AN ECONOMY THAT WORKS FOR PEOPLE

The following specific objective with relevant result indicator covers the broad spectrum of R&I activities contributing to the 'Economy that works for the people' objective.

Specific objective 3.1: Research and innovation actions, increased R&I investments and the R&I component of the European Semester boost economic growth and jobs creation	Related to spending programme(s): Horizon 2020, Horizon Europe
Result indicator 12: **FTE jobs supported in entities involved in Horizon projects per year** **Explanation:** Horizon Programmes are expected to generate more and better jobs, initially in the projects, and then through the exploitation of the outputs and their diffusion in the economy. This indicator captures the evolution of the number of full-time equivalents jobs involved in Horizon projects. This indicator relates to Horizon Europe Key Impact Pathway 8. It is based on the aggregated sum (divided by 12) of the	

[11] Applicable for law-making policy areas

[12] With respect to data quality, the ECA is undertaking an audit on the reliability of beneficiaries. In the context of that audit, the ECA is assessing the reliability of the statistic on SME participation in the H2020 programme. At the time of finalising this report, the conclusions of the audit are not yet available.

[13] Applicable for law-making policy areas

person/month effort declared by the beneficiaries as spent in the already implemented work packages (from continuous reporting). The methodology for the indicator might be updated in the future to reflect the approach taken in the Horizon Europe Key Impact Framework.

Source of data: CORDA Reporting, https://webgate.ec.testa.eu/RTD_CORDA_BI_REPORTING/BOE/BI

Baseline (2019)	**Interim milestone** (2022)	**Target** (2024)
271409*	Higher than baseline	Higher than baseline
State of Play 2022 (results)		**Comments**
479447**		***revised calculation of baseline due to the update on methodology ****cumulative figure**
Indicator on simplification and burden reduction[14]		

General objective 4: A STRONGER EUROPE IN THE WORLD

The following specific objective with relevant result indicator cover the broad spectrum of R&I activities contributing to the 'Stronger Europe in the world' objective.

Specific objective 4.1: Regional research and innovation strategies and broader association policy contribute to promoting common European R&I values and creating a global Research and Innovation Space	Related to spending programme(s): Horizon 2020, Horizon Europe

Result indicator 13: **Share of scientific international co-publications funded by the Framework Programme**

Explanation: This indicator provides an estimate of the extent of international scientific cooperation in projects funded by the Framework Programme. It focuses on international co-publications, i.e. scientific publications that include both authors whose affiliation is placed in an EU country and authors whose affiliation is based in a non-EU country. The baseline is provided for 2018.

In order to obtain a more complete picture of the extent of international cooperation, this indicator will be contextualised with information related to the overall participation of organisations from third countries in the projects funded by the Framework Programme.

Source of data: CORDA Reporting, https://webgate.ec.testa.eu/RTD_CORDA_BI_REPORTING/BOE/BI and Scopus https://www.scopus.com/search/form.uri?display=basic

Baseline (2018)	**Interim milestone** (2022)	**Target** (2024)
38.33%*	Higher than 2018 baseline	Higher than 2018 baseline

[14] Applicable for law-making policy areas

State of Play 2022 (results)	Comments
33.11%	***revised calculation of baseline due to the update on methodology**

General objective 5: PROMOTING OUR EUROPEAN WAY OF LIFE

The following specific objectives with relevant result indicators cover the broad spectrum of the R&I activities contributing to the 'Promoting our European way of life':

Specific objective 5.1: Research and Innovation develop and deploy solutions, technologies and innovations to tackle emerging threats and improve crisis preparedness	Related to spending programme(s): FP7, Horizon 2020, Horizon Europe

Result indicator 14: Number of newly reported Intellectual Property Rights (IPR) applications from Horizon projects tackling emerging threats and improving EU crisis preparedness and resilience per year

Explanation: Framework programme projects are classified according to specific EU policy priorities pursued. This indicator is informed through a portfolio analysis of IPR applications generated by funded projects contributing to tackling emerging threats and improving EU crisis preparedness and resilience, also beyond the project duration. The indicator takes into account the time-lag involved in producing and reporting on research and innovation results and hence includes also the results of the past Framework Programmes. This indicator relates to Horizon Europe Key Impact Pathway 4.

Source of data: Internal Horizon Dashboard, http://intragate.ec.europa.eu/rtd-apps/webcorda/dashboard/ and RESPIR http://intragate.ec.europa.eu/rtd-apps/webcorda/index.cfm?page=reportsFP7projectReporting

Baseline (2019)	**Interim milestone** (2022)	**Target** (2024)
9*	Higher than baseline	Higher than baseline
State of Play 2021 (results)		**Comments**
11**		***revised calculation of baseline due to the update on methodology** ****Value for 2021 only available. The value for 2022 is not yet available. In the scope of indicators relating to IPRs, only patents applications have been considered. Only foreground patent applications have been considered in the scope of this analysis. Foreground patent applications are those applications with an application date equal or later than 1 year (365 days) after the project start.**

Result indicator 15: Number of newly reported scientific publications from Horizon projects addressing the emerging threats and improving EU crisis preparedness and resilience per year

Explanation: Framework programme projects are classified according to specific EU policy priorities pursued. This indicator is informed through a portfolio analysis of scientific publications generated by funded projects contributing to tackling emerging threats and improving EU crisis preparedness and resilience, also beyond the project duration. The indicator takes into account the time-lag involved in producing and reporting on research and innovation results and hence includes also the results of the past Framework Programmes. This indicator relates to Horizon Europe Key Impact Pathway 4. The baseline is calculated based on publications reported in 2019, using FP7 and Horizon 2020 project classification. The portfolio of projects is built using the following thematic priority tag: "SECURITY".

Source of data: Horizon Dashboard, https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-dashboard

Baseline (2019)	**Interim milestone** (2022)	**Target** (2024)
492*	Higher than baseline	Higher than baseline
State of Play 2022 (results)		**Comments**
922		***revised calculation of baseline due to the update on methodology**
Indicator on simplification and burden reduction[15]		

Specific objective 5.2: Research and innovation support the European health initiatives including the European plan to fight cancer	Related to spending programme(s): FP7, Horizon 2020, Horizon Europe

Result indicator 16: Number of newly reported scientific publications from Horizon projects addressing health per year

Explanation: Framework programme projects are classified according to specific EU policy priorities pursued. This indicator is informed through a portfolio analysis of scientific publications generated by funded projects contributing to Health, also beyond the project duration. The indicator takes into account the time-lag involved in producing and reporting on research and innovation results and hence includes also the results of the past Framework Programmes. This indicator relates to Horizon Europe Key Impact Pathway 4.

The baseline is calculated based on publications reported in 2019, using FP7 and Horizon 2020 project classification. The portfolio of projects is built using the thematic priority tag "HEALTH". Due to ongoing methodological developments related to automatic project classification baseline value might be revised.

Source of data: CORDA, http://intragate.ec.europa.eu/rtd-apps/webcorda/dashboard/

Baseline (2019)	**Interim milestone** (2022)	**Target** (2024)
5377*	Higher than baseline	Higher than baseline

[15] Applicable for law-making policy areas

State of Play 2022 (results)		Comments
10003		***revised calculation of baseline due to the update on methodology**
Indicator on simplification and burden reduction[16]		

General objective 6: A NEW PUSH FOR EUROPEAN DEMOCRACY

The following specific objectives with relevant result cover the broad spectrum of R&I activities contributing to the 'New push for European democracy' objective:

Specific objective 6.1: European research and innovation support citizens' involvement, social inclusion and equalities in Europe, including through communication of the European research and innovation added value	Related to spending programme(s): Horizon 2020, Horizon Europe

Result indicator 17: Number of participants to the policy conference of the R&I Days

Explanation: European Research and Innovation Days is the European Commission's annual flagship event bringing together stakeholders, citizens and policy makers to debate and shape the future R&I landscape. Its goal is to achieve an increasing quantity and quality of citizens' engagement, through intensive policy co-design activities, as well as to increase citizens' awareness of R&I success stories, the impact of research and innovation achievements on citizens' lives and the overall added value of the European R&I policy. The result indicator reflects the number of participants to the policy session of the R&I Days. It will be complemented by monitoring the quantity of policy co-design sessions and bottom-up discussions with citizens, as well as the event's reach and impact on both traditional and social media.

Source of data: R&I days Final report (Communication unit)

Baseline (2019)	**Interim milestone** (2022)	**Target** (2024)
3874 participants to the policy conference	7 000	8 000

State of Play 2022 (results)	Comments
9378	**Due to the Covid, the 2022 edition of the R&I days went fully online**

Result indicator 18: Number and share of female researchers in total number of researchers participating to Horizon projects per year*

Explanation: The promotion of gender equality is a strong commitment of Horizon Programmes. Balanced participation between women and men in research activities at different stages of the cycle is encouraged. This indicator informs on the number and share of female researchers in total number of researchers participating to Horizon projects declared in the project reports for the corresponding year. The progress on increasing a number female researchers in R&I Framework programmes will be supported among others by monitoring the number of gender plans provided by beneficiaries and the number of female coordinators of the projects.

[16] Applicable for law-making policy areas

Source of data: Internal Horizon Dashboard, http://intragate.ec.europa.eu/rtd-apps/webcorda/dashboard/results.cfm		
Baseline (2019)	**Interim milestone** (2022)	**Target** (2024)
35.78%*	40%	45%
State of Play 2021* (results)		**Comments**
35.71%		***revised calculation of baseline due to the update on methodology**
Indicator on simplification and burden reduction[17]		

General objective 7: A MODERN, HIGH PERFORMING AND SUSTAINABLE EUROPEAN COMMISSION

Specific objective 7.1: The Common Implementation Centre and Common Policy and Programming Centre provide user-friendly services and tools to the European Commission for effective and efficient planning, programming and implementation of the Research and Innovation Framework Programme and other EU programmes	Related to spending programme(s): Horizon 2020, Horizon Europe

Result indicator 19: **Level of overall satisfaction with the services and tools provided by the CIC.**

Explanation: Customer survey launched via EU Survey to staff in the Commission and Executive Agencies involved in programmes within the corporate mandate of the CIC. The survey will consist of closed questions, including one summary question, and space for open comments. The indicator will be based on the percentage of respondents 'agreeing' or 'tending to agree' with the summary statement about the overall delivery of the CIC in terms of harmonisation, simplification, and efficiency. A survey was first conducted in 2017, with a second edition scheduled for the end of 2020. .

Source of data: Customer survey launched via EU Survey to staff in the Commission and Executive Agencies

Baseline The percentage of respondents with a positive view of CIC (CSC) services in a survey (2017)	**Interim milestone** (2022)	**Target** (2024)
56%	Higher than the 2017 baseline	66%
State of Play 2022 (results)		**Comments**
No survey done in 2022		**The draft of the survey was prepared in Q1 2022 but the launch was postponed since this coincided with the launch of the Client Centricity Programme and its first phase: extensive survey, interview with our stakeholders. In addition the IT DEPT has also**

[17] Applicable for law-making policy areas

	launched its regular survey and it was considered unnecessary to multiply the surveys that the CIC launches. The decision was taken by the Director to embed the stakeholder survey within the wider Client centricity project, of which one upcoming component will be the programme owners' survey: our approach to launching surveys is being refined and will be launched.

Result indicator 20: Timely adoption of Horizon Europe strategic plan and work programmes

Explanation: This indicator will measure the timely adoption of the Horizon Europe strategic plan, work programmes and their amendments, allowing an effective and efficient planning and programming of the Horizon Europe programme.

Source of data: Horizon Europe legal base.

Baseline (2019)	**Interim milestone** (2022)	**Target** (2024)
Not applicable	1st Strategic Plan and first work programme adopted.	2nd Strategic Plan and first work programme adopted.
State of Play 2022 (results)		**Comments**
Adoption done on time.		
Indicator on simplification and burden reduction[18]		

[18] Applicable for law-making policy areas

OUTPUT INDICATORS

Part 1. Delivering on the Commission's priorities: main output for the year

General objective 1: A EUROPEAN GREEN DEAL

General objective 1: A EUROPEAN GREEN DEAL	
Specific objective 1.1: High-quality science, knowledge and innovative solutions support climate policies and help to preserve biodiversity, ecosystem and natural resources	*Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM*
Main output in 2022:	

New policy initiatives

Output	Indicator	Target	Results
Hydrogen Strategy: SET-Plan Communication	Adoption of the Communication	Q4	Postponed to Q2 2023
R&I chapter in the Communication on solar energy (DG ENER is in the lead)	Inclusion of the chapter in the Communication Publication of the R&I factsheet	Q1 Q1	Achieved Achieved
Bioeconomy Progress Report	Adoption of the report, tracking the successful adoption of the Bioeconomy Progress Report	March 2022	Achieved
Plastic Pirates Go Europe !	Student and citizen plastic sampling campaign in rivers and seas launched in at least 10 Member States in 2022	Q4	Achieved

External communication actions

Output	Indicator	Target	Results
New European Bauhaus Festival	Nr of participants (physical/digital)	50.000	Direct reach – 65.242 Total reach – 172.032
Bioeconomy Conference	Number of participants Social media impressions	500 1000	Day 1: 1,073 | Day 2: 831 78,000
Strategic Research and Innovation Plan for Chemicals and Materials (SRIP) SWD	Brochure number of page views Website total number of views	200 1000	1,832 5,576

Other important outputs			
Output	**Indicator**	**Target**	**Results**
Safe-and-Sustainable-by-design (SSbD) criteria	SWD on SSbD criteria	Q4	Achieved
Strategic Research and Innovation Plan (SRIP) for Chemicals in the Green Deal Era	SWD on SRIP	Q4	Achieved
Hydrogen strategy: Implementation of the ERA Pilot on Hydrogen: Hydrogen Observatory through Clean Hydrogen JU	Hydrogen Observatory set-up and running	Q4	Delayed by the Joint Undertaking. Tendering ongoing, planned to be signed in Q2 2023
Hydrogen Strategy: CSA on renewable hydrogen in Africa to reinforce the long term AU-EU HLPD CCSE Partnership (through Clean Hydrogen JU)	Selected and awarded CSA projects	Q4	Delayed. Grant agreement was signed last December 2022, project to start in February 2023 to allow for the African partners to arrange their visas timely and be present at the kick-off event in Brussels.
Mission Innovation: Mission on Clean Hydrogen	Publication of the detailed implementation plan	Q1	Delayed to Q3. The Mission delivered its action plan in Q3 at the combined MI/CEM Ministerial in Pittsburgh, as this event was identified as the best opportunity to publish the document with high visibility. Delay also due to negotiations with 17 members counties on the final document
Mission Innovation: four 'second-wave' Missions (Biorefineries, Carbon Dioxide Removal, Cities, and Industrial Decarbonization) (Mission Innovation)	Commission input in the 'second-wave' Missions	Q1	Achieved
Ocean and Water Mission contributing to the implementation of EU Biodiversity strategy and EU Zero Pollution Plan	Launch of the amendment to the 2022 HE Work programme	Q2	Achieved

Output	Indicator	Target	Results
Mission on Adaptation to Climate Change: establishment of key structures, including setting-up of the Mission Implementation Platform	The Implementation Platform is operational	Q4	Delayed to Q1 2023. The finalisation of the terms of reference for the implementation platform took longer than originally anticipated, due to the complexity of the contract. In the end, the Implementation platform has been successfully selected and kicked off its activities on the 1st of January 2023.
'Soil' Mission: Engagement sessions at regional level on soil health living labs	Launch of support activities via Soil Mission Work Programme 2022	Q4	Achieved
Development of a Nature-based solutions map for Europe	Follow up of feasibility study for developing a Nature-based solutions map for European Commission	Q4	Feasibility study was realized, but no policy decision on the realization of the map.
Chemicals Strategy for Sustainability: launch of the European partnership on chemical risk assessment with Member States	The PARC partnership grant agreement is signed and the partnership launched.	Q2	Achieved

Specific objective 1.2: Mainstreaming of the public and private research and innovation investments for climate actions strengthens the European Green Deal's impact	*Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM*
Main output in 2022:	

Other important outputs

Output	Indicator	Target	Results
Staff Working Document Common Industrial Technologies Roadmaps	Delivery of two Roadmaps (one on low-carbon, one on circular)	Q2 - Q4	Achieved
Manifesto on Advanced Materials	Workshop with representative materials' community to promote implementation of the manifesto,	Q1	Achieved

Specific objective 1.3: Co-creation of Horizon Europe and its missions and partnerships increases awareness of the key role of research and innovation for achieving climate neutrality	*Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM*
Main output in 2022:	

New policy initiatives

Output	Indicator	Target	Results
Climate-Neutral and Smart Cities Mission: Selection of cities to participate in the Mission	High quality applications from cities eligible to participate in the Mission	100 by Q4	Achieved 377 applications. The participating 112 were announced (100 EU and 12 from countries associated to Horizon Europe).
Institutionalised partnerships (Clean Aviation, Clean Hydrogen, Europe's Rail, Circular Bio-Based Europe)	Publication of Annual Work Programme 2022	Q1	Achieved
Co-programmed and co-funded partnerships	High quality proposals selected as a response to the relevant calls published in the WP 2021-2022	Q4	Achieved
European Euratom Partnership PIANOFORTE	Launch of the partnership	Q3	Achieved

External communication actions

Output	Indicator	Target	Results
Communication campaign on the EU Missions	Target audience reached	500.000	58 million
Communication campaign on the EU Partnerships	Target audience reached	250.000	311.405
Promotional video of Euratom Programme	Nr of views	5.000	5.900
Low Carbon & Industrial strategy: two ERA Common Industrial Technology roadmaps in the areas of low carbon technologies for energy-intensive industries and circular industrial technologies	Number of online views	1.000	1.971

Other important outputs			
Output	**Indicator**	**Target**	**Results**
Partnership Work Programme Setting up of a steering group to provide advice and input to the Euramet	Increase of external participation 15 independent experts, including Chairs appointed	from 30 to 40% in calls; Q3 - Launch of Steering group	More than 50% for Processes4Planet partnership Achieved

General objective 2: A EUROPE FIT FOR THE DIGITAL AGE

General objective 2: A EUROPE FIT FOR THE DIGITAL AGE	
Specific objective 2.1: High-quality science, knowledge and innovative solutions facilitate a digital transition in Europe, including a new European approach to Artificial Intelligence	*Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM*
Main output in 2022:	

New policy initiatives			
Output	**Indicator**	**Target**	**Results**
Administrative Agreement with JRC on GEOSS	Launch of Activities under new administrative Agreement with JRC on "Leveraging European data-sharing and exploitation practices within GEOSS (Global Earth Observation System of Systems)"	2022	Done.Identification and prioritisation of relevant use cases to be included in the Knowledge Centre on Earth Observation. EuroGEOSS virtual ecosystem conceptualisation and prototyping. Setting-up of an observatory of technical enablers for data sharing. Contribution to GEO/GEOSS and EuroGEO/EuroGEOSS governance

External communication actions			
Output	**Indicator**	**Target**	**Results**
EURAXESS biennial conference + side event (March 2022)	Participants	300	321 total participants (139 remote, 182 on-site; hybrid event)
Infographic on ERA Hubs for Circularity	Target audiences reached	2,000	Achieved in total. There was 296 views of the infographic on the EU bookshop but over 15 000 reach on social media.
The second Transition Performance Index	Nr of website page views Social media (paid) impressions	2,000 10,000	5 852 13 074

Other important outputs			
Output	**Indicator**	**Target**	**Results**
Increased outreach of EURAXESS Expansion of EURAXESS network	- average number of monthly page views - number of registered research institutions, universities and funding organisations - number of registered users - number of job offers - number of countries in the network	- 2.5 million in average - 20.000 research institutions, universities and funding organisations - 165.000 users - 41.000 job offers - 43 countries	- 1.840.720,6 average views per month, with 22,088,648 page views in total in 2022 - 43.557 registered research institutions, universities and funding organisations (growth of 120% from 2021) - 367.663 registered users - 80.048 published job offers (100% growth from 2021) - 43 countries
Characterisation of research data practices across the ERA	Results of study to characterise the European research data landscape in Europe	Q3	Done The study has been completed during Q3 2022 and the final report was published in November 2022
Launch of the procurement of a trusted data repository for Horizon Europe beneficiaries	Procurement of a trusted data repository for Horizon Europe beneficiaries launched	Q2	Done, in Q4 No procurement but a grant to identified beneficiary (CERN) has been launched in Q4 2022 with the signature of the grant targeted in Q1 2023
Open science policy framework and monitor	Testing of Open Science policy framework and monitoring platform	Q4	Yes done on time . • The EOSC Observatory and its dashboard was launched in November 2022 . • A first version of the EOSC Catalogue of Best Practices' has been presented including 70 examples on MS/AC efforts related to EOSC implementation activities

Output	Indicator	Target	Results
Support the establishment of a European cultural heritage collaborative space	A cluster of R&I actions comprising at least 6 topics with a budget of at least 90 million € for R&I actions that will support the establishment of innovative services, algorithms and applications for the cultural heritage collaborative cloud platform.	Published in Horizon Europe work programme 2023-2024 – Q4	Partly on track. The decision was taken to include only two topics of 2023 in the work programme, with a foreseen budget of 35M€. The remaining 2024 topics (foreseen budget 49M€) should be added at a later stage through an amendment procedure. In addition, an open stakeholder survey of European cultural heritage professionals related to the digital transition and the European Collaborative Cloud for Cultural Heritage was carried out (Q4), gathering well over 1000 responses. A report detailing the main conclusions was published in December.
Missions taking into account opportunities for the use of Artificial Intelligence (AI)	Appropriate take-up of AI in the 2021-2 Work Programmes of the Missions Appropriate contribution to the revision of the Work Programme 2021-2 with regard to AI Contribution to the R&I Investment Agenda for AI for the Work Programme 2023-24	Q1 Q2 Q4	Completed. No revision needed Completed. Completed

Specific objective 2.2: The revitalised European Research Area sets directions for societal, economic and ecological transitions in Europe and contributes to spreading excellence, closing research and innovation gap and working out a common global response to emerging challenges	*Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM*

Main output in 2022:

New policy initiatives

Output	Indicator	Target	Results
Operational governance structure for technology infrastructures	1st meeting of the governance group Political endorsement of the governance structure during CZ presidency	Q4 Q4	No, but as a first step to set up a governance structure for TIs, agreement was reached with the ERA Forum to establish a TI Advisory Board as part of Action 12. First meetings of the Advisory Boards will take place in Q1-Q2 2023. A lunch debate on TIs was also organised at COMPET Council meeting during the CZ Presidency, acknowledging the establishment of the Advisory Board.
Set-up the permanent ERA Forum, as well as its eventual sub-groups, through a Commission decision, based on the elements provided in the Conclusions on the new ERA Governance, adopted by the Council on 26 November 2021, such as the co-chair between Commission and Member States, the systematic involvement of stakeholders and the Forum's role as the main implementation body for actions in the ERA policy agenda.	Creation of the ERA Forum	Q1	The ERA Forum was successfully created, with the characteristics requested by the Council. Twelve meetings took place during the year 2022.

Output	Indicator	Target	Results
Put in place the monitoring and reporting mechanism for the new European Research Area, based on the Council Recommendation on a Pact for R&I, as well as the Council conclusions on the new ERA Governance. This will include three main elements: the online ERA policy platform; the Scoreboard and Dashboard; and producing reports on the performance of Member States.	Creation of the ERA policy platform and the Scoreboard/Dashboard	Q2	Done The framework of the ERA monitoring mechanism was proposed to the Council by the Commission on 10 June 2022. The necessary internal procedures and contractual arrangements have been put into place in order to deliver the different elements throughout 2023: the policy platform, the scoreboard, the dashboard, the 18-month report and the national reports.
Co-creation of the WIDERA and Research Infrastructures parts of the Horizon Europe work programme 2023-24	Adoption of the related part of the Horizon Europe Work Programme	Q3	The WIDERA and Research Infrastructures work programme was successfully co-created and adopted.
Legislative initiative for "A European framework to attract and retain R&I talents in Europe" ERA4You policy initiative available, following Knowledge Ecosystems study, and related measures introduced in WIDERA 2022 and 2023-2024	Proposal for a legislative initiative ERA4You initiative proposed ERA4You actions introduced in WIDERA	Q4 Q1 Q3	Awaiting political guidance A new ERA Talent action introduced in WIDERA 2022 and 2023-2024, as part of ERA4You, first ERA Talents actions selected from the 2022 call. Following the call for expressions of interest to MS for MLE on intersectoral mobility, several MS decided to take part. The MLE on intersectoral mobility was merged with MLE on knowledge valorisation for practical reasons, kick-off is planned in March 2023. YES – Q1: proposed as part of Action 4 and introduced in the WIDERA WP 2023-24 in Q3 when the WP was prepared.

Initiatives linked to regulatory simplification and burden reduction			
Output	**Indicator**	**Target**	**Results**
Baseline for ensuring an EU copyright and data legislative and regulatory framework fit for research	Studies commissioned for identifying barriers to access and reuse of publicly funded scientific outputs and including recommendations on possible legislative and non-legislative measures	Q1	Done Studies running throughout first half of the year, outputs discussed with ERA Forum representatives and experts at workshops in June, and study reports finalised and published in August

External communication actions			
Output	**Indicator**	**Target**	**Results**
Promotion of the launch of ERA4you policy initiative	Target audience reached	300.000	The focus shifted to Member States (MS) actors. Reporting to stakeholders and MS on the Talent circulation analysis and intersectoral mobility analysis were published in July, circulated to the ERA Forum, and disseminated through ERA Talents information meetings – **target audience likely not reached, though robust, comprehensive figures are not available.**
European Union Contest for Young Scientist (EUCYS) event	Video (target audience reached) Press outreach – number of articles	10.000 25	EUCYS 2022 highlight video: 2300 EUCYS 2022 video: 2500 EU TalentOn 2022 highlight video: 2500 EU TalentOn 2022 video: 2400 Post-event highlights video: 627 views on YouTube (status on 20.01) Press outreach: 40 articles
EuroScience Open Forum (ESOF) 2022 - Leiden	Nr of participants	4.500	The event took place on 13-16 July 2022 in Leiden European Capital of Science 2022. • Grand total: **3,138** delegates • 2,006 registered delegates **onsite** 1,132 delegates attending **online**
Promotion of ERA related actions under the PACT and ERA policy agenda	Target audience reached	500.000	Target reached

Output	Indicator	Target	Results
Launch of the New European innovation agenda communication[19]	Social media impressions Media relations online views Website online views Factsheet downloads Video online views	40 000 10 000 2 000 800 8 000	88 000 impressions 16 664 online views 3 609 online views 1 297 13 000
French presidency 'European Strategy Forum on Research Infrastructures (ESFRI) Conference' (March, Paris)	Number of participants	350	Achieved. The conference took place in Paris, at the Institut de France, on March 25, 2022 with around 300 participants in person (plus several hundred online, no final data communicated by organiser) to celebrate the achievements of ESFRI and the importance of European policies for the development of high-level scientific research infrastructures addressing current challenges.

Other important outputs

Output	Indicator	Target	Results
Action plan for raising awareness on the European Competence Framework for Researchers and for the development of skilling actions for researchers Design and technical specifications of ERA Hub concept by launching a pilot	Proposal for an action plan Co-design of the details of the initiative an definition of technical specifications of the ERA Hubs	Q3 Q4	Yes Q3 Development of website for launch in early 2023 in connection with European Year of Skills. Preparation of communication activities for Q1 2023, including official launch event and ERA Talk. Design of initiatives to support uptake and use, including via expert support to universities. New topic to strengthen researchers' skills proposed in WIDERA 2023-24. The concept of ERA Hubs was updated in Q4 following consultations with stakeholders and presented to Member States in the ERA Forum. A call for ERA Hub pilots was launched and two grants were sign

[19] This indicator was not included in the Management Plan 2022. However, DG R&I wants to highlight the importance of the New European innovation agenda communication and the success of its communication campaign

Output	Indicator	Target	Results
Coordination structure supporting the European Open Science Cloud (EOSC) Steering Board	Renewal of the EOSC Steering Board as an independent Commission Expert Group	Q1	Yes. EOSC Steering Board Expert Group renewed at the start of the year
Agreement between leading European research funders and performs willing to reform research assessment developed and signed	Setup of agreement between leading European research funding and research performing organisations willing to reform research assessment facilitated	Q4	Yes Agreement on Reforming Research Assessment finalised in July and opened for signatures in September. Coalition supporting signatories implement commitments in the Agreement set up in December.

Specific objective 2.3: Research and innovation actions and the European Innovation Council in particular support development and scaling-up of SMEs with breakthrough and disruptive technologies.	*Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM*
Main output in 2022:	

External communication actions

Output	Indicator	Target	Results
Appointment of the first EIC Board President	News alert page views Engagement rate	1.000 1%	No appointment yet. Preselection and reserve list has been established in Q2, but no nomination yet.

Other important outputs

Output	Indicator	Target	
The European Innovation Council (EIC) WP for 2022 will be implemented and third annual work programme for the EIC for 2023 will be prepared following the advice of the EIC Advisory Board and adopted by the European Commission at the end of 2022.	Implementation of EIC WP 2022 Adoption of EIC WP 2023	Q4 Q4	Done Done

General objective 3: AN ECONOMY THAT WORKS FOR PEOPLE

General objective 3: AN ECONOMY THAT WORKS FOR THE PEOPLE	
Specific objective 3.1: Research and innovation actions, increased R&I investments and the R&I component of the European Semester boost economic growth and jobs creation	*Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM*
Main output in 2022:	

Evaluations and fitness checks

Output	Indicator	Target	Results
Assessment of the implementation of the R&I related investments and reforms RRPs	Timely assessment of R&I milestones and overall implementation	Bi-annual assessment in accordance with the reporting to the European Parliament and ad-hoc assessment of the adoption of the specified milestones and targets for the disbursement of the different payments	Done

External communication actions

Output	Indicator	Target	Results
Horizon Impact Award 2022	Web promotion	10,000	The Award has been cancelled
Industry 5.0 award	Target audiences reached	2500	31 043

Other important outputs

Output	Indicator	Target	Results
Science, Research and Innovation Performance of the EU 2022 Report	Publication of the Science, Research and Innovation Performance of the EU 2022 Report	Q2-Q3	Done
2022 edition of the European Innovation Scoreboard	Publication of the 2022 edition of the European Innovation Scoreboard	Q2-Q3	Done. Page views: 6 601 Downloads: 2 194
2022 edition of the Industrial R&D Investment Scoreboard	Publication of the 2022 edition of the Industrial R&D Investment Scoreboard	Q4	Done

Output	Indicator	Target	Results
Missions portfolios of Horizon-funded results	First version of portfolios delivered and displayed in the Horizon Results Platform	Q2-Q3	Done
Horizon Policy Support Facility 2.0	Delivery of the first set of projects	Delivery of "PSF Country" exercises for 4 countries and delivery of new "PSF Challenge" exercises by the end of 2022	4 PSF Country were delivered (RO, MO, EL, HR), while 5 PSF Challenge exercises have been completed, launched or agreed
Enhanced dialogue with Member States supporting the implementation of R&I related investments and reforms	Reinforced dialogue with Member States in the implementation of the actions related to investments and reforms	Done by the end of 2022	5 Enhanced Dialogues have already been completed, while several others are in the pipeline
Strong R&I dimension in the new cycle of Cohesion Programming, including strengthened synergies between Horizon Europe and Cohesion Programming	R&I investment under the new Cohesion programmes with the explicit use of the synergies provisions	Included by the end of 2022	Done
Knowledge Exchange Platform & Joint Action Plan with the Committee of the Regions	Enhanced dialogue with regions and Committee of Regions (CoR) on R&I investments and reforms	2 joint thematic seminars with the CoR.: Q2 and Q4 Annual reporting on Q4 on the Joint Action Plan	Done To be presented in SEDEC by beginning 2023

Output	Indicator	Target	Results
A collaborative platform for innovation, that will harness Europe's cultural heritage and cultural and creative industries as an engine of sustainable and green innovation, economic growth and employment	At least one specific R&I action introduced in Horizon Europe's WP2022 under Cluster 2 to set the foundation for the collaborative platform A cluster of R&I actions comprising at least 6 topics with a budget of at least 90 million €. These actions will support Europe's cultural and creative industries to become an engine of sustainable and green innovation, economic growth and employment	Q2 Q4	Done Partly on track: Only 4 topics are included in the draft WP, with a foreseen budget of 48M€. This was due to budget constraints with many priorities to cover under cluster 2.
Communication on revised State-aid rules, including participation as speaker in conferences/workshops/other events	Number of workshops/ conferences/other events	5-10 events, depending on request throughout 2022	Ongoing. Activities slightly delayed will continue in 2023.
Embed knowledge Valorisation in the Missions	Missions work programme parts clearly integrating knowledge valorisation requirements Use of knowledge valorisation concepts, methods and tools to promote the objectives of the Missions	Q3, Q4 Q4	Done Done
First-ever Industry 5.0 Award	Presentation of first Industry 5.0 Award	Q2	Done at the R&I Days in September 2022

Output	Indicator	Target	Results
Guiding Principles for knowledge valorisation	Commission proposal for a Council recommendation Number of Member States(MSs) that take policy initiatives based on the guiding principles by end of 2022 Outreach to stakeholders in EU Knowledge Valorisation Week 2022 Enhanced coverage of EU Knowledge Valorisation Platform	Q2 5 MSs Q1 Q3-Q4	Done 18 MSs expressed their commitment in the implementation of the guiding principles in the ERA Forum in July 2022. Done Done
Code of practice for the smart use of IP	Delivery of the code Number of key stakeholders (i.e TTOs/KTOs in RTOs) using the code by end of 2022 Awareness raising campaign (with EPO/EUIPO/EISMEA)	Q2 10 Q2 – Q4	The Code of practice for the intellectual asset management was planned to be published by the end of 2022 as stipulated in the ERA action plan. However, because the code becomes a Commission recommendation the adoption is set for Q1 2023 Non applicable as the code will be adopted by the College in Q1 2023 The awareness raising campaign was designed and organised in 2022 but it will kick off in 2023

Output	Indicator	Target	Results
Code of practice for standardisation	Delivery of the code Number of H2020 and Horizon Europe projects using the code Awareness raising campaign on standardisation	Q2 10 R&I projects by end 2022 Q2 – Q4	The Code of practice for standardisation was planned to be published by the end of 2022 as stipulated in the ERA action plan. However, because the code becomes a Commission recommendation the adoption is set for Q1 2023 Non applicable as the code will be adopted by the College in Q1 2023 The code of practice for standardisation will be part of the overall awareness raising campaign to be launched in Q1 2023
Mapping knowledge valorisation in EU Member States and Associated Countries, with focus on societal engagement and industry academia relations	Deliver policy insights for developing a code of practice for citizens, industry, academia engagement	Q3	It has been rescheduled as the new code will be developed in 2023
Knowledge valorisation skills, gaps and future needs	Deliver a gap analysis on the required skills – promote the professionalization of TTO/KTOs Deliver a list of skills as base for a toolkit for knowledge valorisation experts	Q3 Q4	It has been rescheduled. Although the work kicks off in 2022 but delivers in 2023

General objective 4: A STRONGER EUROPE IN THE WORLD

General objective 4: A STRONGER EUROPE IN THE WORLD	
Specific objective 4.1: Regional research and innovation strategies and broader association policy contribute to promoting common European R&I values and creating a global Research and Innovation Space	*Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM*
Main output in 2022:	

New policy initiatives

Output	Indicator	Target	Result
Preparing and implementing Horizon Europe Association Agreements	Association agreements negotiated in 2021 start producing legal effects	First half of 2022	Association agreement with the following countries started to produce legal effects: Albania, Armenia, Bosnia and Herzegovina, the Faroe Islands, Georgia, Iceland, Israel, Kosovo*, the Republic of Moldova, Montenegro, North Macedonia, Norway, Serbia, Tunisia, Türkiye and Ukraine.
	Issuing the call for funds and ensuring an appropriate distribution of the contributions to each programme part of the Horizon Europe Programme according to the agreed priorities and performance of entities from these countries	End of 2022	Done
	Informal discussions on possible association to Horizon Europe completed with highly industrialised third countries (Japan, Korea, Singapore, Australia, New Zealand)	End of 2022	Done

* This designation is without prejudice to positions on status, and is in line with UNSC 1244 and the ICJ Opinion on the Kosovo declaration of independence.

Output	Indicator	Target	Result
	Negotiating mandates for agreements with highly industrialised third countries requested (likely with Canada)	Second half of 2022	Done
Organisation and follow-up to different Policy Dialogues under Agreements	• A meeting of Joint Committee under Association Agreement took place • Rules of Procedure adopted by the Joint Committee • Common priorities discussed and where possible identified	End of 2022	Done Done Done
Launch of the EU-Africa Global Health EDCTP3 Joint Undertaking (follow-up to EDCTP2) as a major implementation step of the Africa Strategy	Launch the first calls for proposals under Global Health EDCTP3 Joint Undertaking	Q2	Done
Evaluations and fitness checks			
Output	**Indicator**	**Target**	**Results**
Further integration of the Western Balkans into the new European Research Area	14 ERA actions	Progress on the individual 14 ERA actions	Limited progress made in 2022 Re-enforcement needed in 2023 to get concrete commitments from Western Balkan partners to ERA actions

External communication actions			
Output	**Indicator**	**Target**	**Result**
Celebrating 10 years of global collaboration on rare diseases research	Video production showcasing the 10 years achievements of IRDiRC + launch of media campaign	To be done Q1-Q2	Facebook: • Reach – 470.916 • Impressions – 988.789 • Video views – 650.879 • Clicks – 15.571 Twitter: • Impressions – 403.838 • Engagement – 4.128 • Clicks - 827 LinkedIn: • Impressions – 61.936 Clicks – 1266
Factsheet EU-China Joint Roadmap for Future Science, Technology and Innovation Cooperation (launch of the EU-China Flagship on Climate Change and Biodiversity) News Alert on the signature of an Administrative Arrangement for co-funding of Chinese participants in Horizon Europe.	Page views Online views Number of page views	1000 400 200	Not published on request of Cab. In total 1077
Video on Implementing the global approach to R&I at the French Presidency Conference in March 2022	Nr of online views	2000	3 921
Video on Joint EU-Africa Innovation Agenda	Nr of online views	2000	4 844
Union for the Mediterranean R&I Ministerial June 2022: three factsheets on R&I Roadmaps Climate Change, Renewable Energy and Health.	Number of online views	1.000	145 - The factsheet had 145 page views. This is smallest target audience compared to general news alerts. These Ministerial meetings don't have huge pick-up in social media, which had a reach of 1.886.

Output	Indicator	Target	Result
Western Balkans Campaign	Podcasts number of total listens Factsheets number of downloads	500 200	Podcasts listens, including videos: 1.438 Factsheets number of downloads: 1.497 Factsheets pages views: 6.095

Other important outputs

Output	Indicator	Target	Results
Launch of multilateral dialogue and agreement on values and principles as basis for international engagement on R&I	Agreement by Member States on the values and principles to be endorsed at the French Presidency Conference.	March (follow up will be done on a longer-term basis)	Done
Reinvigorate R&I cooperation with the US	Development of new actions within the Trade and Technology Council (TTC) Working Group 2	By Q2	An active work steam on electro-mobility and interoperability with smart grids under WG, expected to develop recommendations for public electro-mobility charging infrastructure in 2023. This work was acknowledged in the TTC Principals meetings in May and December 2022.
	Reinvigorate the Energy Council Technology Working Group	By Q2	No. The US did not agree to hold a meeting in 2022. Work is ongoing with the US to organise a first meeting of the Working Group in 2023.
	Revamp the dialogue with the State Department and other research and innovation interlocutors to identify areas of future collaboration	By Q4	Increased dialogue with the State Department. Facilitated the preparation of a successful Joint Consultative Group meeting on 12 October 2022, which led to a series of actions agreed for further collaboration.
Deliver the EU-China Joint Roadmap for Future Science, Technology and Innovation Cooperation	Signature of administrative Arrangement on co-funding by China (Commission Decision)	Q1 **depends on negotiations with third countries*	Done

Output	Indicator	Target	Results
	Dialogue with China on all points of the roadmap with organisation of Joint S&T Cooperation Committee (JCM)	Q2 (JCM) and continued dialogue by Q4	Continuous. Progress achieved in research framework conditions but not in innovation framework conditions due to China's refusal. Mitigation is put in place, eg. Use of art 22.6 and development of due diligence tools
	Launch of the R&I Flagship on Climate Change and Biodiversity	Q4	Done
Joint European Union-African Union Innovation Agenda	Acknowledgement at the European Union-African Union Summit 2022 of technical arrangements agreed by the senior officials of the High Level Policy Dialogue	Q1 **depends on negotiations with third countries*	Done
Endorsement of the new Union for the Mediterranean R&I Agenda	Endorsement of the Agenda (roadmaps and implementation plan) at the Union for the Mediterranean Research & Innovation Ministerial in June 2022. This entails an NBI procedure with Commission Decision and Council endorsement	June 2022 **depends on negotiations with third countries*	Done
Implement the EU-CELAC Strategic Roadmap for R&I	Organisation of a EU-CELAC JIRI (Joint Initiative on Research and Innovation) Senior Officials Meeting	By Q4	The JIRI meeting is now planned to take place in the second half of 2023, under the Spanish Presidency, which has made cooperation with Latin America one of its key priorities.
	Organisation of two meetings of the EU-CELAC working group for research infrastructures	By Q4	Done
Policy Dialogues with partner countries covered by a S&T Agreement	Joint Committees planned for 2022 organised for each country	Q4 (throughout the year)	Done

Output	Indicator	Target	Results
Deepen cooperation with strategic partners	Establishment of NCP networks in each country.	By Q2	NCP networks have been established in several countries. The development of further networks and support to all third country NCPs will be ensured through a specific contract under the Service Facility concluded in December 2022.
	Co-funding mechanisms or equivalent arrangements established in 80% of the concerned countries	By Q4	In addition to the already established co-funding mechanisms with the Republic of Korea, Switzerland, Canada and Japan, co-funding mechanisms were established in 2022 with Brazil, The People's Republic of China, India, Mexico, and the Principality of Monaco.
	Implementation of the strategy to increase international participation in Horizon Europe and integrate partner countries in relevant Partnerships under Horizon Europe	By Q4	Ongoing actions, to be carried forward into 2023
Strengthened participation of the Western Balkans in Horizon Europe	Number of proposals Amount of funding received	800 250 Million	1101 proposals eligible (207 retained) Amount of funding received: 68 Million EUR

General objective 5: PROMOTING OUR EUROPEAN WAY OF LIFE

General objective 5: PROMOTING OUR EUROPEAN WAY OF LIFE	
Specific objective 5.1: Research and Innovation develop and deploy solutions, technologies and innovations to tackle emerging threats and improve crisis preparedness	*Related to spending programme(s):* *FP7, Horizon 2020, Horizon Europe*
Main output in 2022:	

New policy initiatives

Output	Indicator	Target	Results
Health preparedness and resilience, referred to by President von der Leyen in her SOTEU 2021: R&I contribution to HERA and its governance: Develop a pandemic preparedness partnership.	The concept and draft strategic R&I agenda for the pandemic preparedness partnership proposal are agreed with the EaC, to form the basis for a partnership topic in the Horizon Europe Work Programme 2023	Q4	Progressing but rescheduled. A pre-draft proposal for a European Partnership under Horizon Europe on Pandemic Preparedness was agreed on 11 February 2022. A CSA funded under Horizon Europe kicked off in September to further develop the partnership proposal and the strategic research and innovation agenda with Member States. The co-programmed partnership is planned for launch in 2025
Health preparedness and resilience, referred to by President von der Leyen in her State Of the European Union (SOTEU) 2021: Transformation of healthcare systems: Develop a European partnership on transforming health and care systems., including the first Annual Work Plan and the strategic R&I agenda agreed	Selection of the best candidate partnership.	Q3	Achieved

Specific objective 5.2: Research and innovation support the European health initiatives including the European plan to fight cancer	*Related to spending programme(s): FP7, Horizon 2020, Horizon Europe*

Main output in 2022:

New policy initiatives

Output	Indicator	Target	Results
'Cancer' Mission: contributing to the EU beating Cancer Plan, setting-up of a platform for the integrated provision at EU level of research infrastructure services to support research addressing cancer.	Launch of support activities via Cancer Mission Work Programme 2022	Q4	Achieved
Contribution to the European Health Data Space (referred to in CWP 2022) on supporting use cases relevant to the EU research community (research, regulatory and public health).	Launching of a pilot for the development and design of EHDS 2 core services to support secondary purposes (i.e. policy making and regulatory activities, research)	Q3	Achieved

External communication actions

Output	Indicator	Target	Results
Hybrid event on the Mission on Cancer (childhood care) Q3	Nr of participants	300	Postponed to Q1 2023. The event has been moved to be linked with the World Cancer Day

Other important outputs

Output	Indicator	Target	Results
Providing the R&I pillar of the Social action plan; A strategic research agenda for preparing the future of work	Publication of the report	December 2022	Achieved
Provision of comprehensive open data on SARS-CoV-2 and other infectious diseases	Additional genomic sequencing data mobilised and other data types integrated	Q4	Achieved

Output	Indicator	Target	Results
Extend the duration of the Manifesto for EU COVID 19 Research, review its application so far, explore ways to apply in other public emergencies (i.e. under HERA)	Renewed manifesto, including the review of its implementation and a proposal for extension to other public emergencies (i.e. under Inclusion of the new Manifesto in HERA)	Q4	Achieved
Future of Work policy report on R&I Investment Strategy	Target audiences reached	1000	Delayed. The publication of the report was delayed (publication on 9/02/2023) due to input being required from the growing set of participating Member States in the ERA4FutureWork action
Contribution to the Pharmaceutical strategy. Launch of the new Innovative Health Initiative (IHI) Joint Undertaking that will bring together the health industries into a novel cross sectorial collaborative program	Launch the first calls for proposals under IHI Joint Undertaking .	Q2	Achieved
Contribution to the implementation of the Communication on enabling the digital transformation of health and care in the Digital Single Market	Implementation of a proof of concept for the 1+MG federated infrastructure for cross-border sharing/access of genomic and other health data, Delivery of the first use case on the rare diseases field.	Q3-Q4	Achieved

General objective 6: A NEW PUSH FOR EUROPEAN DEMOCRACY

General objective 6: A NEW PUSH FOR EUROPEAN DEMOCRACY	
Specific objective 6.1: European research and innovation support citizens' involvement, social inclusion and equalities in Europe, including through communication of the European research and innovation added value	*Related to spending programme(s): Horizon 2020, Horizon Europe*
Main output in 2022:	

New policy initiatives

Output	Indicator	Target	Results
Contribution to the Conference on the Future of Europe and citizen engagement in R&I policy. Launch dedicated initiatives for citizens' engagement in the Area of the European Green Deal throughout 2022	Provision of 27 citizen engagement events in each Member State debating on citizens' visions for sustainable and smart mobility, sustainable food systems, and efficient buildings Provision of a high-level event for citizens to deliver their results to the Commission. This citizen input will feed both into the Conference on the Future of Europe, as well as in an expert-drafted roadmap for the climate transition].	Q1 April 2022	Achieved Achieved

Enforcement actions			
Output	**Indicator**	**Target**	**Results**
Implementation of the ERA policy agenda on gender equality, including co-design with Member States and R&I stakeholders of inclusive gender equality plans and policies: a study on intersectional aspects in R&I, support R&I organisations to develop gender equality plans (GEPs), internal and external capacity building for the integration of a gender dimension in R&I content	Final study delivered; building on policy workshop on intersectionality with R&I stakeholders and decision makers Six trainings to R&I organisations in Member States under the Pilot facility for GEPs. Seven mutual learning workshops, including with the European Alliances foreseen under the Pilot facility for GEPs One workshop with research funders on integration of gender dimension and two trainings to EC staff	April 2022 January – July 2022 Q2 – Q4	Achieved Achieved Achieved

External communication actions			
Output	**Indicator**	**Target**	**Results**
European Research and Innovation Days	Nr of participants	15.000	14000 registrations Total social media engagements: over 6,900
Promotion of the expert-drafted roadmap for the climate transition, built with the active involvement of citizens.	Social media reach	50.000	Postponed to 2023

Other important outputs			
Output	**Indicator**	**Target**	**Results**
Expert Group on the impact of covid-19 on women researchers	Four experts meeting and one policy workshop	All events having taken place by Q4 2022	Achieved

General objective 7: A MODERN, HIGH PERFORMING AND SUSTAINABLE EUROPEAN COMMISSION

General objective 7: A modern, high performing and sustainable European Commission	
Specific objective 7.1: The Common Implementation Centre and the Common Policy and Programming Centre provide user-friendly services and tools to the European Commission for effective and efficient planning, programming and implementation of the Research and Innovation Framework Programme and other EU programmes	
Main output in 2022:	

Initiatives linked to regulatory simplification and burden reduction

Output	Indicator	Target	Results
Increased use of Lump Sums	Increased use of Lump Sum in 2022 calls	Use lump sum funding in selected RIA, IA, and CSA calls, covering 5% of the Pillar 2 budget in 2022.	Lump sums cover 2% of the Pillar 2 budget in 2022. This is in line with the expectation of many stakeholders that we introduce lump sums slowly. The first big wave of lump sum topics comes with the WP 2023-2024, where lump sums cover 18% (2023) and 26% (2024) of the Pillar 2 budget.
Simplified cost calculation for personnel costs	Use of unit costs for personnel methodology in 2022 calls	End 2022	Partially done: Final draft of the underlying Commission decision is ready, pending approval. preparations for IT implementation are ongoing. The Legal Service will send its final comments in January 2023. The target is to launch it with the adoption of the Spring Work Programme 23-24.
Corporate Annotated Model Grant Agreement (AGA), including HE specifics	A finalised corporate Annotated Model Grant Agreement, published on the Participant Portal	Q2 2022	Partially done: updated version of the AGA – based on CLSS contributions provided in the course of 2022 for both the corporate and HE specific annotations – is about to be published by Central Services in Q1 2023. DG BUDG is in the process of doing the final review for this version. Similar update exercises under the responsibility of central services, will lead to a fully finalised version.

Output	Indicator	Target	Results
Horizon Europe common Audit Strategy.	Finalised and adopted (in HE Steering Board) HE common Audit Strategy	Q4 2022	Partially done: the audit strategy for HE was submitted for approval to the HE Executive Committee in December 2022. Endorsement by the HE Steering Board is expected in Q1 2023
Experts management	Improved IT solution for the management of Experts evaluators and PMON monitors	2 pilots in the ECS Back Office application : one for PMON monitors (Q3) and one for evaluators (Q4)	Partially done: the pilot of PMON was successfully launched on 16 July and entered into production on 16 January 2023. As regards the ECS Back office pilot for experts evaluators, the eExperts governance took the decision to postpone the launch of the pilot until mid-February 2023.

Evaluations and fitness checks

Output	Indicator	Target	Results
The triennial evaluation of the Executive Agencies	Evaluation report of the six Executive Agencies	Q4	Partially done: The contract with the successful tenderer was signed in July, whereas the second half of 2022 was dedicated to carrying out the evaluation itself. The tenderer submitted its progress report in Q4 2022. The final report is expected to be issued in Q1 2023.
"stakeholder" satisfaction monitoring system	CIC satisfaction Survey	Q1-Q2	Output has changed during the course of 2022. The draft of the survey was prepared in Q1 2022 but the launch was postponed since this coincided with the launch of the Client Centricity Programme and its first phase: extensive survey, interview with our stakeholders. In addition the IT DEPT has also launched its regular survey and it was considered unnecessary to multiply the surveys that the CIC launches. The decision was taken by the Director to embed the stakeholder survey within the wider Client centricity project, of which one upcoming component will be the programme owners' survey: our approach to launching surveys is being refined and will be launched in 2023 (Q2-Q3).

Output	Indicator	Target	Results
State of progress of Horizon 2020 ex-post evaluation analytical studies	3 horizontal Horizon 2020 ex-post evaluation studies and 5 impact area evaluation studies finalised	By Q4	Done
Deploying the Horizon Europe key impact pathways and overseeing their operationalisation into the Horizon Dashboard.	First Key Impact Pathways operational in Horizon Dashboard	Q2	Partially done: Indicators with available data have been implemented in a pre-production Horizon Dashboard. Work on increasing robustness of indicators continues. Further indicators to be integrated as data becomes available.
Annual Report on Research and Technological Development Activities of the European Union and Monitoring of Horizon Europe in 2021	Adoption of the Commission Communication on the Annual Report on Research and Technological Development Activities of the European Union and Monitoring of Horizon Europe in 2021	Q2	Done

External communication actions

Output	Indicator	Target	Results
Audiovisual guidance material to inform, inspire and guide internal and external stakeholders – e.g. on lump sums, Horizon Dashboard, Horizon Results Booster; interviews with Dissemination & Exploitation ecosystem stakeholders etc.	Video views	400	Postponed to 2023 due to other activities that were prioritised

Output	Indicator	Target	Results
Increased level of understanding of internal (staff) and external stakeholders of the rules, processes, and IT systems for preparing, submitting and evaluating proposals and for managing the HE grants, including grants based on lump sums	Number of Webinars, Helpdesk services, trainings	12 events by end of 2022	Done
Video on Horizon Europe Strategic Plans and the Work Programmes	Nr of views	1,000	Postponed to 2023 – the DG has decided to produce other material for the Work Programme, such as the Commissioner video and static visuals/ carrousel/ GIFs. The Strategic Plan 2025-2027 will be adopted in Q1 2024, we will consider whether it's appropriate to produce a video for it in the future.

Other important outputs

Output	Indicator	Target	Results
Preparatory co-design work for the strategic planning 2025-2027	Co-design session held to provide input for the strategic plan 2025-2027	Q2	Done with delay: the Citizens' engagement event on the Horizon Europe Strategic Plan 2025-2027 was moved to 1 December (Q4) due to the modified timing for the overall follow-up of the Conference on the Future of Europe. It was an event where around 70 citizens, randomly selected among the participants in the Conference on the Future of Europe, discussed the priorities for the Strategic Plan 2025-2027 with Commission experts.
Amendment of the 2021-2022 'main' work programme implementing the Specific Programme Implementing Horizon Europe – The Framework Programme for Research and Innovation	Adoption of the Commission Implementing Decision on the amendment of the 2021-2022 'main' work programme implementing the Specific Programme Implementing Horizon Europe including Work Programme on Missions 2022	Q2	Done

Output	Indicator	Target	Results
The 2023-2024 'main' work programme implementing the Specific Programme Implementing Horizon Europe – The Framework Programme for Research and Innovation	Adoption of the Commission Implementing Decision on the 2023-2024 'main' work programme implementing the Specific Programme Implementing Horizon Europe including Work Programme on Missions	Q4	Done
Impact & policy driven budget management	Commission 2023 Draft Budget proposal for Horizon Europe and Euratom Level of Horizon Europe and Euratom budget implementation of all implementing bodies (including former Framework programmes)	Level of budget in the COM proposal and final voted budget. 100% end of 2022	Done Budget implementation rate of 99.9% as of 31 December 2022
Performance management framework for EU Missions	Systems and operational guidelines for project evaluation, monitoring and portfolio management in place	Q3	Partially done: still under development. Activities ongoing during 2023 due to the lack of resources and priorities had to be reoriented towards the mission assessment and review exercise. It is also linked to the fact that mission monitoring is part of the overall Horizon Europe monitoring system, which is still gradually taking shape.
Citizen engagement with EU Missions	Identification of common tools across all missions for engaging citizens with missions as result of joint work with services	Q2	Done.
First Biennial Monitoring Report on European Partnerships	Adoption of the First Biennial Partnerships Monitoring Report	Q1	Done

Output	Indicator	Target	Results
Foresight in support of the Strategic Plan 2025-2027	Set of (horizontal & thematic) foresight reports published	Q3-Q4	Partially done: ongoing activities on preparing the foresight report during Q1 2023. It is due to limited resources in the unit and the fact that the project is very complex. However, a lot of emphasis has been put in making findings immediately available through the platform futures4europe.eu in order to facilitate engagement with member states, stakeholders and citizens, and in using the results in the analysis, and less emphasis in producing a publishable final report – which is still being prepared and will certainly be delivered within Q1.
Designing the Back Office Arrangements for Joint Undertakings (Jus)	Designed Back Office Arrangements	Q4	Partially done. JUs delivered proposals for four priority areas identified. The BOA proposal for accounting services is already operational, ensuring business continuity as DG BUDG discontinued its own services as of 1st December 2022. The proposals for the areas of HR, IT and procurement are being examined. Proposals for the remaining areas should follow in 2023.
Horizon Europe Control Strategy	New Horizon Europe Control Strategy, adopted by HE Steering Board	End 2022	There is a slight delay in the adoption by the Steering Board. Adoption is now planned for Q1 2023.

ANNEX 3: Draft annual accounts and financial reports

AAR 2022 Version 3

Annex 3 Financial Reports - DG R&I - Financial Year 2022

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

Table 12: Summary of Procedures

Table 13: Building Contracts

Table 14: Contracts declared Secret

Table 15: FPA duration exceeds 4 years

Table 16: Commitments co-delegation type 3 in 2022

Additional comments

TABLE 1: OUTTURN ON COMMITMENT APPROPRIATIONS IN 2022 (in Mio €) for DG R&I					
			Commitment appropriations authorised*	Commitments made	%
			1	2	3=2/1
Title 01 Research and Innovation					
01	01 01	Support administrative expenditure of the "Research and Innovation" cluster	269,10	211,24	78,50 %
	01 02	Horizon Europe	1.167,92	885,29	75,80 %
	01 03	Euratom Research and Training Programme	170,15	169,49	99,61 %
	01 20	Pilot projects, preparatory actions, prerogatives and other actions	0,89	0,89	100,00 %
Total Title 01			**1.608,07**	**1.266,92**	**78,78 %**
Title 02 European Strategic Investments					
02	02 02	InvestEU Fund	2,20	2,20	100,00 %
	02 04	Digital Europe programme	0,00	0,00	0,00 %
Total Title 02			**2,20**	**2,20**	**100,00 %**
Title 03 Single Market					
03	03 01	Support administrative expenditure of the 'Single Market' cluster	11,16	11,16	100,00 %
Total Title 03			**11,16**	**11,16**	**100,00 %**
Title 05 Regional Development and Cohesion					
05	05 01	Support administrative expenditure of the 'Regional Development and Cohesion' cluster	0,92	0,92	100,00 %
	05 02	European Regional Development Fund (ERDF)	1,04	1,04	100,00 %
Total Title 05			**1,96**	**1,96**	**100,00 %**
Title 06 Recovery and Resilience					
06	06 20	Pilot projects, preparatory actions, prerogatives and other actions	0,02	0,02	100,00 %
Total Title 06			**0,02**	**0,02**	**100,00 %**
Title 08 Agriculture and Maritime Policy					
08	08 01	Support administrative expenditure of the "Agriculture and Maritime Policy" cluster	3,68	3,68	100,00 %
Total Title 08			**3,68**	**3,68**	**100,00 %**
Title 20 Administrative expenditure of the European Commission					
20	20 02	Other staff and expenditure relating to persons	0,02	0,02	100,00 %
	20 03	Administrative Operating expenditure	2,09	2,09	100,00 %
	20 04	Information and communication technology related expenditure	2,12	2,12	100,00 %
Total Title 20			**4,23**	**4,23**	**100,00 %**
Total Excluding NGEU			**1.631,33**	**1.290,18**	**79,09 %**

Title 01 Research and Innovation					
01	01 01	Support administrative expenditure of the "Research and Innovation" cluster	38,71	6,15	15,88 %
	01 02	Horizon Europe	1.812,03	0,00	0,00 %
Total Title 01			**1.850,74**	**6,15**	**0,33 %**
Total NGEU Only			**1.850,74**	**6,15**	**0,33 %**

Total DG R&I	**3.482,07**	**1.296,33**	**37,23 %**

** 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).*

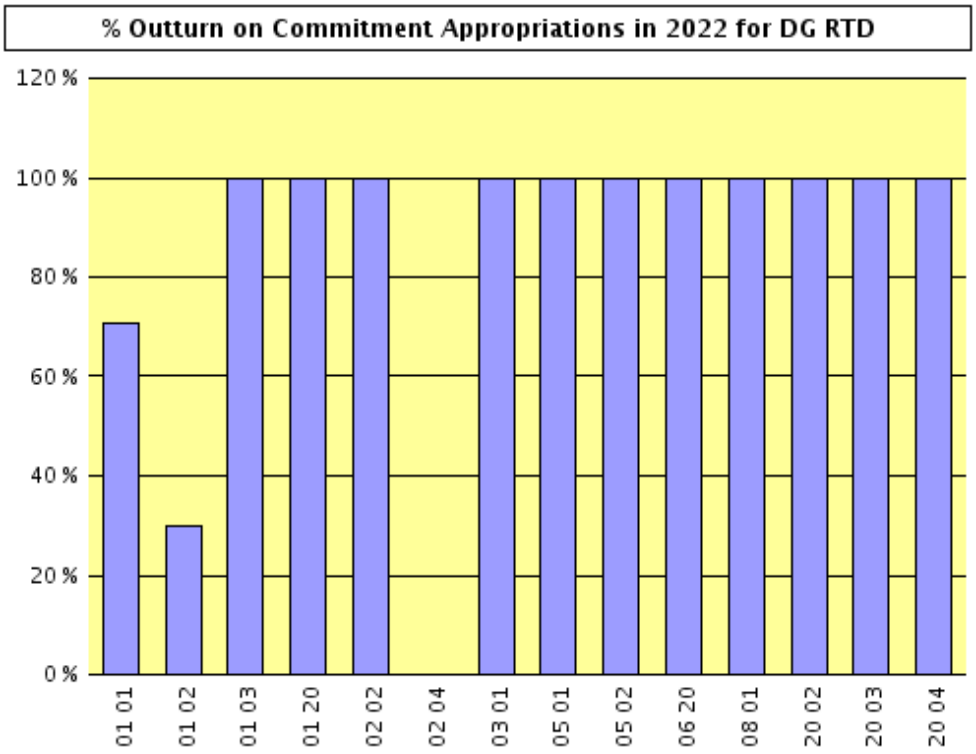

TABLE 2: OUTTURN ON PAYMENT APPROPRIATIONS in 2022 (in Mio €) for DG R&I					
			Payment appropriations authorised *	Payments made	%
			1	2	3=2/1
Title 01 Research and Innovation					
01	01 01	Support administrative expenditure of the "Research and Innovation" cluster	294,85	205,65	69,75 %
	01 02	Horizon Europe	1.242,94	946,38	76,14 %
	01 03	Euratom Research and Training Programme	205,12	155,93	76,02 %
	01 20	Pilot projects, preparatory actions, prerogatives and other actions	0,37	0,37	100,00 %
Total Title 01			**1.743,28**	**1.308,34**	**75,05%**
Title 02 European Strategic Investments					
02	02 02	InvestEU Fund	280,27	261,50	93,30 %
	02 04	Digital Europe programme	0,00	0,00	0,00 %
Total Title 02			**280,27**	**261,50**	**93,30%**
Title 03 Single Market					
03	03 01	Support administrative expenditure of the 'Single Market' cluster	11,16	11,16	100,00 %
Total Title 03			**11,16**	**11,16**	**100,00%**
Title 05 Regional Development and Cohesion					
05	05 01	Support administrative expenditure of the 'Regional Development and Cohesion' cluster	0,92	0,92	100,00 %
	05 02	European Regional Development Fund (ERDF)	1,04	1,04	100,00 %
Total Title 05			**1,96**	**1,96**	**100,00%**
Title 06 Recovery and Resilience					
06	06 20	Pilot projects, preparatory actions, prerogatives and other actions	0,02	0,02	100,00 %
Total Title 06			**0,02**	**0,02**	**100,00%**
Title 08 Agriculture and Maritime Policy					
08	08 01	Support administrative expenditure of the "Agriculture and Maritime Policy" cluster	3,68	3,68	100,00 %
Total Title 08			**3,68**	**3,68**	**100,00%**
Title 20 Administrative expenditure of the European Commission					
20	20 02	Other staff and expenditure relating to persons	0,04	0,01	22,13 %
	20 03	Administrative Operating expenditure	2,09	2,09	100,00 %
	20 04	Information and communication technology related expenditure	4,27	2,57	60,18 %
Total Title 20			**6,40**	**4,67**	**73,00%**
Total Excluding NGEU			**2.046,78**	**1.591,33**	**77,75%**

Title 01 Research and Innovation					
01	01 01	Support administrative expenditure of the "Research and Innovation" cluster	13,67	6,15	44,98 %
	01 02	Horizon Europe	63,17	0,00	0,00 %
Total Title 01			**76,84**	**6,15**	**8,00%**
Total NGEU Only			**76,84**	**6,15**	**8,00%**

Total DG R&I	**2.123,62**	**1.597,48**	**75,22 %**

** 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).*

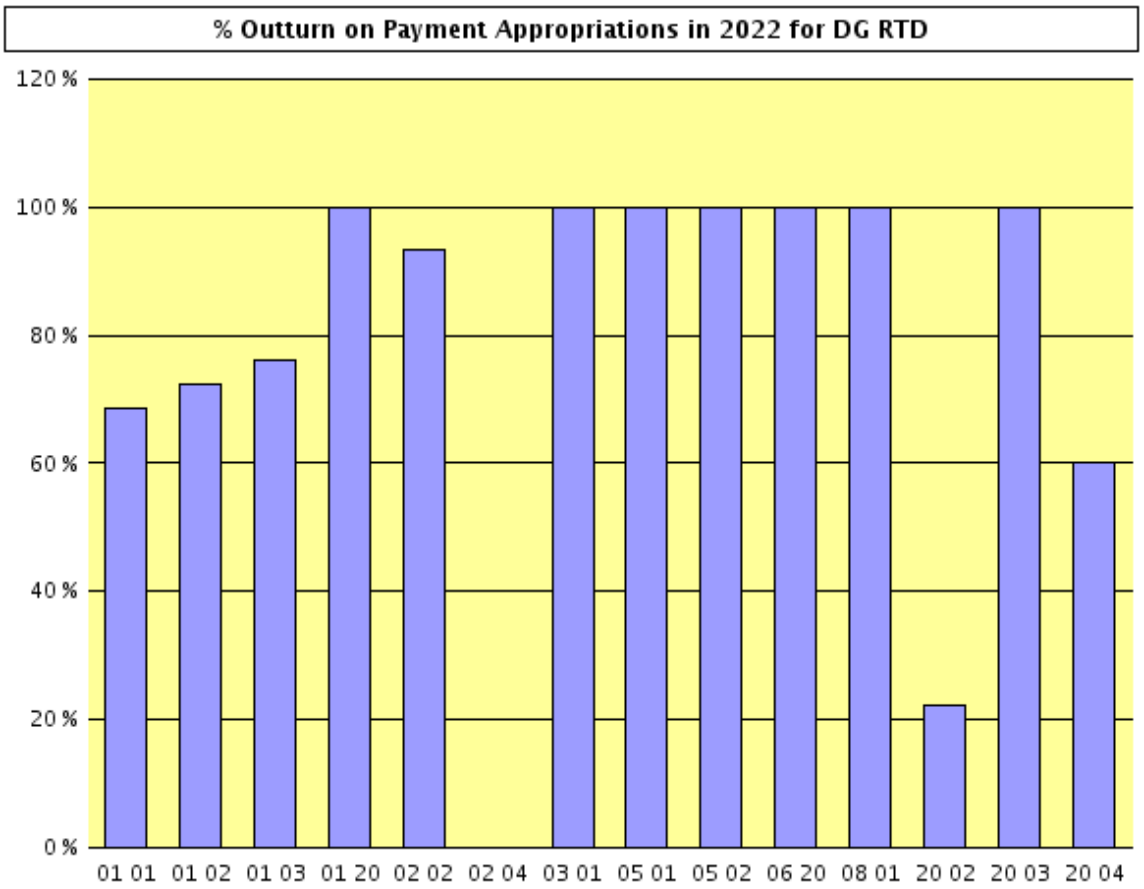

TABLE 3: BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2022 (in Mio €) for DG R&I									
			Commitments to be settled				Commitments to be settled from financial years previous to 2021	Total of commitments to be settled at end of financial year 2022	Total of commitments to be settled at end of financial year 2021
Chapter			Commitments	Payments	RAL	% to be settled			
			1	2	3=1-2	4=1-2/1	5	6=3+5	7
01	01 01	Support administrative expenditure of the "Research and Innovation" cluster	211,24	188,17	23,07	10,92%	3,84	26,91	25,95
	01 02	Horizon Europe	885,29	66,96	818,34	92,44%	1.663,69	2.482,02	2.561,92
	01 03	Euratom Research and Training Programme	169,49	81,92	87,57	51,67%	179,17	266,74	269,78
	01 20	Pilot projects, preparatory actions, prerogatives and other actions	0,89	0,00	0,89	100,00%	0,00	0,89	0,37
Total Title 01			**1.266,92**	**337,05**	**929,87**	**73,40%**	**1.846,69**	**2.776,56**	**2.858,02**

TABLE 3: BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2022 (in Mio €) for DG R&I									
			Commitments to be settled				Commitments to be settled from financial years previous to 2021	Total of commitments to be settled at end of financial year 2022	Total of commitments to be settled at end of financial year 2021
Chapter			Commitments	Payments	RAL	% to be settled			
			1	2	3=1-2	4=1-2/1	5	6=3+5	7
02	02 02	InvestEU Fund	2,20	0,00	2,20	100,00%	158,05	160,26	421,75
	02 04	Digital Europe programme	0,00	0,00	0,00	0,00%	0,00	0,00	0,00
Total Title 02			**2,20**	**0,00**	**2,20**	**100,00%**	**158,05**	**160,26**	**421,75**

TABLE 3: BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2022 (in Mio €) for DG R&I									
Chapter			Commitments to be settled				Commitments to be settled from financial years previous to 2021	Total of commitments to be settled at end of financial year 2022	Total of commitments to be settled at end of financial year 2021
			Commitments	Payments	RAL	% to be settled			
			1	2	3=1-2	4=1-2/1	5	6=3+5	7
06	06 20	Pilot projects, preparatory actions, prerogatives and other actions	0,02	0,01	0,02	63,44%	0,00	0,02	0,02
Total Title 06			**0,02**	**0,01**	**0,02**	**63,44%**	**0,00**	**0,02**	**0,02**

TABLE 3: BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2022 (in Mio €) for DG R&I									
Chapter			Commitments to be settled				Commitments to be settled from financial years previous to 2021	Total of commitments to be settled at end of financial year 2022	Total of commitments to be settled at end of financial year 2021
			Commitments	Payments	RAL	% to be settled			
			1	2	3=1-2	4=1-2/1	5	6=3+5	7
08	08 01	Support administrative expenditure of the "Agriculture and Maritime Policy" cluster	3,68	3,68	0,00	0,00%	0,00	0,00	0,00
Total Title 08			**3,68**	**3,68**	**0,00**	**0,00%**	**0,00**	**0,00**	**0,00**

TABLE 3: BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2022 (in Mio €) for DG R&I									
Chapter			Commitments to be settled				Commitments to be settled from financial years previous to 2021	Total of commitments to be settled at end of financial year 2022	Total of commitments to be settled at end of financial year 2021
			Commitments	Payments	RAL	% to be settled			
			1	2	3=1-2	4=1-2/1	5	6=3+5	7
20	20 02	Other staff and expenditure relating to persons	0,02	0,01	0,01	50,93%	0,00	0,01	0,02
	20 03	Administrative Operating expenditure	2,09	2,09	0,00	0,00%	0,00	0,00	0,00
	20 04	Information and communication technology related expenditure	2,12	0,54	1,58	74,63%	0,00	1,58	2,15
Total Title 20			**4,23**	**2,64**	**1,59**	**37,62%**	**0,00**	**1,59**	**2,17**
Total Excluding NGEU			**1.290,18**	**356,50**	**933,68**	**72,37%**	**2.004,75**	**2.938,43**	**3.281,95**

TABLE 3: BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2022 (in Mio €) for DG R&I									
Chapter			Commitments to be settled				Commitments to be settled from financial years previous to 2021	Total of commitments to be settled at end of financial year 2022	Total of commitments to be settled at end of financial year 2021
			Commitments	Payments	RAL	% to be settled			
			1	2	3=1-2	4=1-2/1	5	6=3+5	7
01	01 01	Support administrative expenditure of the "Research and Innovation" cluster	6,15	6,15	0,00	0,00%	0,06	0,06	0,06
	01 02	Horizon Europe	0,00	0,00	0,00	0,00%	0,00	0,00	0,00
Total Title 01			**6,15**	**6,15**	**0,00**	**0,00%**	**0,06**	**0,06**	**0,06**
Total NGEU Only			**6,15**	**6,15**	**0,00**	**0,00%**	**0,06**	**0,06**	**0,06**

Total for DG R&I	**1.296,33**	**362,65**	**933,68**	**72,03 %**	**2.004,81**	**2.938,49**	**3.282,02**

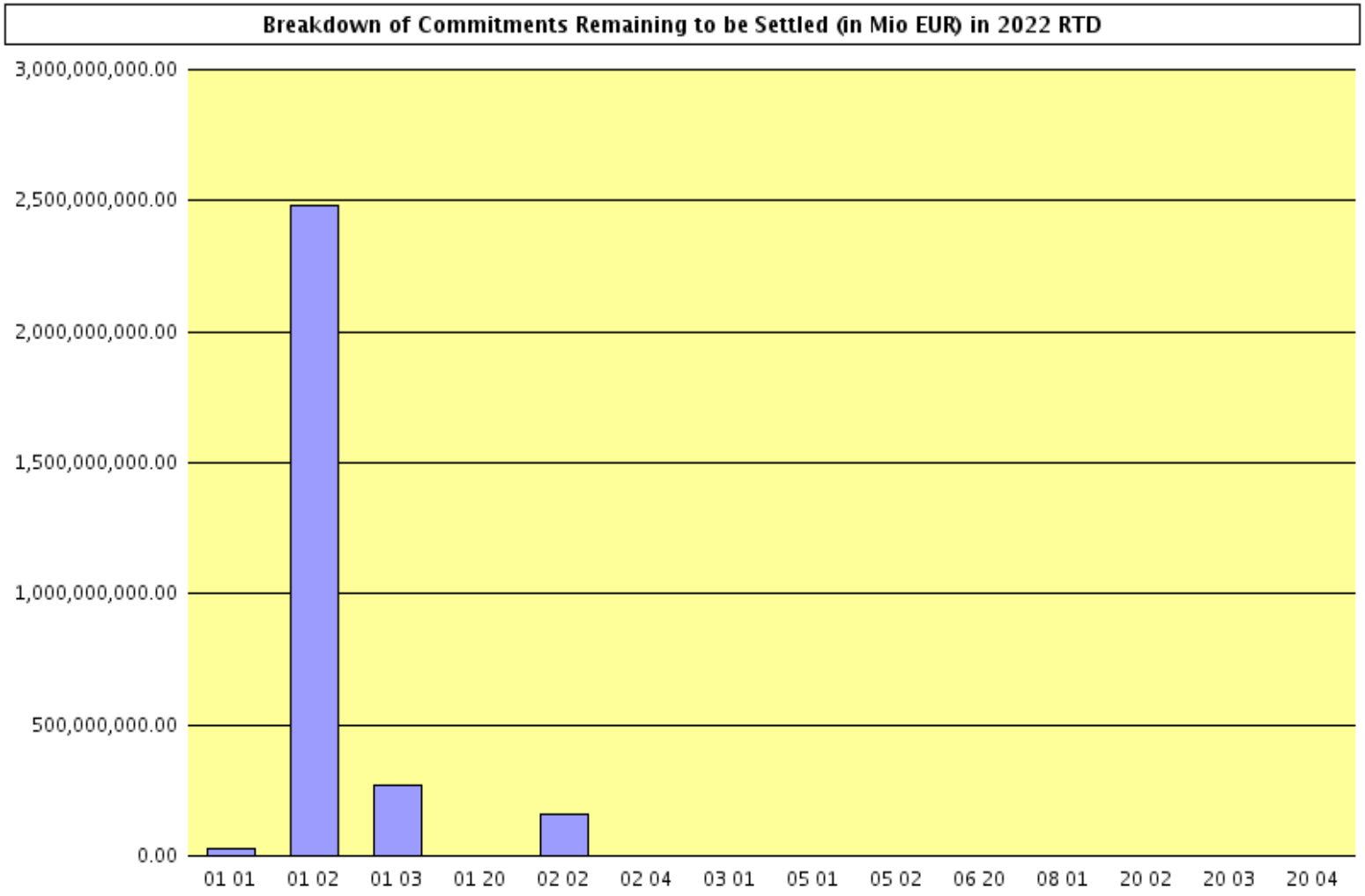
Breakdown of Commitments Remaining to be Settled (in Mio EUR) in 2022 RTD
3,000,000,000.00
2,500,000,000.00
2,000,000,000.00
1,500,000,000.00
1,000,000,000.00
500,000,000.00
0.00
01 01
01 02
01 03
01 20
02 02
02 04
03 01
05 01
05 02
06 20
08 01
20 02
20 03
20 04

TABLE 4: BALANCE SHEET for DG R&I

BALANCE SHEET	2022	2021
A.I. NON CURRENT ASSETS	3.287.751.095,06	3.375.098.580,75
A.I.1. Intangible Assets	44.911.218,93	39.019.509,30
A.I.3. Invstmnts Accntd For Using Equity Meth	0,00	0,00
A.I.4. Non-Current Financial Assets	3.110.047.199,34	3.070.630.012,34
A.I.5. Non-Current Pre-Financing	94.051.699,22	115.612.182,11
A.I.6. Non-Cur Exch Receiv & Non-Ex Recoverab	38.740.977,57	149.836.877,00
A.II. CURRENT ASSETS	594.672.233,93	921.484.511,03
A.II.1. Current Financial Assets	204.678.243,90	165.769.209,27
A.II.2. Current Pre-Financing	193.582.697,48	183.814.076,09
A.II.3. Curr Exch Receiv &Non-Ex Recoverables	45.460.022,01	384.852.436,95
A.II.6. Cash and Cash Equivalents	150.951.270,54	187.048.788,72
ASSETS	**3.882.423.328,99**	**4.296.583.091,78**
P.I. NON CURRENT LIABILITIES		0,00
P.I.2. Non-Current Provisions		0,00
P.I.3. Non-Current Financial Liabilities		0,00
P.III. NET ASSETS/LIABILITIES	0,00	0,00
P.III.1. Reserves	0,00	0,00
P.II. CURRENT LIABILITIES	-735.945.400,30	-617.902.668,37
P.II.2. Current Provisions	0,00	0,00
P.II.3. Current Financial Liabilities	-429.911.520,33	-411.029.017,00
P.II.4. Current Payables	-170.042.256,92	-109.035.759,99
P.II.5. Current Accrued Charges &Defrd Income	-135.991.623,05	-97.837.891,38
LIABILITIES	**-735.945.400,30**	**-617.902.668,37**
NET ASSETS (ASSETS less LIABILITIES)	**3.146.477.928,69**	**3.678.680.423,41**

P.III.2. Accumulated Surplus/Deficit		17.913.309.653,01

Non-allocated central (surplus)/deficit*	-21.059.787.581,70	-23.014.456.316,28

TOTAL DG R&I	**0,00**	**0,00**

It should be noted that the balance sheet and statement of financial performance presented in Annex 3 to this Annual Activity Report, represent only the assets, liabilities, expenses and revenues that are under the control of this Directorate General. Significant amounts such as own resource revenues and cash held in Commission bank accounts are not included in this Directorate General's accounts since they are managed centrally by DG Budget, on whose balance sheet and statement of financial performance they appear. Furthermore, since the accumulated result of the Commission is not split amongst the various Directorates General, it can be seen that the balance sheet presented here is not in equilibrium. Additionally, the figures included in tables 4 and 5 are provisional since they are, at this date, still subject to audit by the Court of Auditors. It is thus possible that amounts included in these tables may have to be adjusted following this audit.

TABLE 5: STATEMENT OF FINANCIAL PERFORMANCE for DG R&I

STATEMENT OF FINANCIAL PERFORMANCE	2022	2021
II.1 REVENUES	-676.753.895,03	-906.575.637,16
II.1.1. NON-EXCHANGE REVENUES	-431.800.127,44	-690.073.756,39
II.1.1.6. RECOVERY OF EXPENSES	-4.874.839,93	-3.130.837,58
II.1.1.8. OTHER NON-EXCHANGE REVENUES	-426.925.287,51	-686.942.918,81
II.1.1.8. OTHER NON-EXCHANGE REVENUES	-244.953.767,59	-216.501.880,77
II.1.2.1. FINANCIAL INCOME	-241.055.200,76	-215.146.909,38
II.1.2.2. OTHER EXCHANGE REVENUE	-3.898.566,83	-1.354.971,39
II.2. EXPENSES	1.953.093.310,09	-515.890.602,70
II.2. EXPENSES	1.953.093.310,09	-515.890.602,70
II.2.10.OTHER EXPENSES	277.261.772,20	247.658.045,75
II.2.2. EXP IMPLEM BY COMMISS&EX.AGENC. (DM)	362.435.448,83	-1.504.044.086,30
II.2.3. EXP IMPL BY OTH EU AGENC&BODIES (IM)	594.665.127,35	459.297.792,41
II.2.4. EXP IMPL BY 3RD CNTR & INT ORG (IM)	103.860,71	
II.2.5. EXP IMPLEM BY OTHER ENTITIES (IM)	163.238.072,49	176.551.696,22
II.2.6. STAFF AND PENSION COSTS	-521.763,00	-620.911,00
II.2.8. FINANCE COSTS	555.910.791,51	105.266.860,22
STATEMENT OF FINANCIAL PERFORMANCE	**1.276.339.415,06**	**-1.422.466.239,86**

Explanatory Notes (facultative):

TABLE 5bis: OFF BALANCE SHEET for DG R&I		
OFF BALANCE	**2022**	**2021**
OB.1. Contingent Assets	13.010.313,00	15.003.563,00
GR for pre-financing	13.010.313,00	15.003.563,00
OB.2. Contingent Liabilities	-2.740.386.701,00	-2.681.382.593,00
OB.2.1. Guarantees given for EU FI	-2.740.386.701,00	-2.681.382.593,00
OB.2.7. CL Legal cases OTHER	0,00	0,00
OB.3. Other Significant Disclosures	-3.089.213.388,39	-3.608.056.165,63
OB.3.2. Comm against app. not yet consumed	-2.726.855.977,61	-3.163.113.165,63
OB.3.3.22. LC - EURATOM	-362.357.410,78	-444.943.000,00
OB.4. Balancing Accounts	5.816.589.776,39	6.274.435.195,63
OB.4. Balancing Accounts	5.816.589.776,39	6.274.435.195,63
OFF BALANCE	**0,00**	**0,00**

Explanatory Notes (facultative):

It should be noted that the balance sheet and statement of financial performance presented in Annex 3 to this Annual Activity Report, represent only the assets, liabilities, expenses and revenues that are under the control of this Directorate General. Significant amounts such as own resource revenues and cash held in Commission bank accounts are not included in this Directorate General's accounts since they are managed centrally by DG Budget, on whose balance sheet and statement of financial performance they appear. Furthermore, since the accumulated result of the Commission is not split amongst the various Directorates General, it can be seen that the balance sheet presented here is not in equilibrium.

Additionally, the figures included in tables 4 and 5 are provisional since they are, at this date, still subject to audit by the Court of Auditors. It is thus possible that amounts included in these tables may have to be adjusted following this audit.

Legal Times									
Maximum Payment Time (Days)	**Total Nbr of Payments**	**Nbr of Payments within Time Limit**	**Percentage**	**Average Payment Times (Days)**	**Nbr of Late Payments**	**Percentage**	**Average Payment Times (Days)**	**Late Payments Amount**	**Percentage**
30	2.736	2.678	97,88 %	12,77	58	2,12 %	43,24	47.337.681,61	4, %
45	1	1	100,00 %	7,00				0,00	0, %
60	169	164	97,04 %	20,26	5	2,96 %	66,00	1.007.260,37	2, %
90	73	73	100,00 %	58,60				0,00	0, %

Total Number of Payments	**2.979**	**2.916**	**97,89 %**		**63**	**2,11 %**		**48344941,98**	**3, %**
Average Net Payment Time	**14,98590131**			**14,34**			**45,05**		
Average Gross Payment Time	**16,43705942**			**15,7914952**			**46,31746032**		

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**
0	22	195	6,55 %	2.979	139.870.004,95	8,83 %	1.584.225.651,77

Late Interest paid in 2022			
DG	**GL Account**	**Description**	**Amount (Eur)**
R&I	65010100	Interest on late payment of charges New FR	2.268,25
			2.268,25

NB: Table 6 only contains payments relevant for the time statistics. Please consult its exact scope in the AAR Annex3 BO User Guide (https://myintracomm.ec.europa.eu/budgweb/EN/abac/dwh/Pages/its-030-10-20_documentation.aspx).

TABLE 7: SITUATION ON REVENUE AND INCOME in 2022 for DG R&I								
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	7=3-6
32	Revenue from the supply of goods, services and work - Assigned revenue	285.296,78	0,00	285.296,78	285.296,78	0,00	285.296,78	0,00
33	Other administrative revenue	2.431.134,13	900.475,83	3.331.609,96	2.431.134,13	49.692,51	2.480.826,64	850.783,32
40	Revenue from investments and accounts	0,00	45.011,21	45.011,21	0,00	0,00	0,00	45.011,21
60	Single market, innovation and digital	446.514.207,73	500.323,35	447.014.531,08	446.304.711,74	431.729,66	446.736.441,40	278.089,68
62	Natural resources and environment	4.603.069,18	0,00	4.603.069,18	4.603.069,18	0,00	4.603.069,18	0,00
66	Other contributions and refunds	8.714.625,87	0,00	8.714.625,87	8.714.625,87	0,00	8.714.625,87	0,00
67	Completion for outstanding recovery orders prior to 2021	25.440.433,04	15.610.090,47	41.050.523,51	25.440.433,04	796.581,44	26.237.014,48	14.813.509,03
Total DG R&I		**487.988.766,73**	**17.055.900,86**	**505.044.667,59**	**487.779.270,74**	**1.278.003,61**	**489.057.274,35**	**15.987.393,24**

TABLE 8: FINANCIAL IMPACT OF EX-ANTE AND EX-POST CONTROLS in 2022 for DG R&I

EX-ANTE CONTROLS	Irregularity	OLAF notified	Total undue payments recovered
NON ELIGIBLE IN COST CLAIMS	532.515,62		**532.515,62**
CREDIT NOTES	72.200,39		**72.200,39**
RECOVERY ORDERS ON PRE-FINANCING			
Sub-Total	**604.716,01**		**604.716,01**

EX-POST CONTROLS	Irregularity	OLAF notified	Total undue payments recovered
INCOME LINES IN INVOICES	3.789.419,47		**3.789.419,47**
RECOVERY ORDERS OTHER THAN ON PRE-FINANCING	817.111,92	197.600,78	**1.014.712,70**
Sub-Total	4.606.531,39	197.600,78	**4.804.132,17**
GRAND TOTAL (EX-ANTE + EX-POST)	**5.211.247,40**	**197.600,78**	**5.408.848,18**

TABLE 9: AGEING BALANCE OF RECOVERY ORDERS AT 31/12/2022 for DG R&I						
	Number at 01/01/2022	**Number at 31/12/2022**	**Evolution**	**Open Amount (Eur) at 01/01/2022**	**Open Amount (Eur) at 31/12/2022**	**Evolution**
1993	2	2	0,00 %	281.333,80	281.333,80	0,00 %
1994	1	1	0,00 %	46.307,00	46.307,00	0,00 %
2001	3	3	0,00 %	254.436,64	254.436,64	0,00 %
2002	1	1	0,00 %	6.899,24	6.899,24	0,00 %
2003	1	1	0,00 %	159.578,00	159.578,00	0,00 %
2004	1	1	0,00 %	13.691,46	13.691,46	0,00 %
2005	1	1	0,00 %	147.075,61	147.075,61	0,00 %
2007	1		-100,00 %	24.820,00		-100,00 %
2008	1	1	0,00 %	99.752,00	99.752,00	0,00 %
2009	7	7	0,00 %	601.020,40	601.020,40	0,00 %
2010	5	5	0,00 %	209.869,49	209.869,49	0,00 %
2011	3	2	-33,33 %	339.746,44	316.880,79	-6,73 %
2012	9	9	0,00 %	2.930.711,25	2.930.711,25	0,00 %
2013	9	9	0,00 %	661.025,90	661.025,90	0,00 %
2014	4	2	-50,00 %	274.989,12	216.262,27	-21,36 %
2015	5	5	0,00 %	1.133.323,76	1.103.923,60	-2,59 %
2016	6	6	0,00 %	324.392,47	324.392,47	0,00 %
2017	10	7	-30,00 %	1.833.903,20	1.780.487,18	-2,91 %
2018	2	2	0,00 %	1.735.746,90	1.735.746,90	0,00 %
2019	7	6	-14,29 %	1.897.298,38	1.403.884,07	-26,01 %
2020	19	15	-21,05 %	2.066.312,68	1.900.853,55	-8,01 %
2021	8	4	-50,00 %	2.322.712,07	1.887.310,59	-18,75 %
2022		1			209.495,99	
	106	**91**	**-14,15 %**	**17.364.945,81**	**16.290.938,20**	**-6,18 %**

TABLE 10:Recovery Order Waivers >= 60 000 € in 2022 for DG R&I

Waiver Central Key	Linked RO Central Key	RO Accepted Amount (Eur)	LE Account Group	Commission Decision	Comments

Total DG R&I	

Number of RO waivers	

There are 8 waivers below 60 000 € for a total amount of -229,845.26

Justifications:
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TABLE 11: Negotiated Procedures in 2022 for DG R&I

Internal Procedures > € 60,000

Negotiated Procedure Legal base	Number of Procedures	Amount (€)
Annex 1 - 11.1 (e) - New services/works consisting in the repetition of similar services/works	1	7.425.000,00
Total	**1**	**7.425.000,00**

TABLE 12: Summary of Procedures in 2022 for DG R&I

Internal Procedures > € 60,000

Procedure Legal base	Number of Procedures	Amount (€)
Negotiated procedure middle value contract (Annex 1 - 14.2)	1	126.918,40
Negotiated procedure without prior publication (Annex 1 - 11.1)	1	7.425.000,00
Open procedure (FR 164 (1)(a))	6	61.814.058,75
Total	**8**	**69.365.977,15**

Additional Comments:

TABLE 13: BUILDING CONTRACTS in 2022 for DG R&I

Legal Base	Procedure subject	Contract Number	Contractor Name	Contract Subject	Contracted Amount (€)

TABLE 14: CONTRACTS DECLARED SECRET in 2022 for DG R&I

Legal Base	LC Date	Contract Number	Contract Subject	Contracted Amount (€)

TABLE 15: FPA duration exceeds 4 years - DG R&I

TABLE 16: Commitments co-delegation type 3 in 2022 for DG R&I

ANNEX 4: Financial scorecard

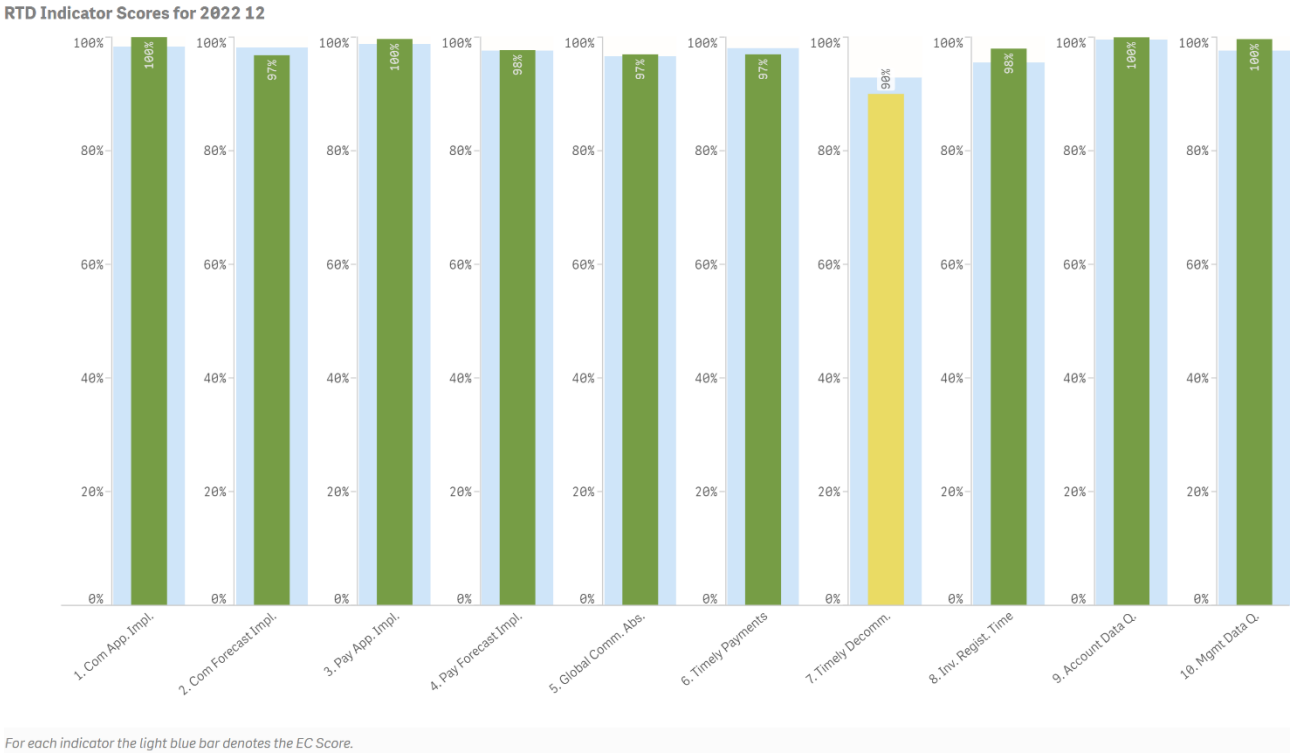
The Annex 4 of each Commission service summarises the annual result of the standard financial indicators measurement. Annexed to the Annual Activity Report 2022, 10 standard financial indicators are presented below, each with its objective and result for the Commission service and for the EC as a whole (for benchmarking purposes)[20]:

- **Commitment Appropriations (CA) Implementation**
- **CA Forecast Implementation**
- **Payment Appropriations (PA) Implementation**
- **PA Forecast Implementation**
- **Global Commitment Absorption**
- **Timely Payments**
- **Timely Decommitments**
- **Invoice Registration Time**
- **Accounting Data Quality**
- **Management Data Quality**

For each indicator, its value (in %) for the Commission service is compared to the common target (in %). The difference between the indicator's value and the target is colour coded as follows:

- 100 – >95% of the target: dark green
- 95 – >90% of the target: light green
- 90 – >85% of the target: yellow
- 85 – >80% of the target: light red
- 80 – 0% of the target: dark red

The Commission services are invited to provide commentary for each indicator's result in the dedicated comment section below the indicators scores as this can help the reader to understand the Commission's service context. In cases when the indicator's value achieves 80% or less of the target, the comment becomes mandatory.The detailed definitions of the indicators are available on the internal DG BUDG site (BudgPedia) and managed by unit BUDG.C5 Financial Reporting.



[20] If the EC service did not perform any transaction in the area measured by the indicator or the information is not available in the central financial system, the indicator is not calculated (i.e. displayed as "-") in this Annex.

Indicator	Objective	Comment[21]	R&I Score	EC Score
1. Commitment Appropriations Implementation	Ensure efficient use of commitment appropriations expiring at the end of Financial Year		100%	98%
2. Commitment Forecast Implementation	Ensure the cumulative alignment of the commitment implementation with the commitment forecast in a financial year		97%	98%
3. Payment Appropriations Implementation	Ensure efficient use of payment appropriations expiring at the end of Financial Year		100%	99%
4. Payment Forecast Implementation	Ensure the cumulative alignment of the payment implementation with the payment forecast in a financial year		98%	98%
5. Global Commitment Absorption[22]	Ensure efficient use of already earmarked commitment appropriations (at L1 level)		97%	97%
6. Timely Payments	Ensure efficient processing of payments within the legal deadlines	For year 2022, the timely payment score for DG Research and Innovation is 97%, which is slightly below the Commission's average.	97%	98%
7. Timely Decommitments	Ensure efficient decommitment of outstanding RAL at the end of commitment life cycle		90%	93%
8. Invoice Registration Time	Monitor the accounting risk stemming from late registration of invoices in the central		98%	95%

[21] An explanation behind the indicator result can be provided, e.g. the comment about the achievement itself, reference to the whole Commission performance (better or worse), reasons behind this achievement. The comment is mandatory for the 'Timely payments' indicator. For the rest of indicators the comment is mandatory only if the score is equal or below the target of 80%.

[22] Due to technical limitation: 1. the indicator does not take into account the Com L1 Consumption between the FDC ILC date and the FA FDI allowed as an exception in the external actions for Com L1 of type GF, i.e. with Financing Agreement, under the FR2018 Article 114.2. 2. it is technically not possible to exclude the decommitment of RAL (C8) which is subsequently re-committed for a new purpose. As a result, the actual Indicator score may be slightly higher than the one reported for DGs using the GF commitments.

	accounting system ABAC			
9. Accounting Data Quality	Ensure the good data quality of ABAC transactions with the focus on fields having a primary impact on the accounts		100%	100%
10. Management Data Quality	Ensure the good data quality of ABAC transactions with the focus on fields having a primary impact on the management decisions		100%	98%

ANNEX 5: Materiality criteria

This Annex provides a detailed explanation on how the Authorising Officer by Delegation defined the materiality threshold as a basis for determining whether significant weaknesses should be subject to a formal reservation to his/her declaration.

Introduction

Deciding on whether a weakness is significant is a **matter of judgement** by the Authorising Officer by Delegation, who remains responsible for the declaration of assurance, including any reservations to it. In doing so, he/she should **identify the overall impact of a weakness** and **judge whether it is material** enough so that the non-disclosure of the weakness is likely to have an influence on the decisions or conclusions of the users of the declaration. The benchmark for this judgement is the materiality criteria which the AOD sets when designing the internal control system under his/her responsibility. For DG R&I, the materiality of residual weaknesses identified (i.e. after mitigating and corrective measures) is assessed based on qualitative and/or quantitative criteria, in line with the instructions for the preparation of the Annual Activity Report.

The **qualitative assessment** includes an analysis of the causes and the types of error (including whether they are repetitive) to conclude on the nature, context and/or scope of the weaknesses identified. This may refer to significant control system weaknesses or critical issues reported by the Directors, the Authorising Officers by Sub-Delegation, the European Court of Auditors (ECA), the Internal Audit Service (IAS), DG BUDG or OLAF. Also, the duration and any mitigating controls or corrective actions are taken into consideration.

The **quantitative assessment** aims at estimating any financial impact ("amount at risk") resulting from the errors detected. DG R&I has set the materiality level for each distinct research framework programme with coherent risk characteristics for the amount at risk over the programming period. This analysis and the conclusions are presented concisely in the body of the Annual Activity report.

Chapter A – Qualitative criteria for defining significant weaknesses

For all methods of implementation under its operational budget, the different parameters relevant in DG R&I for determining significant weaknesses are the following ones:

- **Significant control system weaknesses**

Control system weaknesses (whether this is in a system operated by the Commission or by a third party) may be identified by management itself (for example through ex-post audits or through the assessment of the effectiveness of internal control systems), by internal or external auditors or by third party control instances. They may relate to the design or operational effectiveness of a control or of an entire system.

- **Critical issues outlined by the European Court of Auditors, the Internal Audit Service, DG BUDG and OLAF.**

Any critical recommendations made by the European Court of Auditors, the IAS, DG BUDG or OLAF, which have not been effectively addressed should be assessed in terms of their significance. Here, the term "critical recommendation" is used in a wider sense; it includes those recommendations labelled by the auditor as "critical" as well as those not labelled at all which is assessed as having a critical impact on the assurance. The impact on assurance of recommendations labelled "very important" for which there is a significant delay in the implementation of the Action Plan will also be taken into account.

- **Significant reputational events**

Events or weaknesses which have a significant reputational impact on DG R&I, or indirectly on the Commission, will be reported irrespective of the amount of damage to DG R&I administrative and operational budget and will be considered for issuing a reservation on a reputational basis.

When assessing the significance of any weaknesses, the following factors are considered:

- the nature and scope of the weakness;
- the duration of the weakness;
- the existence of compensatory measures (mitigating controls which reduce the impact of the weakness)
- the existence of effective corrective actions to correct the weaknesses (Action Plans and financial corrections) which have had a measurable impact.

When significant weaknesses are identified, a quantification of the amount at risk should be carried out when possible (See Chapter B).

Chapter B – Quantitative criteria for defining reservations

This section provides the methodology for measuring the residual amount at risk and determining its materiality.

DG Research and Innovation's expenditure is composed of indirectly managed grants, directly managed grants, financial instruments, contribution to administrative expenditure of Executive Agencies and other direct spending mostly of an administrative nature. The error rate affecting payments is estimated yearly and per management system, following a methodology that takes into account the risk associated to the type of expenditure.

Considering that the fact that the research framework programmes' implementing bodies[23] are sharing a common ex-post audit approach, and an important part of DG R&I yearly

[23] Directorates General, Executive Agencies and Joint Undertakings (also called Article 187 bodies) implementing grants of the Research Framework Programmes.

expenditure is related to indirectly or directly managed research grants, the following section focusses on this specific management system.

RESEARCH FRAMEWORK PROGRAMMES – COMMON ASPECTS

The assessment of the effectiveness of the different programmes' control system is based mainly, but not exclusively, on ex-post audits' results. The effectiveness is expressed in terms of detected and residual error rate, calculated on a representative sample on a multi-annual basis.

Assessment of the 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 budget, 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 adjusted by subtracting:

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

This results in a residual error rate, which is calculated as follows:

$$\text{Re}\,sER\% = \frac{(\text{Re}\ pER\% * (P - A)) - (\text{Re}\ pERsys\% * E)}{P}$$

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. The RepER% is composed of complementary portions reflecting the proportion of negative systemic and non-systemic errors detected. This rate is the same for all implementing entities, without prejudice to possibly individual detected error rates.

RepERsys% portion of the RepER% representing negative systemic errors, (expressed as a percentage). The RepERsys% is the same for all entities and it is calculated from the same set of results as the RepER%

P total requested EC contribution (€) in the auditable population (i.e. all paid financial statements).

A total requested EC contribution (€) as approved by financial officers of all audited financial statements. This will be collected from audit results.

E total non-audited requested EC contribution (€) of all audited beneficiaries.

The Common Representative Sample (CRS) 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 the Seventh Framework Programme (FP7)/Horizon 2020. This information 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 CRS 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.

Should a calculation of the residual error rate based on a representative sample not be possible for a FP for reasons not involving control deficiencies,[24] 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 then be 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 and Innovation family 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 systemic errors have been detected and corrected.

In addition, basing materiality solely on ABB Activity Based Budgeting 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

[24] 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.

on cost claims that 'clear' those pre-financings. Pre-financing expenditure is very low risk, being paid automatically after the signature of the contract.

Notwithstanding the multiannual span of their control strategy, the Directors-General (and the Directors of the Executive Agencies and Joint Undertakings) implementing Research and Innovation Framework Programmes 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 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 foreseen.

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 thus, 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 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 a case, they would be expected to qualify their annual statement of assurance with a reservation.

2020 REVISED METHODOLOGY FOR THE CALCULATION OF THE ERROR RATE FOR HORIZON 2020

European Court of Auditors observations

The European Court of Auditors observed in its 2018 and 2019 Annual Reports that the error rate of Horizon 2020 was understated due to the fact that the "*ex-post audits aim for maximum coverage of the accepted costs, but rarely cover all the costs. The error rate is calculated as a share of all the accepted costs, instead of the amount actually audited. This means that the denominator in the error calculation is higher, so the error rate is understated. In case the errors found are of a systemic nature, the error is extrapolated which partially*

compensates for the above-mentioned understatement. However, since extrapolation is not performed for non-systemic errors, the overall error rate is nevertheless understated. The understatement of the error rate cannot be quantified. It is, then, impossible to determine whether the impact of this understatement is significant".

In response to this observation, in 2020 the Commission re-defined its methodology for calculating the Horizon 2020 error rate. In order to quantify any potential understatement mentioned by the Court, the Commission applied a new methodology for all audits closed as from 01 January 2020. The main change in the methodology is that the denominator used in the error calculation is the sum of costs actually audited and not the sum of all accepted costs.

In this respect, an additional 0.38 % (calculated on 1 937 H2020 audit participations by difference with the previous methodology) has been used to top up the cumulative detected error rate for 2022.

IAS limited review on the 2020 error rate calculation for H2020

The IAS has carried out a limited review on the methodology for calculation of the error rates of Horizon 2020 in the year 2020. The findings of this limited review confirmed that there is no weakness in the calculation of the detected error rate and that the impact of these findings on the accuracy of the calculation of the residual error rate is minor. However, the IAS recommended that:

1. The Common Implementation Centre should:

    1.1. Calculate the corporate Horizon 2020 residual error rate based on the actual level of implementation of audit results and extension of audit findings stemming from data encoded by the Authorising Officers;
    1.2. Considering that there is no data on the sampled amounts for audits closed before 2020, estimate the amount actually audited by calculating the ratio of costs actually audited to the total amount of the related accepted cost claims for all the audits closed since 1 January 2020 ('A' parameter in the formula for calculating the residual error rate) and adapt parameter 'E' accordingly;

    1.3. Formalise the changes in the residual error rate calculation.

2. The Common Audit Service (CAS) should:

    2.1. Change the audit report template to include a line in the table of Annex 1 with the audited amounts (sampled);

    2.2. Include fields in AUDEX to encode the audited amounts per participation and cost category and any other IT tool used to register the ex post audits' data which feed the Microsoft Access database for the calculation of the representative detected error rate;

    2.3. Calculate the top-up automatically in the Microsoft Access database. For Horizon Europe, the calculation will be in line with the new methodology and no top up calculation will be required.

The recommendations 1.1 to 2.2 above are fully implemented. The recommendation 2.3 refers to Horizon Europe and will be completed once the audit campaign for Horizon Europe starts. Nevertheless, the new methodology, without the need for a top up calculation, is already being implemented for Horizon 2020 audits.

RESEARCH FRAMEWORK PROGRAMMES – SPECIFIC ASPECTS

The control system of each framework programme is designed 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.

As each programme has 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 the Annual Activity Report, is to ensure that the residual error rate, i.e. the level of errors that remain undetected and uncorrected, does not exceed 2% by the end of the programmes' management cycle.

Horizon 2020 Framework Programme

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.

This is based on the provision of the Commission's proposal for the Regulation establishing the Horizon 2020 Framework Programme[25] 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

[25] 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.

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.

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 the Seventh Framework Programme (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 %.

Horizon Europe Framework Programme

For Horizon Europe Framework Programme[26], the general control objective, following the standard quantitative materiality threshold proposed in the standing instructions for Annual Activity Reports, is to ensure that the cumulative residual error rate, i.e. the level of errors, which remain undetected and uncorrected, does not exceed 2%.

EURATOM Horizon 2020 and EURATOM Horizon Europe

The EURATOM Horizon 2020[27] and Horizon Europe[28] Regulations complement respectively the Horizon 2020 and Horizon Europe Regulations. The EURATOM Audit Strategy is articulated as a complement to the Horizon 2020 one. However, for the estimation of the amount at risk, only the Horizon 2020 error rate has been presented and used as the EURATOM error rate is

[26] Regulation (EU) 2021/695 of the European Parliament and of the Council of 28 April 2021 establishing Horizon Europe

[27] Council Regulation (Euratom) No 1314/2013 of 16 December 2013 on the Research and Training Programme of the European Atomic Energy Community (2014-2018) complementing the Horizon 2020 Framework Programme for Research and Innovation (OJ 347/84, 20.12.2013).

[28] Council Regulation (Euratom) 2021/765 complementing the Horizon Europe Regulation

not statistically representative. The estimation of EURATOM Horizon Europe error rate is also aligned with the one of Horizon Europe. The quantitative materiality threshold for Euratom programmes is the same as for the Horizon framework programmes.

DE MINIMIS THRESHOLD FOR FINANCIAL RESERVATION

As of 2019, a 'de minimis' threshold for financial reservations is introduced. Quantified AAR reservations related to residual error rates above the 2% materiality threshold, are deemed not substantial for segments representing less than 5% of a DG's total payments and with a financial impact below EUR 5 million. In such cases, quantified reservations are no longer needed.

ANNEX 6: Relevant Control System(s) for budget implementation (RCSs)

ANNEX 6 A: GRANTS DIRECT MANAGEMENT

DG Research and Innovation uses one Relevant Control System (RCS) for the management of grants under each ongoing research programme (FP7, Horizon 2020, Horizon Europe).
For FP7 RCS, ex-ante control stages A, B, C do not apply anymore since the corresponding tasks are no longer carried out. These stages can be consulted in previous Annual Activity Reports of DG R&I.
The RCSs for Horizon Europe and for H2020 are similar. The main improvements for Horizon Europe are the co-creation of the work programme by the thematic Groups of Directors, and the simplifications introduced, namely the single daily rate for personnel costs and the rollout of the lump sum funding.
The Control Strategy for Horizon Europe grant management is under preparation and will be finalised by the first quarter of 2023. The ex-ante control guidance is already available, and the ex-post audit strategy concept paper has been adopted by the HE Steering Board in January. However, the new controls already in place are reported in section 1 "Ex-ante controls" (sub-sections A, C and D) and highlighted in grey.

The RCSs for Euratom both under H2020 and Horizon Europe are similar to, , the general ones respectively for H2020 and for Horizon Europe, except for the ex-post control strategy which is specific to Euratom.

The error rates per programme are presented in Table X of Annex 9.

1. Ex-ante controls

Effectiveness and efficiency are detailed in stages A to D.
Economy is calculated overall for the ex-ante controls and detailed at the end of paragraph 1.

A - Preparation, adoption and publication of the Work Programmes for indirect actions and Calls for proposals

Main control objectives: Ensuring that the Commission selects the proposals that contribute the most towards the achievement of the policy or programme objectives (effectiveness); Compliance (legality & regularity); Prevention of fraud (anti-fraud strategy); due consideration of other horizontal priorities (ethics, gender balance, security aspects).

Main risks It may happen (again) that...	Mitigating controls	Coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
The work programmes and the subsequent calls for proposals do not adequately reflect the policy objectives, priorities, are incoherent	For Horizon 2020 and Horizon Europe, hierarchical validation within the authorising department Inter-	**Coverage / Frequency**: 100% Depth: All work programmes	**Effectiveness:** The work programmes are adopted by the Commission. Success rates in terms of "over-subscription":

Main risks It may happen (again) that...	Mitigating controls	Coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
and/or the essential eligibility, selection and award criteria are not adequate to ensure the evaluation of the proposals. The Horizon 2020 and Horizon Europe implementation (procedures, monitoring arrangements, communication with beneficiaries, budget planning, etc) has serious shortcomings.	service consultation, including all relevant services. Adoption by the Commission. Explicit allocation of responsibility. Under Horizon Europe, the work programmes proposed by the Directors' Groups according to the Commission decision C(2021)4472 are co-created with the work of the various entities and with the processes established in this decision. In particular, the Common Implementation Centre (CIC) in DG Research and Innovation provides all DGs involved in the implementation of Horizon 2020 and Horizon Europe research with harmonised procedures, guidance and IT tools. The Common Policy Centre (CPC) in DG Research and Innovation under Horizon Europe centralises the budget planning and the monitoring of the Horizon Europe and Horizon 2020's budget implementation. The CIC/CPC governance structure ensures that programme implementation experience gathered feeds back to the programme design.	are thoroughly reviewed at all levels, including for operational and legal aspects and all underlying implementation tools are defined and developed according to common rules. Under Horizon Europe, all business processes follow a governance system under the due supervision of entities such as the Steering Board, the Executive Committee, the Directors' Groups and key user groups.	number of proposals retained for funding compared to number of eligible proposals received. **Qualitative Benefits:** A good Work Programme and well publicised calls should generate a large number of good quality projects, from which the best can be chosen. There will therefore be real competition for funds. Optimised procedures, common approach on multiple issues (audits, fraud, legal aspects, reporting...); better reporting on the whole programme – better management of the programme[29].

[29] The mutualisation of the support services represents a quantitative benefit which is certain but not accurately quantifiable in the context of reorganisations, new programme's setting up, general HR offsetting through the Commission.

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 and other horizontal priorities (ethics, gender balance, security aspects).

Main risks It may happen (again) that…	Mitigating controls	Coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
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 work programme and subsequent calls for proposals. Conflict of interest regarding the expert evaluators.	Selection and appointment of external expert evaluators Conflict of interest checks. Assessment by independent experts. Appropriate briefing of experts, including on the evaluation of cost estimations in lump sum proposals. Comprehensive IT system supporting the evaluation of proposals and allowing better monitoring of the process. Involvement of external observers in the evaluation process. 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. Systematic checks on operational and legal aspects performed before signature of the Grant Agreement Redress procedure.	**100% vetting** (including selection) of experts for technical expertise and independence (e.g., conflicts of interests, nationality bias, ex-employer bias, collusion). **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.	Effectiveness: Number of proposals evaluated. Efficiency Indicators: % of Time-To-Inform on time. % of number of (successful) redress challenges upheld / total number of proposals evaluated. 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.

C - Contracting

Main control objectives: Ensuring that the most promising projects for meeting the policy objectives are among the proposals contracted; Sound Financial Management (optimal allocation of the budget available); Compliance; Prevention of fraud and other horizontal priorities (ethics, gender balance, security aspects).

Main risks It may happen (again) that...	Mitigating controls	coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
. The beneficiary lacks operational and/or financial capacity to carry out the actions. Procedures do not comply with regulatory framework. The evaluation stage has not detected a potentially fraudulent proposal/beneficiary. The project implementation might not comply with Ethics requirements. Sensitive/classified information in future deliverables of a selected projects might not be handled with the adequate Security measures.	Validation of beneficiaries (financial capacity checks on demand). Systematic checks on operational and legal aspects performed before signature of the grant agreement. Risk assessment and risk-based checks before the grant agreement signature and reinforced monitoring flagging if necessary. Ad hoc anti-fraud checks for riskier beneficiaries. Signature of the grant agreement by the AO. Financial verification where necessary. An ethics review is carried out systematically in all HE calls, starting with an ethics pre-screening, which results in detailed screening or assessment if necessary. Ad hoc security checks and screenings. Security review is carried out systematically in all HE calls, starting with pre-screening, which may result in detailed security scrutiny.	100% of the selected proposals and beneficiaries are scrutinised. Coverage: 100% of draft grant agreements. Depth will be differentiated following the conclusion of the risk assessment. Controls implemented when justified by the call/proposal content.	**Effectiveness**: Number of grants signed. **Efficiency Indicators**: % of Time–to-grant on time Average Time–to-grant

D – 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	Coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
The actions foreseen are not, totally or partially, carried out in accordance with the technical description and requirements foreseen in the grant agreement (for examples deliverables, open access to results and publications,...). The amounts paid exceed what is due in accordance with the applicable contractual and regulatory provisions. The cost claims and/or deliverables are irregular or fraudulent. Lack of harmonised approach within the family with the consequence of unequal treatment of the beneficiaries. Ethics requirements are not fulfilled.	Kick-off meetings and "launch events" involving the beneficiaries in order to avoid project mismanagement and reporting errors. Specialized webinars targeting reduction of errors. **Guidance on reporting for lump sum grants (notion of work package completion).** Specialized aid with web-based tools to inform most error-prone beneficiaries (i.e. SMEs who participate for the first time) about cost calculation practices. Effective external communication about guidance to the beneficiaries (e.g., Funding and Tender portal, info days for the calls, coordinators' days on grant preparation and grant management). Anti-fraud awareness raising training for the project officers. IT Plagiarism detection tool for deliverables. Enhanced coordinated R&I family approach (anti-fraud cooperation; common legal and audit service; comprehensive and common IT system for all the R&I family). Operational and financial checks in accordance with the financial circuits. Operation authorisation by the AO. For riskier operations, reinforced monitoring. Selection and appointment of experts for scientific reviews of intermediate and/or final reporting. If needed: application of Suspension/interruption of payments, Referral of grant/beneficiary to OLAF/EPPO.	**100%** of the projects are controlled, including only value-adding checks. Riskier operations subject to more in-depth controls. **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. High risk operations identified by risk criteria. Red flags: suspicions raised by staff, audit results, EDES, individual or "population" risk assessment. Audit certificates required for any beneficiary claiming more than: EUR 325 000 (Horizon 2020). EUR 430 000 (Horizon Europe) **except lump sum grants).**	**Effectiveness:** Number of payments (interim and final). **Efficiency:** Time-to-pay: % of payments (in value) made on time. Time-to pay: Average number days net/gross + suspension days. **Qualitative Benefits:** Projects are executed and produce benefits for the community.

Overall economy for ex-ante control

Main risks It may happen (again) that…	Mitigating controls	coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
			Economy (The estimation is established for the grant process, which includes Horizon 2020, Horizon Europe and Euratom). a. Estimation of cost of staff involved in the ex-ante checks: -Programme management and monitoring; -Financial management; -Budget and accounting; -General Coordination incl. Strategic Programming and Planning, internal control, assurance and quality management; -Anti-fraud; -Development and support of IT systems linked to managing funding programmes. b. Estimation of other costs linked to ex-ante checks: Cost of experts; Costs of IT external contracts of CIC. Details of the estimated cost of controls related to shared/pooled control activities carried out by REA and hosted by DG R&I (Common Implementation Centre including Common Audit Service) for the Research and Innovation family are reported in the Annual activity reports of REA and R&I.

2. 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	coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
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. Lack of consistency in the audit strategy within the family. 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.	Common Ex-post control strategy for the entire Research and Innovation family (Horizon 2020 and Horizon Europe), implemented by a central service ((Common Audit Service (CAS) part of the Common Implementation Centre, DG Research and Innovation): - 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. - Calculate the representative error rate for the R&I programme. - Additional sample to address specific risks. - When relevant, joint audits with the Court of Auditors Multi-annual basis (programme's lifecycle) and coordination with other AOs concerned. Validate audit results with beneficiary. In case of systemic error detected, extension to all the ongoing projects run by the audited beneficiary (or closed within two years).	- Common Representative audit Sample (CRaS): MUS sample across the programme to draw valid management conclusions on the error rate in the population. - Research and Innovation risk-based sample, determined in accordance with the selected risk criteria aimed to maximise deterrent effect and prevention of fraud or serious error.	**Effectiveness:** Representative and residual error rate identified. Number of audits finalised % of beneficiaries & value coverage. **Efficiency:** Percentage of implementation of CAS audit plan.

B - Implementing results from ex-post audits/controls

Main control objectives: Ensuring that the (audit and extensions) 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	Coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
The financial recommendations stemming from the ex-post audit are not (timely) implemented.	Systematic registration of audit / control results to be implemented and actual implementation. Guidance on monitoring and reporting on implementation of ex-post audit results. Validation of recovery in accordance with financial circuits.	**Coverage**: 100% of final audit results with a financial impact. **Depth**: All audit results are examined in-depth when calculating the final recoveries. Systemic errors are extended to all the ongoing non-audited projects of the same beneficiary (or closed within two years).	**Effectiveness:** Amounts being recovered or offset. **Efficiency:** Number/value/% of audit results pending implementation, Number/value/% of audit results implemented.

Main risks It may happen (again) that…	Mitigating controls	Coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
Cases of potential fraud detected are not addressed in a timely manner or not addressed at all.	Authorisation by AOSD. Coordination at the level of the R&I family: FAIR committee. If needed: -Notification to OLAF and regular follow up of detected potential fraud. - Reinforced monitoring implemented on ongoing projects.		

Overall economy for ex-post control

Main risks It may happen (again) that…	Mitigating controls	Coverage, frequency and depth of controls	**Cost-Effectiveness indicators** (effectiveness, efficiency, economy)
			Economy (The estimation is established for the grant process which includes Horizon 2020 , Horizon Europe and Euratom). Estimation of cost of staff involved in the coordination and execution of the ex-post audit strategies and in the implementation of audits. Costs of the appointment of audit firms and missions. Details of the estimated cost of controls related to shared/pooled control activities hosted by DG R&I (Common Implementation Centre including Common Audit Service) for the Research and Innovation family are reported in the Annual activity reports of DG R&I.

ANNEX 6 B: EXECUTIVE AGENCIES AND INDIRECT ENTRUSTED MANAGEMENT DG RESEARCH AND INNOVATION – HORIZON 2020 (H2020) AND HORIZON EUROPE (HE)

The Relevant Control System (RCS) covers: (1) the Executive Agencies REA[30], ERCEA[31], and EISMEA[32] for which DG R&I is the lead parent DG[33] and the Executive Agencies CINEA[34] and HaDEA[35] for which DG R&I is a parent DG, (2) cross delegations to other Commission services, (3) the Article 187 Joint Undertakings (Circular Bio-Based Europe (CBE), Clean Aviation (CA), Clean Hydrogen (CH), Innovative Health Initiative (IHI) and Global Health European & Developing Countries Clinical Trials Partnership (EDCTP3)), and (4) the Article 185 entities (Metrology for Horizon Europe and other Partnerships from the legacy).

Overall economy/efficiency for control of entrusted entities (EE) is detailed at the end of stage 5.

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 entity.

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
The establishment (or prolongation) act and the mandate of the entrusted entity could lack clear references regarding the responsibilities of each involved actor.	For EA: The adopted text integrated clarifications on the responsibilities and role of each actor, following the ex-ante evaluation and widespread consultation, ISC etc. In the case of EISMEA, the interim solution adopted by Commission Decision in 2022 allowed the EIC Fund to function in line with the policy objectives of the EIC as an alternative investment fund managed by an external alternative investment fund manager.	**Coverage/Frequency**: 100%/once for the establishment and partial for amendments or extensions.	**Effectiveness**: No major ECA criticism. **Costs**: This stage implies several DGs, doesn't happen regularly and can be very different for each entity. A systematic cost calculation wouldn't give exploitable data

30 REA - Research Execurive Agency

31 ERCEA- European Research Council Executive Agency

32 EISMEA - The European Innovation Council and SMEs Executive Agency

33 Only the operating administrative budget of the Executive Agencies is actually paid by DG Research and Innovation. The operational budget is directly allocated to the Executive Agency. In this case, DG Research and Innovation does not strictly have a financial responsibility, but does still have a responsibility to supervise the Executive Agency in terms of the achievement of its results.

34 CINEA – The European Climate, Infrastructure and Environment Executive Agency

35 HaDEA - The European Health and Digital Executive Agency

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
For partnerships: the valuation method of the in-kind contributions provided by the industry partners is not clear.	In view of the long-term implementation structure of the EIC Fund under indirect management, with the EIB becoming the investor of record, the tasks delegated to the Agency in relation with the fund shall be clearly defined in a Memorandum of Understanding between the Agency and DG R&I. The pertinence of an amendment of the mandate (delegation Act) will also be considered. For JUs and article 185 bodies: the new basic acts adopted for HE included clarifications on the responsibilities and role of actors involved, bodies of the JUs/Metrology Partnership, following the ex-ante evaluation and widespread consultation, ISC etc. For JUs: The Council Regulation establishing the Joint Undertakings under Horizon Europe[36] (hereinafter called Single Basic Act (SBA)) has clarified the basis to calculate in-kind contributions to operational activities (IKOP)[37] and in-kind contributions to additional activities (IKAA)[38]		

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 Internal Control Objectives (ICOs): legality and regularity, sound financial management, true and fair view reporting, safeguarding assets and information, anti-fraud strategy.

[36] Council Regulation (EU) 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014, OJ L 427/17

[37] According to Article 2(8) of the SBA 'in-kind contributions to operational activities' means contributions by private members, constituent entities or the affiliated entities of either, by international organisations and by contributing partners, consisting of the eligible costs incurred by them in implementing indirect actions less the contribution of that joint undertaking and of the participating states of that joint undertaking to those costs'

[38] According to Article 2(10) of the SBA 'in-kind contributions to additional activities' means contributions by the private members, constituent entities or the affiliated entities of either, and by international organisations, consisting of the costs incurred by them in implementing additional activities less any contribution to those costs from the Union and from the participating states of that Joint Undertaking'

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	JUs: • Safeguards are included in the Financial Framework Partnership Agreement (FFPA) • Adoption/update of the anti-fraud strategy, financial rules and other relevant documents for internal control purposes SBA sets out the obligation for JUs to operate back-offices arrangements EA: • Delegation to the Executive Agencies was subject to the DGs ensuring that the agency has the capacity to manage the newly delegated tasks. The agencies have prepared a readiness assessment. • In this assessment the EA Director has given assurance that the agency has sufficient staff, that the internal control systems and procedures, the accounting systems and IT tools and administrative procedures have been introduced in the agency in accordance with the rules of sound financial management in order to ascertain the achievement of all internal control objectives (Art. 32(2) FR), including the legality and regularity of the underlying operations. • EISMEA needs to update its control and anti-fraud strategies to reflect specificities of the EIC programme, perform an assessment of the internal control components and complete its internal guidance for the evaluation process. General: 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 and Innovation family (R&I Audit Network (RIAN), CIC working group on ex-ante check) in order to harmonize the IC framework Review of audit reports (Internal Audit Service, European Court of Auditors)	**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 entity is granted budget autonomy, without significant delays (for EDCTP3 in 2023)

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)
The Commission is not informed of relevant management issues encountered by the entrusted entity in a timely manner 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.	Delegation Act/ Financial Framework Partnership Agreement/etc. specifying the control, accounting, audit, publication, etc. related requirements – incl. the modalities on reporting back relevant and reliable control results; including also triennial evaluation for EA. For JUs, according to Article 171(4) The Commission shall carry out an interim and a final evaluation of each Joint Undertaking feeding into the Horizon Europe evaluations, as specified in Article 52 of the Horizon Europe Regulation. For 185 Initiative, according to article 18(1) of the Council Decision setting out Metrology Partnership, 'The Commission shall conduct an interim evaluation and a final evaluation of the Metrology Partnership in the framework of the Horizon Europe evaluations, in accordance with Article 52 of Regulation (EU) 2021/695, with the assistance of external independent experts selected on the basis of an open and transparent process'.	**Coverage**: 100% of the entities are monitored/supervised. **Frequency**: key KPI's reported on a regular basis, regular steering committee or Governing Board meetings, annual reports (AAR and operational reporting), evaluation reports. In case of operational and/or financial issues, appropriate mitigating measures are available and should be used	**Effectiveness:** number of critical IAS/ECA findings
The implementation of the Horizon 2020 and Horizon Europe framework programmes (procedures, monitoring arrangements, communication with beneficiaries, budget planning, etc) is not consistent within the Research and Innovation family and with the 7 years framework programmes' overall objectives.	Membership of the Governing Boards (JUs – 50% voting rights) or the Steering Committees (EAs); positions of responsibility are filled with seconded Commission staff (EA) For EAs: A new framework of supervision has been prepared by central services (BUDG, HR, SG) and reflected in the draft MoUs (general provisions) as well as in the EA Guidelines. This new framework of supervision clarifies the respective responsibilities of the lead parent DG, of the parent DGs delegating budget (e.g., R&I for HE) and other parent DGs. The supervision framework will be further detailed by the CIC.	Coverage/ Frequency: 100% Depth: All the underlying H2020 and Horizon Europe implementation tools (procedures and monitoring arrangements) are defined and developed at family level.	

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
	The respective parent DGs are represented in the agencies' Steering Committee meetings. For Horizon Europe a Single basic act for JUs has been adopted. 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. Management review of the supervision results. If appropriate/needed: - reinforced monitoring of operational and/or financial aspects of the entity - potential escalation of any major governance-related issues with entrusted entities The Common Implementation Centre (CIC) in Research and Innovation provides all the members of the Family with harmonised procedures, guidance and IT tools. DG Research and Innovation centralises the budget planning and the monitoring of the Horizon Europe and Horizon 2020 budget implementation. The operating rules for the Common Implementation Centre have been clarified in Commission Decision C(2021)4472. The CIC includes a Common service for Executive Agencies and funding bodies which ensures the design and coordination of the policies for the implementation of the R&I programmes by Executive Agencies (EAs), Joint Undertakings and other funding bodies and oversee their governance and operations. For EISMEA, and in particular for the supervision of the EIC Fund related activities to be carried out by the Agency, DG R&I has required a confirmation from EISMEA of the timely reception and analysis of a list of relevant reports and other documentations, to be provided by the EIC Fund and its AIFM.		

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)
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. Bad cash forecast leading to the Commission paying too much compared to the Entrusted Entity's needs In times of shortage of credits, the budget appropriations are not optimised with the current needs within the family	Delegation Act/ Financial Framework Partnership Agreement /etc specifying the control, accounting, audit, publication, etc related requirements – including reporting Management review of the supervision results. Standard procedures for the validation of all payments and recovery of non-used operating budget subsidy The role of the CIC in what concerns the administrative budget of agencies is restricted to REA, ERCEA, EISMEA Good internal communication/coordination to ensure that issues are known and dealt with (see stage 3) Family level budget coordination in DG Research and Innovation	**Coverage**: 100% of the contribution payments. **Frequency**: following the rhythm of the payments There is a review before each payment is made. However, the depth will depend on identified issues and on the body involved.	**Effectiveness**: number of critical IAS/ECA findings

Stage 5: Audit, evaluation and 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)
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	Delegation Act/FFPA/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 the bodies for which recourse to new management modes has been	**Coverage**: sample as needed (e.g., random/representative, value-targeted, risk-based). **Frequency**: whenever necessary or foreseen in the relevant rules The **depth** depends on the type of entity and the level of risks assessed.,	**Effectiveness**: Statements received from entrusted entities are included in DG Research and Innovation's assurance building (exceptions are noted at least in the AAR) IAS, ECA reports are analysed for major issues

Main risks It may happen (again) that…	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
on the Commission's governance reputation and quality of accountability reporting.	done and gives a separate opinion (leading to separate discharge) for JUs and EAs for their administrative budget. Harmonised ex-post audits (common audit strategy for Horizon 2020 and Horizon Europe), common audit service- potential escalation of any major governance-related issues with entrusted entities For EISMEA, the HE MoU will clarify the reporting obligations with regard to the EIC fund and DG R&I will issue clear instructions. Exchange of relevant anti-fraud information about shared beneficiaries within the Research and Innovation family For Executive agencies, scrutiny of relevant reports from: the Discharge Authority from European Ombudsman (in cooperation with the unit in charge of relations with the European Ombudsman), OLAF (in cooperation with the unit in charge of audits and relations with OLAF), European Public Prosecutor Office (in cooperation with the unit in charge of relations with EPPO) Interim evaluations by independent experts of achievement of policy objectives; triennial evaluation of the EA	Annual report of the ECA on all JUs.	

Overall benefit and economy/efficiency for control of entrusted entities

			Overall Economy/efficiency Estimation of cost of staff involved in the supervision (in stages 2 to 5) per (type of) entrusted entity under the annual budget amount entrusted to the entity.

ANNEX 6 C: INNOVFIN (THE H2020 FINANCIAL INSTRUMENT)

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

As of year 2021, this fund has been in legacy mode.

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: 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 H2020 WP) with an annual budget Inter-service consultation of relevant DGs (horizontal and operational) Consultation of the H2020 Advisory Group on Access to Risk Finance Formal adoption by the Legislative Authority (for the Regulation), by Commission decision (for the DA), by the Member States in a Comitology procedure (for the AWP) and by the Budgetary Authority (for the annual budget). Regular evaluations (see Stage 3)	If risk materialises, the Financial Instrument would be irregular. Theoretical impact 100% of the funds involved and significant reputational consequences. *Coverage /frequency:* 100%	**Effectiveness:** Where applicable, **opinions** by advisory bodies (recommendations, actions taken)
b) The Delegation Agreement is inadequate in coverage of operational and management provisions (RAP art. 217 & 222-225)	b) The main principles were agreed with the IFI in the FAFAs (managed by ECFIN)		

Main risks ***It may happen (again) that…***	**Mitigating controls**	**How to determine coverage frequency and depth**	**Cost-Effectiveness indicators** (effectiveness, efficiency, economy)
c) The selection of the IFI is not in line with FR & RAP criteria, especially re: 'alignment of interests' (FR art 140.2e)	c) EIB and EIF were pre-determined in accordance with FR art. 58.1c. They were also chosen in order to ensure continuity between the Seventh Framework Programme (FP7) and H2020.	*(see above)*	**Effectiveness**: IAS and ECA reports are analysed for major issues
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 continue working with the EIB and EIF, since these had managed RSFF/RSI well and therefore had demonstrated that they had the experience required. The negotiations with EIB/EIF for InnovFin focussed on the market gaps to be addressed, but also ensured that the necessary administrative capacity existed.		
e) The RSM (Risk-Sharing Mechanism) is too generous to the IFI (risk of unbalanced risks)	e) *Same controls as for a) above* 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 contracted FIs and FRs 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'*	a) Responsibility for the call, for evaluating, proposing and selecting FIs, lies with the IFI (the FIs do not perform calls). Due diligence by the IFI, which checks as part of the evaluation that banks are not registered in tax havens etc. Redress procedure for FIs not selected (part of EIF's and EIB's evaluation procedure)	*Coverage / frequency:* determined by the IFI/FIs in accordance with the Delegation agreement *Depth:* determined by the IFI/FIs in accordance with the Delegation agreement	**Effectiveness:** Number of appeals to the selection decision (redress procedure) Number of cases obtaining redress

Main risks *It may happen (again) that…*	Mitigating controls	How to determine coverage frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
b) The design of the accounting and reporting arrangements would not provide a True & Fair View c) the remuneration (structure and/or level) of the IFI[39], 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)	Implementation of various controls by the IFI/FIs in accordance with the FAFA and Delegation agreement EIB's control strategy is presented to the Commission Ex-ante controls by IFIs at "contracting" stage – EIB has a large department with experts in specific technology areas who check ex-ante that the proposed projects for direct loans are eligible, excellent science and financially viable. An Eligibility Committee, managed by the Research and Innovation "Designated Service" (DS), is consulted on compliance with the eligibility criteria, before attribution of every direct EIB loan. On-the-spot verifications by IFIs – a "monitoring team" visits FRs on a needs basis during project implementation. A monitoring visit may also be made to an FI, if necessary. Ex-post controls[40] by IFI of project implementation: 100% checks of deliverables plus aggregated financial reporting to the Commission, including on loans called in. The results are reported to the Commission in the annual *"Summary report on audit and controls"*. Internal audits by IFI's IA department. Evaluation (interim and ex-post) of compliance with the policy objectives (impact of projects etc.) performed by independent experts. The interim evaluation for InnovFin was finalised and published in 2017. b) Separate records per Financial Instrument are to be kept by the IFI; and harmonised reporting has been required by the Commission. c) Fees and incentives are defined in the FAFA and the Delegation agreement, including an overall cap.	*On-the-spot verifications:* On a risk basis (during project) c) Assessment of the statement of expenses	**Efficiency:** Time to publication of selection results Time to contract **Effectiveness:** On-the-spot monitoring visits **Effectiveness:** Percent of loans called in c) **Economy:** Remuneration and costs for actually managed funds (compared to benchmark)

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

[40] i.e. after the signature of the loan.

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)**
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 b) Internal control weaknesses, irregularities, errors and fraud are not detected and corrected by the IFI (and the (sub)FI), resulting in the EU funds not achieving the policy objectives and not complying with applicable regulations c) The IFI does not report information that Research and Innovation considers crucial d) The Financial Instrument	a,b) Monitoring and supervision of the IFI/FIs is organised formally through the InnovFin Debt Steering Committee. Regular reporting (mid-year, annually and ad hoc) by the IFI to the Commission "Designated Service" on operational and financial performance and administrative costs. Annual reporting: Financial statements; Management declaration; Summary report of audits and controls; independent (external) audit opinion. *In case of a key issue (weak reporting, negative audit opinion, high risk operations, etc)*: Reinforced monitoring and supervision, case/risk-based audits. *If needed:* The Commission has the right to suspend or interrupt payments, or even apply the exit strategy (winding-up) Referring IFI/FI to OLAF c) Annual report has to be audited by an independent auditor, who also reports on the control system d) The H2020 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. e) The reporting and accountability "chain" builds up from the sub-FI, to the FI, to the	*Coverage:* 100% of the funding payments to the entrusted entity are controlled	**Effectiveness:** *Success ratios and KPIs for policy objectives* (e.g., "leverage", "co-risk taking", number of FRs supported by the Financial Instrument, disbursement rate) Major issues and potential weaknesses in the Research and Innovation Directors' report brought to the attention of the Director General. critical audit findings Number of cases submitted to OLAF **Efficiency** Timely reporting by the International Financial Institution **Cost-Effectiveness:** Total cost of monitoring and supervision by Research and Innovation over value delegated Management fees over value delegated The sum of the total cost of monitoring/supervision by Research and Innovation and management fees, over value delegated **Benefits:** value of the funding provided and leverage, as well as scientific excellence (innovation) **Losses:** e.g., write-offs of equity/loans, loan guarantees called

Main risks *It may happen (again) that…*	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
transactions lead to contingent liabilities for the EU budget e) The governance chain between the responsible service and the accountable parties involved is unclear (Commission, IFI, FIs, sub-FIs and FRs)	IFI, to the Designated Service in the accountable DG. Overall it is organised by DG BUDG for the whole Commission, in line with the Financial Regulation.		

ANNEX 7: Specific annexes related to "financial management"

1. Horizon 2020 implementation model and key role of the Common implementation Center and Common policy Center

The Common Implementation Centre (CIC):

- designs the strategy and provides the framework for the coherent, effective and simplified implementation of EU R&I programmes.
- provides comprehensive and client-oriented services and advice on legal, audit, business process and IT issues.
- provides support to Commission services in charge of the supervision of the Executive Agencies and the funding bodies implementing EU R&I programmes, and plays a coordination role and promotes a consistent approach among those services.

The CIC drives the digital transformation and harmonises project life-cycle management across the R&I family to maximise efficiency gains and synergies between EU entities and programmes. It provides data and knowledge to support policymaking and to stimulate the exploitation of results of the Framework programmes.

The Common Policy Centre (CPC) steers and co-designs, together with other directorates and Commission services in a collegial way, an overarching strategy and framework to invest in the EU's resources and to improve regulatory framework conditions for Research and Innovation.

The CPC coordinates programming and planning, programme analysis, monitoring and evaluation, budget and horizontal questions relating to partnerships and missions. The Directorate also steers activities related to research and innovation strategic economic analysis, foresight and innovation-friendly regulation. It coordinates data and knowledge management activities together with the Common Implementation Centre.

Since 2021, it steers the co-creation of the Draft Budget for Horizon Europe and Euratom, and illustrates the R&I budget during the inter-institutional negotiations. Throughout the year, the Directorate steered all the budget forecast exercises and took all possible measures to achieve an optimal budget implementation rate of more than 99,99%, both in commitment and payment appropriations at the end of 2022.

The aim of the Commission decision on the Horizon Europe governance adopted in June 2021[41] is to deliver better and more efficiently on the Commission political priorities. At service level, the enhanced role of the Research Budget Network (RBN), gathering all implementing and policy entities involved in Horizon Europe, facilitate the co-creation and final adoption of all budgetary aspects of the programme.

[41] C(2021) 4472 final

2. Audit coverage

Seventh Framework Programme (FP7)

The audit coverage for FP7 is the same as the one presented in the AAR 2021 because all Common Representative sample items were closed in 2021.

Horizon 2020By the end of 2022, **the Research and Innovation Family** audited 4 060 participations, covering 58.26% of total H2020 expenditure to date.

The percentage of H2020 expenditure covered by the audits (58.26%) refers to the value of the participations of the audited beneficiaries. It includes both fully audited participations (3.77%), also referred to as the 'direct' coverage, and the non-audited participations, also referred to as the 'indirect' coverage, which after the full treatment of audit results, are clean from systemic errors (54.49%).

DG Research and Innovation: In April 2021 a large number of actions, formerly managed by DG Research and Innovation, were transferred to other stakeholders of the Research and Innovation Family. As a result, the number of audited actions directly managed by DG R&I has decreased significantly, which does not allow a complete analysis of the coverage.

3. Cases of flat rates > 7%

There were no cases of flat rates > 7% for indirect costs in 2022[42]. According to the Horizon 2020 and Horizon Europe Rules for Participation[43], indirect eligible costs are determined by applying a flat rate of 25% of the total direct eligible costs. It is the basic act that derogates from the Financial Regulation.

4. Efficiency of controls (additional indicators)

Implementation of ex-post audit results

Implementation rate of FP7 ex-post audit results and extrapolations in 2022

On a cumulative basis, for the duration of the Seventh Framework Programme (FP7)[44] the implementation rate of the Seventh Framework Programme (FP7) audit results by the end of December 2022 was 97.6% (in terms of the number of audited participations). The respective rate for extrapolation by the end of December 2022 was 86.72% (based on the number of contracts analysed).

Completion rate of Horizon 2020 ex-post audits in 2022

[42] FR Article 181.6

[43] Article 29 of Regulation (EU) No 1290/2013 of the European Parliament and of the Council of 11 December 2013 laying down the rules for participation and dissemination in "Horizon 2020 – the Framework

[44] Source: ASUR application (dataset extracted on 07/02/2022).

The overall target (most probable scenario) in the Horizon 2020 Audit Strategy for 2022 was 611 audited participations. By 31 December 2022, the audits of 633 participations were closed, (completion rate 103.6%).

Implementation rate of H2020 ex-post audit results and extrapolations

Cumulatively, for the Horizon 2020 programme, DG R&I has processed 92.77% of both the audit and the extensions[45]. Details are depicted in the following table.

Table 1: Horizon 2020 implemented audit results

Number of implemented audit results (cumulative from start of MFF)					
DG R&I	**Audit results processed**	**% Audit results processed**	**Audit results pending**	**% Audit results pending**	**Total**
Audits	77	92,77%	6	7,23%	83
Extensions	77	92,77%	6	7,23%	83
Total	**154**	**92,77%**	**12**	**7,23%**	**166**

In 2022, 86.67% of the audit results were implemented within the target period of 6 months (26 out of 30 results). Details of the progress are depicted in Table 2.

Table 2: Time to implement audit results (2022)

Time to implement closed audit results in financial year 2022					
DG R&I	**0-6 months**	**% of total number (0-6 months)**	**above 6 months**	**% of total number above 6 months**	**Total**
Closed projects	**7**	**87,50%**	**1**	**12,50%**	**8**
Negative adjustments with recovery	0	N/A	0	N/A	0
Negative adjustments without recovery	0	0,00%	1	100,00%	1
Positive or zero adjustment	7	100,00%	0	0,00%	7

[45] The number of audits and extensions decreased sigbificantly after the delegation of activities to Executive Agencies in 2021.

On-going projects	**19**	**86,36%**	**3**	**13,64%**	**22**
Negative adjustments	14	87,50%	2	12,50%	16
Positive or zero adjustments	5	83,33%	1	16,67%	6
Total	**26**	**86.67%**	**4**	**13.33%**	**30**

5. Main output indicators for sound financial management and fraud risk management set in the Management Plan 2022

Objective: The authorising officer by delegation has reasonable assurance that resources have been used in accordance with the principles of sound financial management and that cost-effective controls are in place which give the necessary guarantees concerning the legality and regularity of underlying transactions			
Main output in 2022:			
Output	**Indicator**	**Target**	**Results**
Effective controls: Legal and regular transactions	Estimated risk at payment and at closure for Horizon 2020 grants	As close as possible to 2%	Current overall detected Representative Error Rate: 2,71% (cumulative, all years until now) Current overall Residual Error Rate: 1,67% (cumulative, all years until now, all services) and 1,71% for DG R&I
	Estimated risk at payment and at closure for Horizon Europe grants	Below 2%.	No representative error rate for Horizon Europe is available in 2022 as the ex-post audit campaign for the Programme will start at the earliest end of 2023.
Effective controls: Safeguarded information	Number of security incidents with significant impact on the confidentiality, integrity or availability of Information Systems, reported during the year	No incident with significant impact	No incident with significant impact
Efficient controls	Timely Payments	100% of the total amount paid on time	97%

	Operational budget execution	100% of operational commitment and payment appropriations (C1)	100%
Cost of controls, Effectiveness control	Overall estimated cost of controls for DG R&I	Below 3 % of funds managed	0.95%

Objective: The risk of fraud is minimised through the application of effective anti-fraud measures and the implementation of the Commission Anti-Fraud Strategy (CAFS)([46]) aimed at the prevention, detection and correction([47]) of fraud.

Main outputs in 2022:

Output	Indicator	Target	Results
Enhanced data analysis	Selection of beneficiaries for risk-based audits Increased number of risk-based audits	Continuous	Continuous
Fraud Prevention and Irregularities in Research (FAIR) Committee	Number of meetings	2 by 31 December 2022	2 FAIR Committee meetings were held on 6 April and 12 October 2022.
R&I family's fraud risk assessment (grants), within the FAIR Committee.	Fraud-proof Horizon Europe	31 December 2022	The R&I Family Fraud Risk Assessment for Grants – 2022 Update was endorsed by the FAIR Committee on 22 June 2022
Increased level of staff awareness about the Commission ethics rules and ethical issues, and in particular the risk of conflicts of interests	Newcomers have received relevant information on ethics obligations as part of the welcome package.	YES	YES
Increased level of new staff awareness on anti-fraud	Newcomers dealing with grants have followed an anti-fraud training	YES	YES (No newcomers dealing with grants in 2022)
Updated DG R&I Anti-Fraud Strategy (excluding grants)	Publication of the document	31 December 2022	15 December 2022 (Ares(2022)8711892)

([46]) Communication from the Commission 'Commission Anti-Fraud Strategy: enhanced action to protect the EU budget', COM(2019) 196 of 29 April 2019 – 'the CAFS Communication' – and the accompanying action plan, SWD(2019) 170 – 'the CAFS Action Plan'.

([47]) Correction of fraud is an umbrella term, which notably refers to the recovery of amounts unduly spent and to administrative sanctions.

6. Supervision arrangement for Executive Agencies (EA)

The framework of supervision of the Executive Agencies was complemented in 2022 by the signature of the general Memorandum of Understanding (MoU) provisions by all six Executive Agencies at the beginning of 2022. In the second half of 2022, four out of the five Executive Agencies concerned signed the MoU on Horizon Europe. The HE MoU with EISMEA is scheduled to be signed in Q1 2023 in order to detail the precise roles and responsibilities of the different actors. Such a MoU will be further amended once the long-term solution (indirect management mode) is finalised[48]. The new guidelines for the establishment and operation of Executive Agencies financed from the EU budget and other sources were adopted by the College on the 15th of December 2022, C(2022)9328.

Building on the Guidelines and the MoUs, as well as the indications given by the IAS in their report on the matter, the CIC will further detail the supervision framework of the Commission. This framework defines the supervision of Executive Agency as the interaction between the Commission and the Agency aimed at steering and monitoring the Agency in order to ensure that it achieves its goals effectively and efficiently, in compliance with rules and regulations.

The supervision of the Executive Agencies is the responsibility of all parent DGs through their participation in the Steering Committees. However, to avoid the duplication of efforts, the lead parent DG has specific responsibilities in relation to the monitoring and supervision of horizontal functions and compliance with rules and regulations. These specific responsibilities are performed in close coordination with the other parent DGs and the result of these supervision tasks is communicated to the other parent DGs.

The Executive Agency's Director ensures that the members and observers of the Steering Committee receive all relevant information and reliable control results needed for the appropriate fulfilment of their mandates. DG Research and Innovation is the lead parent DG for three EAs, the ERCEA, the REA and the EISMEA. The Director-General of DG Research and Innovation is chairing the Steering Committee meetings for these agencies. For the other two EAs, CINEA and HaDEA, for which DG Research and Innovation is not the lead parent DG, the Director responsible for the operational area concerned represents DG Research and Innovation in the Steering Committee.

The annual planning and reporting cycle forms the basis of the monitoring and supervision of the Executive Agencies' activities by the Steering Committee. In particular, the Annual Work Programme contains an obligation of assessment of risks and risk exposure, and it provides several key performance indicators. These constitute the benchmark against which the

[48] The Commission is working on the long-term implementation structure for the EIC Fund under indirect management based on a contribution agreement under which the EIB would become the investor of record of the EIC Fund while the Fund itself would be placed under indirect management. The structure and operational elements are currently being negotiated between with Commission services and the EIB. First negotiations with the EIB took place in 2022 and more are planned in 2023.

In the meantime, the EIC is fully operational under an interim structure as an alternative investment fund managed by an external alternative investment fund manager.

performance of the EAs is monitored through its interim reporting and the Annual Activity Report.

Other tools for the supervision are the monitoring of activities through the participation in the Steering Committee, the analysis of the reporting produced by the Agencies complemented by other relevant sources of information such as the report from the Discharge Authority, ECA, IAS and OLAF, the organisation of regular and ad-hoc meetings, and coordination between (lead) parent DGs, Central Services and Executive Agencies in order to promote harmonisation of documents and procedures between the Agencies and identify the best working practices. In case of serious concerns and as a last resort with respect to the operations of the Agency, the parent DG(s) may carry out on-the-spot checks in the Agency.

7. Supervision arrangements for InnovFin financial instruments implemented by EIB/EIF

The principles and details regarding the supervision of the budget entrusted to the EIB and EIF for InnovFin were established in 2015 along with the respective internal control system aiming to ensure that the achievement of operational objectives respects the principle of sound financial management. They were revised in January 2023 to consider the revised underlying financial rules and the organisational changes following the creation of the agency.

This includes a supervision strategy and procedure as well as relevant key documents. This is complemented by the control strategy that EIB is required to present to the Commission according to the Delegation Agreement. The Director-General of DG Research and Innovation approved the EIB supervision strategy and control procedure in early 2016.

In accordance with the Delegation Agreement, both entrusted entities (EIB and EIF) submit to the Commission for each financial instrument the following documents:

- management declaration of assurance annexed to the financial statements in the form defined in the Financial and Administrative Framework Agreement,
- summary report on audits and controls carried out in the period in question, including an analysis of the nature and extent of errors and identified weaknesses in systems if any, and any corrective actions taken or planned,
- independent audit opinion on the management declaration and the summary report on audits and controls.

8. Costs of controls in direct grant management

Following DG BUDG guidance[49], the costs of the controls in direct grant management is assessed based on the costs of the different control stages. The overall assessment is

[49] DG BUDG Guidance on the estimation, assessment and reporting on the cost-effectiveness of controls - Updated edition – December 2020

obtained from the ratio between all those costs and the total amount of payments for grants in the year.

The costs of control for direct grant management (3,59%) can be divided in three main categories of costs:

- Costs of controls in DG Research and Innovation (2.04%),
- Costs of services provided by the Common Implementation Centre (CIC), which is hosted by DG Research and Innovation (0.64%),
- Costs of common support services provided by REA for proposal evaluation/selection hosted by REA and presented in REA's AAR. *(0.91%)*

Costs of controls in DG Research and Innovations

The costs of controls in DG Research and Innovation, which are estimated at 2.04% of payments (EUR million) are the sum of:

a) Direct costs dedicated to control activities (1.89%)[50]
b) Costs of horizontal related control tasks not attributable to a single relevant control system (0.15%)[51].

Costs of ex-ante and ex-post services provided by the Common Implementation Centre, which is hosted by DG Research and Innovation

The costs of ex-ante and ex-post services provided by the Common Implementation Centre represent 0.64% of the total Horizon 2020 and Horizon Europe and EURATOM implemented budget (in terms of payments) and is stable compared to 2021 (0.68%)

Table Costs of ex-ante and ex-post services provided by the Common Implementation Centre, which is hosted by DG Research and Innovation

[50] These costs are presented in the first line of table Y Overview of DG R&I estimated cost of controls at Commission (see below sub-section 8). They are composed of staff costs (EUR 3.03 million) and costs of experts in charge of the monitoring of grants and of ethics checks (EUR 0.1 million)

[51] These Costs of horizontal related control tasks not attributable to a single relevant control system are presented table Y Overview of DG R&I estimated cost of controls at Commission (see below sub-secrtion 8). They regroup costs of general coordination (Strategic Programming and Planning, Internal Control, Assurance, DG R&I budget and accounting and DG R&I anti-fraud activities)

Table Costs of ex-ante and ex-post services provided by the Common Implementation Centre, which is hosted by DG Research and Innovation					
Direct grant management	**Costs (in EUR million)***			**2022 Grants payments for the R&I family (in EUR million)****	**Overall rate** (total costs/total amount paid)
	Internal costs	External costs	**Total**	Total amount	**%**
				H2020 and HE	
Ex-ante controls (mainly Common services in IT systems and operations)	7,23	31,64	**38,86**	11.273,56	**0,34%**
				H2020	
Ex-posts audits	*9,12*	4,02	**13,14**	4.441,56	**0,30%**
TOTAL	**16,34**	**35,66**	**52,00**		**0,64%**

*data from Atlas 13.01.23 for internal costs and CIC budget execution for external costs (IT Costs related to eGrant for the R&I family and ex-post audit costs pay to audit firms.

**data from corda 01.2023

These figures on costs of controls are estimations and should be read with caution.

Data from the DG Human Resources' IT tool "Activity and Task Logging for Allocated Staff" (ATLAS) was used to estimate the cost of control in grant management both for DG Research and Innovation and the Common Implementation Centre.

The Full Time Equivalents (FTEs) used for the calculation were extracted from ATLAS on 10/01/2023 and the average FTEs costs used are those communicated by DG BUDG, which include building and other administrative and ICT costs.

The Atlas activities used were those identified by DG BUDG in its guidance[52] for the estimation of the costs of controls for DG Research and Innovation and the CIC: Programme management and monitoring, Financial Management, Budget and accounting, General Coordination including Strategic Programming and Planning, Internal Control, Assurance and Quality Management, Anti-fraud, Development and Support of IT systems linked to managing funding programmes.

External costs for the Common Implementation Centre include IT costs as well as ex-post audit costs paid in 2022.

Costs of ex-ante controls direct grant management in DG R&I_is composed of related staff costs of control for programme management and financial control and cost of expert monitors.

DG R&I costs related to general coordination (including Strategic Programming and Planning, Internal Control, Assurance), to budget and accounting, and to anti-fraud, which are not attributable to a single relevant control system, have been reported separately in table Y under the line "Other: DG-horizontal control tasks not attributable to a single RCS". They represent 0.15% % of DG R&I 2022 payments.

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Cost related to the implementation of ex-post audits

DG Research and Innovation costs related to the implementation of the audit results and extrapolation cannot be identified as such on a systematic basis. They are presented as part of the costs of programme and financial management.

Several Framework Programmes

DG Research and Innovation does not distinguish costs between Horizon Europe, Horizon 2020 and the Seventh Framework Programme (FP7) and EURATOM complementing the research programmes, although their control systems are not fully the same. The value of the indicators depends strongly on the implementation stage of the programme.

Conclusion

According to the three main categories of costs provided above, in 2022 the overall cost of the controls in grant management is estimated at 3.59 % (EUR 6 million in 2022) of the total implemented budget (in terms of payments) in 2022. The small increase compared to last year (3.3%) is mainly linked to the increase of the percentage of REA costs for proposal evaluation/selection.

9. Overview of DG R&I estimated cost of controls at Commission (EC) level

Table Y - Overview of RTD's estimated cost of controls at Commission (EC) level (The absolute values are presented in EUR)

EXPENDITURE The absolute values are presented in EUR

RTD	Ex ante controls***			Ex post controls			Total	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Relevant Control System (RCS) / Other as defined in Annex 6 of the AAR*	EC total costs	related payments Made	Ratio (%)** *(a)/(b)*	EC total costs	total value verified and/or audited	Ratio (%) *(d)/(e)*	EC total estimated cost of controls *(a)+(d)*	Ratio (%)** *(g)/(b)*
Grants direct management	3.164.930,92 €	167.156.035,52 €	1,89%	- €	- €	0,00%	3.164.930,92 €	1,89%
Contributions and/or funds to Entrusted Entities (Executive agencies, Articles 185 and 187 bodies)	5.809.482,93 €	1.015.535.797,40 €	0,57%	- €	- €	0,00%	5.809.482,93 €	0,57%
Financial Instruments EIB/EIF	27.631,31 €	261.497.773,00 €	0,01%	- €	- €	0,00%	27.631,31 €	0,01%
Horizontal control related tasks not attribuable to a single relevant control system	2.338.990,35 €		0,00%	- €	- €	0,00%	2.338.990,35 €	0,00%
OVERALL total estimated cost of control at EC level for expenditure	**11.341.035,51 €**	**1.444.189.605,92 €**	**0,79%**	**- €**	**- €**	**0,00%**	**11.341.035,51 €**	**0,79%**
SHARED/POOLED CONTROL ACTIVITIES (RTD & REA)								
Common Implementation Center - Common Audit Service excluded (only DG R&I)	38.862.768,00	11.273.563.701,65	0,34%	- €	- €	0,00%	38.862.768,00 €	0,34%
Common Audit Service (only DG R&I)		4.441.555.128,33	0,00%	13.139.888,73 €	600.592.193,36 €	2,19%	13.139.888,73 €	0,30%
			0,00%	- €	- €	0,00%	- €	0,00%
Validation services (only REA)	- €	- €	0,00%	- €	- €	0,00%	- €	0,00%
Expert management (only REA)	- €	- €	0,00%	- €	- €	0,00%	- €	0,00%

** if the control costs are not attributable to a single RCS and may relate to a 'mix' of expenditure, revenue, assets/liabilities, etc, they may be grouped*

*** ratio possibly "Not Applicable (N/A)", e.g. if a RCS specifically covers an Internal Control Objective such as safeguarding sensitive information, reliable accounting/reporting, etc*
**** any 'holistic' control elements (e.g. with 'combined' ex-ante & ex-post characteristics) can be reported in the ex-ante column provided that a footnote clarifies this (their nature + their cost). Example: MS system audits in shared management.*

(e) The total value verified and or audited includes EUR 157 million for EURATOM

The overall cost of control for the relevant control systems presented in table Y is below 3% of the implemented budget (0.95%).

10. IAS recommendations

The IAS concluded that the internal control systems in place for the audited processes are effective, except for the observations giving rise to one 'critical' and five 'very important' recommendations detailed in section b below. These recommendations need to be addressed, in line with the agreed Action Plan or by the submission and implementation of an agreed Action Plan.

DG R&I has partially rejected one 'very important' recommendation from the audit on the implementation of the Action Plans for the reduction of the Horizon 2020 error rate and for simplifications to reduce the Horizon Europe error rate (2022) and accepted the related residual risks based on the following: DG R&I considers the establishment of a clear cause-effect relation between individual actions of the plans and related reductions of the error rate as not feasible. Moreover, the measurement of the error rate reduction by ex-post audits comes with a significant delay after the implementation of the actions, since they affect cost statements that are submitted by beneficiaries after these actions and are audited yet much later.

However, following this IAS audit, and based on the original action plans agreed with central services, DG R&I has prepared a reprioritized Action Plan to both reduce the error rate on Horizon 2020 and prevent a high error rate in Horizon Europe. The highest priority has been set on communication, both external and internal. Dedicated webinars and trainings addressed to beneficiaries, in particular most error prone beneficiaries, have been organized all along the year for both Horizon 2020 and Horizon Europe. Enhanced trainings on reporting and payments and audit implementation addressed to internal staff have also been organized as part of this communication plan and the Horizon Europe Ex ante controls guidance have been approved and published.

Regarding the increased use of simplified cost options, the European Court of Auditors recently provided feedback following their assessment of 10 lump sum grants. The Commission will discuss the results with the Court in April 2023 and update the lump sum methodology if and as needed, including the audit methodology. Since the start of Horizon Europe, DG R&I has massively improved the support and guidance for lump sums. All relevant information is available online in one place for internal and external users, respectively. This includes all internal and external events of the information campaign. Tools and guidance are continuously improved following the feedback received, for example the detailed budget table and FAQs. In line with the action plan, we launched the first significant wave of lump sum topics in Horizon Europe work programme 2023-2024, with lump sums accounting for up to 23% of the call budget in 2024. On this basis, DG R&I is proceeding with the roll-out of lump sums in Horizon Europe in the years to come. There is agreement that ERC Advanced Grants will use lump sums from 2024, and DG R&I and EISMEA have started to explore the use lump sums for European Innovation Council (EIC) grants. Further increases of lump sums in Pillar 2 will be explored in time for the 2025 work programme. In addition, the preparations for a unit personnel cost scheme are ongoing in view of adopting the necessary Commission decision and adapting IT tools and guidance.

Besides, a questionnaire on costs reporting on Horizon 2020 have been relaunched and the answers provided by beneficiaries have been analysed and will feed future trainings and webinars. Also, a personnel costs wizard for Horizon Europe which will help beneficiaries declaring their personnel costs is currently under development and should be finalized in 2023. Finally, DG R&I is participating in a longer term corporate project led by DG BUDG on the use of artificial intelligence and data analysis to prevent errors.

During 2022, the IAS worked on the following audits in DG R&I:

- IAS Audit on Personal Data Protection for CIC and EAs (**final report issued)**.
- Limited Review on the Implementation of Action Plans for Reduction of H2020 Error Rate and Simplifications to Reduce Horizon Europe Error Rate (**final report issued**).
- IAS Thematic Review on Commission's Corrective Capacity (**final report issued**).
- IAS Audit on the design and early Implementation of EIC in EISMEA, DG R&I and DG CNECT (**final report issued)**.
- IAS Audit on Performance Framework for Research (**final report issued)**.
- IAS Audit on Horizon Europe Governance (**still under implementation**).
- IAS Audit on Preparedness of Horizon Europe Control Strategy in DG R&I **(audit started).**

- IAS Audit on Horizon Europe Grant Management in DG R&I and EAs **(audit started).**

a) Implementation of IAS recommendations

The table below summarises the state of implementation of IAS recommendations at the end of 2022[53]. At the end of this period, DG Research and Innovation had seventeen open recommendations, all within the original deadline (no overdue recommendations). During 2022, DG Research and Innovation / CIC closed 24 recommendations issued by the IAS.

TABLE IAS - 31/12/2022 IAS AUDIT TITLE	Number of Recommendations			
	Total	Closed	Open	
				of which overdue
IAS AUDIT ON IT PROJECT MANAGEMENT AND SOFTWARE DEVELOPMENT	5	4	1 (1)	0
IAS AUDIT ON PERSONAL DATA PROTECTION UNDER THE RESPONSIBILITY OF EXECUTIVE AGENCIES AND THE CIC	3	0	3 (2)	0
IAS AUDIT ON PERFORMANCE FRAMEWORK FOR RESEARCH	7	0	7 (3)	0
IAS AUDIT ON MANAGEMENT AND CONTROL SYSTEMS FOR EUROPEAN INNOVATION COUNCIL	6	0	6 (4)	0
TOTAL	**21**	**4**	**17**	**0**

[1] **DG R&I:** 1 recommendation ("Important")

[2] **CIC:** 3 recommendations - (2 "Very Important" and 1 "Important")

[3] **CIC:** 7 recommendations - (1 "Very Important" and 6 "Important")

[4] **DG R&I:** 6 recommendations - (1 "Critical", 2 "Very Important" and 3 "Important")

b) Critical and Very Important recommendations from audits concluded in 2022 and January 2023

Audit on the protection of personal data under the responsibility of the EACEA, EISMEA, CINEA, REA, ERCEA and CIC (2022)

Rec.n°1) 'Joint Controllership Agreement (JCA) and Joint Controllership (JC) record for Funding and Tenders Portal (FTOP)', rated 'very important', with original due date on 31/03/2023.

A JCA was signed by the joint-controller of processing and the privacy statement. Without a JCA reflected in records and privacy statements, the processing activity is non-compliant with Article 28 of the EUDPR, and roles and responsibilities of the actors may not be clear, leading potentially to considerable reputational damage for the Commission. To address this risk, the Common Implementation Centre (CIC), as the Chair of the eGrants and eProcurement Steering Board (GPSB), should take necessary steps to ensure the urgent finalisation of a JCA and JC

[53] Without prejudice of the conclusions of subsequent follow-up audits by the IAS.

record that cover all parties and all processes for the 2021-2027 Multiannual Financial Framework (MFF).

The implementation of the Action Plan depended on the approval of the joint-controllership record and privacy statement (PS) covering all jointly processed personal data operations via the Single Electronic Data Interchange Area. The joint controllership record and Privacy Statement are not yet approved. Progress has been made and the final comments of the Commission's Data Protection Officer are under the scrutiny of the Chair of the Data Protection Corporate Working Group. Moreover, following the successful roll-out of the eProcurement pre-contracting solution, the eProcurement programme is now preparing to start the corporate roll-out of its contract management solution. In this respect, the eProcurement jointly processed personal data operations will be included in the text of the Joint-Controllership Arrangement.

Rec.n°2) 'Correct legal context for transfers of personal data to third countries', rated 'very important, with due date on 31/03/2023.

The IAS found that in a significant number of cases, personal data of third country participants was automatically transferred through the FTOP to the respective third country authorities and the CIC could not clearly demonstrate that consent was given/obtained for the transfers or that the information was directly provided by the participants to their respective countries. Without a JCA reflected in records and privacy statements, the processing activity is non-compliant with Article 28 of the EUDPR, and roles and responsibilities of the actors may not be clear, leading potentially to considerable reputational damage for the Commission. To address this risk, the CIC, as the Chair of the GPSB, should take necessary steps to ensure the urgent update of the privacy notice to reflect the new record and JCA.

This has been implemented. The transfers of personal data through the Portal to third countries take place exclusively using a proper transfer tool as per the EU Data Protection Regulation 2018/1725. The international transfers that were audited no longer take place: no data of representatives of applicants/beneficiaries will be sent by the Commission/Executive Agencies to the funding agencies in third countries. They are invited to contact themselves their own national institutions, in line with the guidance on complementary funding mechanism in third countries.

IAS Audit on Performance Framework for Research

Rec.n°2) 'Reporting on Horizon Programmes', rated 'very important'.

The data presented in the Commission's 2020 and 2021 Annual Management and Performance Reports (AMPR) was not fully consistent with the information included in the programme statements and was not reliable. The chain of checks and validations did not identify the data inconsistencies before their publication. This was due to the absence of a trail of calculation of the indicators, impairing a double check on the proceedings and the results. If the processes to prepare the contribution to the Commission's AMPR and the programme statements do not ensure that these reports provide consistent and reliable information about the achievement of objectives, the Commission may not correctly inform the external stakeholders about the achievement of its objectives and the results and impact of its policies. This may result in reputational damage. To mitigate these risks, DG R&I should

review the process for verifying the data that feed into the programme performance overviews and programme statements and apply the four-eyes principle. In addition, it should maintain an adequate audit trail for the figures disclosed in the AMPR and the programme statements to enable reperformance of the calculation if needed.

The action plan foresees that, based on verified data, a draft Programme Performance Statement will be prepared by the services in cooperation with the Performance Framework Network. This will be submitted to the Horizon Europe Executive Committee for endorsement.

The fiche of the indicators for the IT tool that contains the meta data will be updated based on the information to be received on the origin of the data. The steps followed for the computation of the indicators will be detailed in a supporting document.

IAS Audit on the design and early implementation of the European Innovation Council in EISMEA, DG R&I and DG CNECT

Rec.n°1) 'Governance framework of the EIC programme', rated 'critical'; the joint (DG R&I, DG CNECT and EISMEA) Action Plan has been finalised and is being implemented.

The design of the governance framework of the EIC programme is not yet finalised, therefore key aspects of governance cannot be implemented or adequately performed (notably supervision tasks, cooperation between the various actors, monitoring of key activities). Some important elements are still missing while others need to be clarified/tailored to the specificities and inherent complexities of the EIC programme. In particular, the Memorandum of Understanding (MoU) between EISMEA and its parent DGs for Horizon Europe (DG R&I and DG CNECT) has not yet been signed. Consequently, the mutual expectations and the relations between the EISMEA and its relevant parent DGs have not yet been formalised, thus leading to unclear roles and responsibilities in various domains, which led to tasks neither clearly described nor adequately performed. Furthermore, no clear rules on the separation of functions have been defined to avoid incompatibility of roles and (appearance of) conflict of interest.

A governance framework that misses key elements (e.g., roles and responsibilities, working arrangements, segregation of roles) jeopardises the effectiveness and efficiency of the decision-making process, and may negatively impact the implementation of the EIC programme. Moreover, resource constraints in DG R&I stemming from the fact that expert staff have been seconded to the agency may lead to inadequate cooperation, supervision, and monitoring of the preparation of the EIC work programme and its implementation. This in turn may result in an ineffective management of the EIC programme, including the EIC Fund, thus affecting the implementation of the Accelerator and in particular its investment component.

To address these risks, DG R&I, EISMEA and DG CNECT should finalise the MoU for Horizon Europe ensuring that it reflects all the key activities performed by EISMEA, including those related to the EIC Fund. Moreover, DG R&I, with the support of the responsible central services, should prepare a proposal to revise the delegation instrument (Commission Decision C(2021)949) in view of the revised governance of the EIC Fund, and clearly define the roles and responsibility of DG R&I and EISMEA towards the management of the EIC Fund (including to analyse the staffing needs related to the capacity of DG R&I to supervise and monitor the EIC programme and EIC fund and align the staffing to needs identified).

DG R&I (and the other auditees) accepted the recommendation and, according to the adopted joint Action Plan, committed to sign a Memorandum of Understanding between EISMEA, DG R&I and DG CNECT, reflecting the roles, responsibilities and cooperation modalities, in particular, those related to the management of the EIC Fund, implementing the interim solution, as well as to revise it after the finalisation of the negotiations for the adoption of the long-term solution (indirect management). DG R&I will also prepare a proposal of Commission Decision to revise the delegation instrument, with a clear definition of the tasks delegated to EISMEA.

DG R&I, with the support of EISMEA, will also finalise the relevant documents (including the contribution agreement with the EIB, the delegation instrument, Conflict of Interest provisions in the Rules of Procedures of the EIC Board, and the quadripartite MoU between the Commission, AIFM, EIB and EISMEA) to address the conflict of interest, including clear definition and attribution of roles and responsibilities of the different actors participating in the EIC Fund governance and precise instructions on conflict of interest/incompatibility.

Finally, DG R&I, with the support of EISMEA, will carry out a documented analysis of the workload and related staffing needs, based on the responsibilities of DG R&I (including the supervision and monitoring the implementation of the EIC programme and to prepare the EIC Work Programme). DG CNECT will be associated for the EIC Work Programme activities and its supervision and monitoring role. This is meant to result in the adoption of an options paper/roadmap to align the level of staffing to the needs identified.

Rec.n°2) 'Roadmap for the transition to the long-term solution for the EIC Fund', rated 'very important'.

In view of the recent developments as regards the EIC Fund management arrangements, there is no roadmap or Action Plan, setting out and detailing the steps to be implemented in DG R&I and EISMEA for the smooth transition to the indirect management mode (including the areas to be further assessed having human resources, legal and financial implications for the effective implementation of the indirect management mode, the timing for the implementation of the different steps, the actors to be involved in the decision-making process and the coordination mechanism to be in place).

The absence of an Action Plan for the timely and effective management of the transition period from direct to indirect management may lead to delays, legal, financial and human resources issues not identified and solved timely, which in turn may negatively impact the implementation of the investment component of the EIC Accelerator.

To address these risks, DG R&I, with the support of EISMEA, and of the responsible central services, should carry out a comprehensive assessment of the implications of the new set up in terms of supervision strategy, control environment, staffing, relations with the key stakeholders. The assessment should also include an evaluation of the resources necessary for DG R&I to be able to exercise its supervisory role on EISMEA. Furthermore, based on the assessment above, DG R&I, with the support of EISMEA, should develop a roadmap or an

Action Plan for the future set-up (and, where necessary, for the transition period), in which the key actions, resources, milestones and corresponding responsible entities are identified.

DG R&I committed to carry out a documented assessment of the implications (for DG R&I and EISMEA) of the new set up (indirect management) in terms of supervision strategy, control environment, staffing and relations with key stakeholders, including the resources necessary for DG R&I to exercise its supervisory role. Furthermore, and on the basis of the guidance of the Commissioners' project group, DG R&I will adopt a roadmap for the long-term set up, including the key actions, resources, milestones and responsible entities, including, as necessary, a further amendment of the MoU and the Delegation Act.

Rec.n°11) 'Assurance building blocks (reporting process and monitoring of the administrative budget), rated 'very important'.

The EIC Fund did not provide or provided with delay to EISMEA and DG R&I the various reports it is required to prepare and communicate to the Commission, or these reports missed relevant information. Moreover, the EISMEA's 2021 annual activity report did not adequately reflect the specificities of supervision of the EIC Fund. Furthermore, no budget analysis (e.g., budget to actual) for the EIC Fund was presented and/or discussed during the EIC Fund Board meetings, nor specifically monitored during the reporting year. In the absence of regular and timely reporting of key assurance-building information, the Commission may not be able to perform effective oversight over the activities of the Fund. Substantive deficiencies in EISMEA's assurance building process weaken the declaration of assurance thus leading to reputational risks for the Agency and the Commission.

Furthermore, in the absence of an adequate monitoring of the administrative budget, the thresholds defined may not be respected, which may ultimately lead to an inefficient use of the EU budget resources. For the fiscal year 2023, depending on the final arrangements decided for the EIC Fund as regards the management mode, DG R&I (with the support of EISMEA, the Alternative Investment Fund manager, under direct management, and/or the EIB under indirect management) should ensure that the tasks and responsibilities related to the monitoring and reporting obligations (including the administrative budget) of the EIC Fund are clearly specified in the key governance documents.

DG R&I committed to clarify the tasks and responsibilities for (EIC Fund) reporting under both the interim solution in 2023 and the long-term solution in the Delegation instrument and in the MoU. These reporting requirements will be part of the 4-party agreement between COM, EISMEA, EIB, AIFM including provisions on the coordination by EISMEA between the grant and investment component.

The final report was received in January 2023. The joint Action Plan has been endorsed by the IAS in March 2023 and actions are already under implementation.

c) Very important recommendations from audits concluded before 2022.

All very important recommendations from before 2022 have been considered as implemented by DG R&I and sent for review to IAS at the end of the year. The conclusion of IAS review has not been received yet.

11. Europen Court of Auditors (ECA) recommendations

a) Court of Auditors' Annual Report for 2021

In the Court of Auditors' Annual Report for 2021, the Court issued five recommendations set out below, which are relevant to DG Research and Innovation. They have all been accepted and are being implemented.

Recommendation 1

Strongly encourage the use of the Personnel Costs Wizard (made available in the participant portal), especially by certain categories of beneficiaries that are more prone to committing errors, such as SMEs and new entrants (for both H2020 and HE grants).

Recommendation 2

Issue guidance to beneficiaries on the specific differences, focusing on the eligibility aspects under HE, compared to H2020 and similar programmes.

Recommendation 3

Improve the existing ex-ante controls (H2020) to identify and eliminate potential ineligible adjustments made to the personnel costs submitted by the beneficiaries, following recalculation of the hourly rates.

Recommendation 4

Further improve the guidance addressed to the independent auditors contracted by the beneficiaries to deliver the Certificates on Financial Statements, to reduce the large number of weaknesses identified in ECA our audits of these certificates.

Recommendation 5

For the next research programme, explore, in line with evolving business needs, the feasibility of extending the functionalities in eGrants for risk assessment and automatic checks, e.g., by exploiting other available data sources to make available, in digital format, additional key data supporting the confirmation of compliance.

The ECA considers that all recommendations from the 2019 and 2020 reports have been fully implemented except recommendation 2 of 2020[54].

[54] Recommendation 2: The Commission should implement actions, including a periodical review of the main causes of error in financial statements, providing guidance on complex issues such as subcontracting rules, and conducting information campaigns in order to reduce the error rate for H2020. It was implemented in some respects.

b) Annual Performance Report 2021

The main theme of this year's report on performance is the mainstreaming of horizontal policy priorities into the EU budget. It assessed whether they had been incorporated in selected EU spending programmes, and whether the Commission applied an appropriate performance framework to measure the EU budget's contribution for such priorities.

As conclusion, two recommendations were issued:

Recommendation 1

The Commission should better incorporate the EU's overarching policy priorities into its performance framework, in particular for gender equality, digital transition and the SDGs, while considering the cost and feasibility of its approach.

Recommendation 2

In addition, it should also improve reporting on cross-cutting policy priorities to show how it makes the most of every euro spent, as well as better highlighting expenditure that contributes to several horizontal policy priorities at the same time.

The report of the audit has been published the 14 November 2022.

Furthermore, the ECA is performing a follow-up on the progress of the recommendations provided at the time of the publication of three reports DG R&I was involved in. In all of them, the assessment of the ECA is in general positive.

c) ECA – Special reports following performance audits

The following performance audits were finalised during 2022:

- **SME internationalisation instruments - A large number of support actions but not fully coherent or coordinated**

The ECA assessed whether the EU policy for SME internationalisation is supported by a coherent and coordinated strategy and whether the Enterprise Europe Network and the Start-up Europe initiative successfully contributed to the internationalisation of SMEs.

According to the ECA while the Commission has put in place many actions to support SME internationalisation, they lack sufficient coherence and coordination. The Enterprise Europe Network has met its targets, but needs more visibility and better coverage in third countries. Start-up Europe only addresses the needs of the start-ups in the short term and lacks sufficient monitoring and coordination.

The Court issued three recommendations summarized below but none of them are attributed to DG R&I:

Recommendation 1

Increase awareness, coherence and sustainability of the actions on the support to SME internationalisation;

Recommendation 2

Increase the visibility of the Enterprise Europe Network, its cooperation with similar programmes, its training activities and geographical coverage;

Recommendation 3

Improve the monitoring and long-term effectiveness of Start-up Europe.

All the recommendations have all been accepted and will be implemented.

- **Measures to widen participation in Horizon 2020 were well designed but sustainable change will mostly depend on efforts by national authorities**

The ECA report "Measures to widen participation in Horizon 2020 were well designed but sustainable change will mostly depend on efforts by national authorities" has been published the 15/06/2022. The ECA concluded that the widening measures were properly designed to target many of the factors limiting the participation of widening countries. However, genuine sustainable change depends, to a large degree, on research and innovation investments and reforms at national level. As regards, the Policy Support Facility (PSF), used by the EU to foster reforms in national ecosystems, it was not used by all widening countries in the 2014-2020 period. Teaming and ERA Chairs projects are starting to produce promising results, specifically in terms of number of publications, networking and access to complementary funding.

The Court addresses five recommendations to DG R&I, which have been accepted and will be implemented.

Recommendation 1

Strengthen the use of the Policy Support Facility;

Recommendation 2

Aim for a more balanced participation of widening countries in widening measures;

Recommendation 3

Facilitate the timely availability of complementary funding;

Recommendation 4

Enhance the capacity of project beneficiaries to exploit their research results; and

Recommendation 5

Enhance its monitoring of the widening measures.

- **Climate spending in the 2014-2020 EU budget- Not as high as reported**

This ECA Report criticises the Commission methodology for climate tracking. The references to Horizon 2020 are of low magnitude. DG CLIMA is the "Chef de file" and DG R&I is associated.

- Synergies between Horizon 2020 and European Structural and Investment Funds – Not yet used to full potential

In this report, the Court assessed whether the Commission and the relevant national/regional implementing authorities had taken appropriate measures to establish synergies between Horizon 2020 and the ESIFs. In particular, while measures to create upstream synergies (e.g.,

support for research centres) were well implemented, measures to create downstream synergies (e.g., funding the exploitation of research results) were hardly implemented.

Differences in the legal frameworks, limited cooperation between the programmes' research and innovation stakeholders and the absence of interoperability between their projects' databases limited the scope for creating synergies.

The Court made the following recommendations to increase the use of synergies:

Recommendation 1

Improve cooperation between stakeholders active in research and innovation;

Recommendation 2

Exploit the potential of databases to foster synergies in order to improve the availability of project data and so facilitate the creation and monitoring of synergies;

Recommendation 3

Increase the use of downstream synergies to support managing authorities in the designing and implementing actions to create downstream synergies with H2020 and HE projects;

Recommendation 4

Improve information flows with all managing authorities about projects awarded the Seal of Excellence.

All the recommendations were accepted and are being implemented. It will require cooperation between the Commission and Member States. For example, for the first recommendation the Commission should set up a regular structured dialogue bringing together the relevant bodies from the Commission and Member States and work with Member States to foster such cooperation on a national/regional level.

ANNEX 8: Specific annexes related to "assessment of the effectiveness of the internal control systems"

In 2022, DG R&I recorded a total of three exceptions: the first concerned the activities of the soon-to-be autonomous “Global Health European and Developing Countries Clinical Trial Partnership 3 Joint Undertaking (GH EDCTP3 JU)”, the second concerned the designated implementing entity (EURAMET) of the Metrology Partnership (an Art. 185 body), and the third concerned the payment of an old invoice.

The new Global Health EDCTP3 Joint Undertaking (GH EDCTP3 JU) is managed by the Commission until it reaches autonomy. An exception was accepted by DG R&I to allow individual financial commitments consuming 2021 appropriations for GH EDCTP3 JU still in 2022 and entering into the legal commitment by signing the corresponding grant agreements only in Q1 2023 in order to not loose EUR 30 million budget. The exception was authorised for the following reasons:

- the political circumstances and the fact that the JU suffered from entry into force of the legal basis only on 30 November of the first year (2021), for which appropriations are already available and a complex legal setup
- the Governing Board of GH EDCTP 3 JU adopted its specific Financial rules, allowing the “use of N+3 rule”, applicable after autonomy,
- the operational services explored all existing options, and - they commit to keep the delay in completing grants signature to the minimum, but not later than Q1 2023. (to update or delete)

An ex-ante agreement to sign a contribution agreement with EURAMET of the Metrology Partnership (an Art. 185 body), prior to the mandatory Pillar Assessment was provided by DG R&I in the form of an exception. DG BUDG and Legal Service were consulted, and their comments were integrated in the underlying risk assessment performed. The final report has not yet been received but the pillar Assessment was presented by the independent external audit company at a closing meeting on 10 January 2023.

The last one concerned an exception and non-compliance to allow for the payment of a 2019 invoice, due.

ANNEX 9: Specific annexes related to "Control results" and “Assurance: Reservations”

1. Annex related to "Control results" - Table X: Estimated risk at payment and at closure

Table X : Estimated risk at payment and at closure (amounts in EUR million) - for parent DGs:

DG RTD *-1*	Payments made (2022;MEUR) *-2*	minus new prefinancing [plus retentions made] (in 2022;MEUR) *-3*	plus cleared prefinancing [minus retentions released and deductions of expenditure made by *-4*	Relevant expenditure (for 2022;MEUR) *-5*	Detected error rate or equivalent estimates *-6*	Estimated risk at payment (2022;MEUR) *-7*	Adjusted Average Recoveries and Corrections *-8*	Estimated future corrections [and deductions] *-9*	Estimated risk at Closure (2022;MEUR) *-10*
Grants FP7	0,87	0,00	0,35	1,22	5,44%	0,07	1,97%	0,02	0,04
Grants Horizon 2020 and Euratom Horizon 2020	55,12	0,00	113,55	168,67	2,71%	4,57	1,00%	1,69	2,88
Grants Horizon Europe and Euratom Horizon Europe	111,16	- 55,27	0,48	56,37	2,00%	1,13	0,00%	0,00	1,13
Subsidies to article 187 and 185 bodies FP7	2,81	0,00	0,00	2,81	2,00%	0,06	0,00%	0,00	0,06
Subsidies to article 187 and 185 bodies H2020	534,17	- 164,05	107,57	477,69	2,71%	12,95	1,04%	4,97	7,98
Subsidies to article 187 and 185 bodies HE	275,31	- 275,17	0,00	0,13	2,00%	0,00	0,00%	0,00	0,00
Financial instruments H2020 (InnovFin)	261,50	0,00	0,00	261,50	0,50%	1,31	0,00%	0,00	1,31
Procurement	81,28	- 0,05	0,00	81,23	0,50%	0,41	0,00%	0,00	0,41
Mutual Insurance mechanism	50,41	0,00	0,00	50,41	0,50%	0,25	0,00%	0,00	0,25
Prizes	5,37	0,00	0,00	5,37	0,50%	0,03	0,00%	0,00	0,03
Experts contracts	1,19	0,00	0,00	1,19	0,50%	0,01	0,00%	0,00	0,01
Other	13,26	- 0,59	0,00	12,67	0,50%	0,06	0,00%	0,00	0,06
Other	1,79	- 1,79	0,00	0,00	0,50%	0,00	0,00%	0,00	0,00
Total without contribution to EA’s operating budget	**1 394,23**	**- 496,92**	**221,94**	**1 119,25**		**20,83**	**0,60%**	**6,68**	**14,15**
					Overall risk at payment in %	**1,86%** *(7) / (5)*		**Overall risk at closure in %**	**1,26%** *(10) / (5)*
REA	98,41	- 98,41	88,03	88,03	0,50%	0,44	0,00%	0,00	0,44
ERCEA	58,81	- 58,81	54,97	54,97	0,50%	0,27	0,00%	0,00	0,27
EISMEA	46,03	- 46,03	28,51	28,51	0,50%	0,14	0,00%	0,00	0,14
Sub-total contributions (if more than one)	203,25	- 203,25	171,51	171,51		0,86		0,00	0,86
Total DG (with contributions to EAs)	**1 597,48**	**- 700,17**	**393,44**	**1 290,75**					

Notes to the table X

(1) Relevant Control Systems differentiated per relevant portfolio segments and at a level which is lower than the total.

(2) Payments made or equivalent, e.g., expenditure registered in the Commission's accounting system, accepted expenditure or cleared pre-financing. In any case, this means after the preventive (ex-ante) control measures have already been implemented earlier in the cycle.

In all cases of Co-Delegations (Internal Rules Article 3), "payments made" are reported by the Delegated departments. For Cross-Sub-Delegations (Internal Rules Article 12), the reporting remains with the Delegating departments.

For subsidies to article 187 and 185 bodies the H2020 and Horizon Europe payments include running costs for 19.96 million euros which have not been provided in a separate line as the impact on the estimated overall risk at closure is not significant.

(3) New pre-financing actually paid out by the department itself during the financial year (i.e. excluding any pre-financing received as a transfer from another department). as per note 2.5.1 to the Commission annual accounts thus excluding "Other advances to Member States" which are covered on a purely payment-made basis (note 2.5.2). Pre-financing paid/cleared" are always covered by the Delegated departments, even for Cross-Sub Delegations.

(4) Pre-financing cleared during the financial year (i.e. their 'delta' in the Financial Year 'actuals', not their 'cut-off' based estimated 'consumption').

(5) For the purpose of equivalence with the ECA's scope of the EC funds with potential exposure to legality & regularity errors (see the ECA's Annual Report methodological annex 1.1), our concept of "relevant expenditure" includes the payments made, subtracts the new pre-financing paid out [& adds the retentions made], and adds the pre-financing actually cleared [& subtracts the retentions released; and any deductions of *expenditure made by MS*] during the FY. This is a separate and 'hybrid' concept, intentionally combining elements from the budgetary accounting and from the general ledger accounting.

(6) This column discloses the detected error rates or equivalent estimates.

The Research Family representative error rate for H2020 and EURATOM and the common representative error rate for the Seventh Framework Programme have been used

For Horizon Europe the detected rate has been estimated at 2% with no future corrections

For low-risk types of expenditure, where there are indications that the equivalent error rate might be close to 'zero' (*e.g., administrative expenditure, operating grants to Executive Agencies, etc.*), the rate which should be used is 0.5% as a conservative estimate, unless the department has a more precise estimate based on evidence.

(8) Even though to some extent the adjusted average recovery and corrections percentage based on the 7 years historic Average of Recoveries and financial Corrections (ARC), is the best available indication of the corrective capacity of the ex-post control systems implemented by the DG over the past years, the AOD has adjusted this historic average (0,34%), further to 2017 ECA/IAS recommendations, and used as best estimation:

- For the Seventh Framework Programme, H2020 and EURATOM H2020 grants (direct management): the difference between overall detected error rate and DG R&I residual error rate;

- For H2020 contributions to Article 185 and 187 bodies: the difference between overall detected error rate and the overall residual error rate;

- For other expenditures, it is assumed that the ex-post future corrections would be 0%.

Analysis of the correlation between estimated future corrections and implemented([55]) amount of corrections and recoveries.

The average amount of the implemented corrections over the past 3 years (2020-2022) is 6.08 million euros (0.33% of the average amount of relevant expenditure of that period), compared to an average amount of estimated future corrections during the same period of 9.83 million euros (0.53 % of the average amount of relevant expenditure of that period). The deviation of 0.20% between the two averages can be attributed to the presentation of an estimation of recoveries for H2020 contributions to article 185 and 187 bodies while the implemented corrections are recorded in the account of these bodies and not in the account of the Commission.

(9) For some programmes with no set *closure* point (e.g., EAGF) and for some multiannual programmes for which corrections are still possible afterwards (e.g., EAFRD and ESIF), all corrections that remain possible are considered for this estimate.

([55]) **Remember:** with the term implemented we mean:

1. when the financial correction has been applied and recorded in the Commission accounts via the following financial transactions: recovery order, deduction from the interim or final payment claim (including payment claims used to clear pre-financing), payment order and/or a de-commitment transaction , or
2. For Cohesion pre-2014 programmes: in case no financial transaction will take place at the closure of the programme, the correction has been applied and included in the pre-closure/closure letter accepted by the Member State.
3. For Cohesion post-2014 programmes: the corrections implemented by Member states.
4. For the Member States' recoveries reported in department AGRI: when the Member States have issued the recovery orders (or equivalent) to the final beneficiaries and reported them accordingly to the Commission (AGRI) in the updated "debtors ledger" of year N (usually in February N+1).

2. Reservations

DG	DG Research and Innovation (DG R&I)
Title of the reservation, including its scope	Reservation on reputational grounds concerning the late implementation and weaknesses affecting the governance and control systems of the investment component of the Accelerator scheme of the European Innovation Council (EIC) Programme within Horizon Europe, delegated to the European Innovation Council and SMEs Executive Agency (EISMEA).
Domain	Direct management mode (transition to indirect management of the investment component due to the restructuring of the EIC Fund) in Horizon Europe framework programme
Programme (or other relevant segment) in which the reservation is made and total (annual) amount of this programme	Horizon Europe Framework Programme. DG R&I did not commit or pay any amount as the budget for the EIC Accelerator (including the investment component) was delegated to EISMEA. The estimated indicative investment component budget based on the results of the evaluations for the calls 2022 of the EIC Accelerator (subject the EIC Fund decisions) is EUR 736 326 194 committed. EISMEA's contribution paid to the EIC Fund in 2022 was of EUR 400 million.
Reason for the reservation	The late restructuring of the EIC Fund, bringing it in line with the Horizon Europe Regulation (indirect management), led to significant delays in the implementation of the investment component of the EIC Accelerator scheme, with operational consequences for the beneficiaries as individual investment decisions and payments were put on hold. These delays were absorbed to a large degree by the end of 2022. Also, criticisms have been received from institutional actors, and from potential beneficiaries of the EIC Accelerator (blended finance/equity support) due to the legal and financial uncertainty provoked by the delays in the EIC implementation. In addition, in January 2023 the IAS issued the audit report on the design and early implementation of the European Innovation Council, highlighting key shortcomings. The identified weaknesses resulted in two critical recommendations concerning (i) the insufficiently defined and implemented governance framework of the EIC and (ii) the design of EISMEA's internal control and anti-fraud strategies notably for the EIC Accelerator (blended finance/equity part). The auditees timely adopted a joint Action Plan containing remedial measures and a timetable for their implementation, to address the weaknesses identified.

Materiality criterion/criteria	Materiality criteria: - Critical findings outlined by the Internal Audit Service (audit on the design and early implementation of the EIC). The recommendations made by the IAS are being effectively addressed. However, the overall significance of the entire report is critical, and the weaknesses identified, namely the governance framework for EIC Programme and the design of EISMEA's Internal control and anti-fraud strategies in relation to the EIC specificities (notably for the EIC Accelerator - blended finance/equity part), may have a serious incidence on the assurance building process. - Significant reputational events Reputational reservation due to the criticism received from institutional partners and also from potential beneficiaries of the EIC Accelerator (blended finance/equity support) due to the legal and financial uncertainty provoked by the delays in its implementation, corresponding to the issues raised in the IAS report.
Quantification of the financial impact (amount at risk)	Non-quantified exposure (reputational reservation).
Impact on the assurance	Weaknesses in the governance and control systems of the investment component of the Accelerator scheme of the European Innovation Council (EIC) Programme within Horizon Europe, possibly affecting the assurance that resources are used for the intended purpose.
Responsibility for the weakness	DG R&I for the design of the governance framework of the EIC Fund, defining the respective roles and responsibilities of the Commission vs EISMEA. The EIC programme has undergone major developments since 2021 for the EIC Fund for which the governance set up and budget implementation management mode are finally being brought in conformity with the Horizon Europe Regulation (indirect management). However, key operational decisions on the structure of the EIC fund have not yet been fully implemented due to the ongoing technical discussions and policy considerations.

Responsibility for the corrective action	DG R&I will ensure, together with the relevant Commission's departments, the implementation of an Action Plan foreseeing *inter alia*: - Prepare and ensure that the Memorandum of Understanding between EISMEA, DG R&I and DG CNECT sets out the cooperation modalities between the Commission and EISMEA and the supervision responsibility of the parent DGs and is signed in 2023 (EISMEA associated). - Prepare a proposal for a revision of the Delegation instrument reflecting the interim solution and clarifying the exact tasks and role of EISMEA under the long-term solution, where the investment component of the EIC Accelerator will be implemented in indirect management. - In the frame of their supervision responsibilities, ensure that EISMEA updates its anti-fraud and control strategies to reflect the specificities of the EIC programme. - Prepare and ensure that the quadripartite Memorandum of Understanding (Commission, EISMEA, AIFM and EIB) includes clear definition and attribution of roles and responsibilities and cooperation modalities of the different actors, and it is signed in 2023 (EISMEA associated). These actions will be implemented by the end of 2023 at the latest.

ANNEX 10: Reporting – Human resources, digital transformation and information management and sound environmental management

The internal control framework([56]) supports sound management and decision-making. It notably ensures that risks to the achievement of objectives are taken into account and reduced to acceptable levels through cost-effective controls.

DG R&I has established an internal control system tailored to its particular characteristics and circumstances. The effective functioning of the service's internal control system will be assessed on an ongoing basis throughout the year and be subject to a specific annual assessment covering all internal control principles.

Human resource management

Objective: DG R&I employs a competent and engaged workforce and contributes to gender equality at all levels of management to effectively deliver on the Commission's priorities and core business.

Main outputs in 2022:

Output	Indicator	Target	Results
Implementation of the local HR Strategy, developed to support the evolution of the Directorate-General and improve staff engagement.	Action Plan – local HR Strategy	By end of 2022	Done
Analysis and monitoring 2021 Staff Survey	Action plan, complementing the local HR Strategy	By end 2022	Done
To reach the target of first female appointments on middle management positions	7 first female appointments on middle management	By end of 2022	Done (10 appointments in total)
To improve staff engagement	At least 62%	By end of 2022	70% in 2021 Staff Survey

([56]) Communication C(2017)2373 - Revision of the Internal Control Framework

Digital transformation and information management

Objective: DG Research and Innovation is using innovative, trusted digital solutions for better policy-shaping, information management and administrative processes to forge a truly digitally transformed, user-focused and data-driven Commission			
Main outputs in 2022:			
Output	**Indicator**	**Target**	**Results**
New and current staff is being trained to use Microsoft 365 and Teams	Percentage of staff having benefitted from training or coaching in Microsoft M365 and Teams	100% of newcomers and 50% of statutory and non-statutory staff trained	55% of statutory and non-statutory staff trained; annual percentage for newcomers not available (DG HR doesn't disclose individualised data on trainings due to GDPR)
Proper filing of ARES and ARESlook records (excluding HRS documents)	Percentage of unfiled records	Under 3%	The percentage of unfiled records in 2022: 2.0 %
Implementation of Corporate principles for data governance	Agreed approach to data ownership and governance for all Grants and Procurement Management in the corporate context	Q4	
Corporate use of eGrants	Increased corporate use of eGrants	Continuous on-boarding activities for different entities (Joint Undertaking's, INTPA, NEAR, DEFIS, ECHO, SANTE, CNECT, GROW, EUROPOL, ...) until end 2022	43 Granting programmes under 2021-2027 MFF have fully on-boarded. The on-boarding of the RELEX family programmes and DG ECHO are subject to further negotiations between SJ and the respective DG's on the types of actions of their respective Model Grant Agreements.
RTD staff awareness of the data protection implications in their daily work and of their responsibilities towards the data subjects	Additional staff trained on data protection	Additional 20% of staff trained on data protection by end of 2022	14% of staff followed the trainings organised by the Data Protection Coordinator. Additional staff attended other awareness-raising activities on personal data protection

Proper resources allocated to ensure the compliance of DG RTD with the Commission's data protection action plan	Increasing number of FTE allocated to the DPC	Formal appointment of an assistant Data Protection Coordinator in January 2022, increasing FTE allocated to DPC from 1.5 to 2	Proper resources were allocated to ensure the compliance of DG R&I with the Commission's Data Protection Action Plan: a Data Protection Coordinator and an assistant DPC were formally appointed.

Sound environmental management

Objective: Service DG R&I takes full account of its environmental impact in all its actions and actively promotes measures to reduce the related day-to-day impact of the administration and its work			
Main outputs in 2022:			
I. MORE EFFICIENT USE OF RESOURCES (ENERGY, WATER, PAPER)			
Output	**Indicator**	**Target**	**Results**
Raise awareness on paper use and paperless methods applied	Reduction of office paper consumption (*2019 baseline*) No. of staff informed	Office paper consumption is reduced by 10% All staff informed	Target no longer representative (due to low office occupancy)
Participate in the end of the year energy saving action, (closing down EC-buildings during the holiday period) and take energy saving measures during summertime	Decrease of energy in 2 buildings (ORBN and CDMA) participating in the actions %. of staff informed	-1% in total energy consumption *(compared with 2019)* All staff informed	DG R&I (both ORBN and CDMA) participated to the BEST winter closure – energy saving estimation of 2% of 2022 consumption 100% DG R&I Staff informed, via email from Dir.I and intranet

Raise staff awareness about energy savings and optimal water use	Number of new actions delivered %. of staff informed	2 actions per year All staff informed	1- Decision in March 2022 on office temperature decrease 2- visit to aquaponic urban farm 3- Communication on BEST winter action – office closure with energy savings details 100% DG R&I staff informed (via email and/or intranet)
II. REDUCING CO2, EQUIVALENT CO2 AND OTHER ATMOSPHERIC EMISSIONS			
Output	**Indicator**	**Target**	**Results**
Reduction of air travel emissions produced by missions, experts, events and conferences	Mission budget reduction (*2019 baseline*) Experts and individual visits budget reduction (*2019 baseline*) % of staff informed	25% budget reduction for missions by the end of 2022 30% budget reduction for experts and individual visits by end 2021 All staff informed	2022 mission budget - allocated €1.711.857,03, reduction of 40,06%; - spent: €1.445.084.74, reduction of 45,20% 2022 expert budget - allocated €1.348.823,37, reduction of -53,95% - spent €267.682 reduction of 84,53% 100% staff informed (pledge)
Promote staff awareness actions about sustainable commuting	No. of new actions delivered No. of staff satisfied with RTD bike parking facilities %. of staff informed	2 actions per year 50% of the staff participating into a survey All staff informed	5 actions delivered – - video to promote Velomai participation - Velomai bike ride - Velomai ceremony - Mobility week bike ride - Promotion of Green Public Procurement training on leasing and purchase of vehicles Survey postponed to 2023 (delays in bike facility works) 100% staff informed about the different actions (via email and/or intranet)
Raise staff awareness on digital work and efficient use of IT resources	Number of new actions delivered %. of staff informed	2 actions per year All staff informed	1 intranet article 100% staff informed

III. REDUCING AND MANAGING WASTE			
Output	**Indicator**	**Target**	**Results**
Promote staff awareness actions about waste reduction and sorting	%. of staff informed Reduce waste generation (%) *(compared with 2019)* Increase waste sorting (%) *(compared with 2019)*	All staff informed 3% reduction of general waste (per building/person if OIB provides adequate info) 3% increase of sorted waste (per building/person if OIB provides adequate info)	100% staff informed via email and/or intranet on actions organized: - RTD staff video on waste sorting - 1 collection on small electric appliances (February) - 2 workshops on upcycling (November) - 1 info session on Repair Café (December) Targets no longer representative (due to low office occupancy)
IV. SUPPORTING BIODIVERSITY			
Output	**Indicator**	**Target**	**Results**
Raise staff awareness on biodiversity promotion and protection	Number of new actions delivered %. of staff informed	2 actions per year All staff informed	1 herb garden maintenance (summer volunteer group) 2 movie screening and debate 100% staff informed

ANNEX 11: Implementation through national or international public-sector bodies and bodies governed by private law with a public sector mission (if applicable)

INFORMATION ABOUT JOINT UNDERTAKINGS (ARTICLE 187 BODIES) AND PUBLIC-PUBLIC PARTNERSHIPS (ARTICLE 185 BODIES)

Innovative Medicines Initiative (IMI)

1. Programmes concerned

Specific Programme Cooperation implementing the Seventh Framework Programme of the European Community for research, technological development, and demonstration activities (2007-2013): Thematic area "Health".

2. Annual budgetary amount entrusted

The following budgetary amounts have been entrusted to IMI:

- Payment appropriations operational in 2022: 0 EUR

3. Duration of the delegation

Until 31 December 2017

4. Justification of recourse to indirect centralised management

An indirect centralised management by a JU within the meaning of Art. 187 TFEU is the most flexible, effective and efficient mean to implement such a joint technology initiative, aiming at increasing the research investment in the biopharmaceutical sector in the Member States and associated countries to the Seventh Framework Programme (FP7) by pooling resources and fostering collaboration between the public and private sectors.

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis, etc.)

Not applicable.

6. Summary description of the implementing tasks entrusted to these bodies

See Art. 2 of the Council Regulation (EC) No 73/2008 of 20 December 2007 setting up the Joint Undertaking for the implementation of the Joint Technology Initiative on Innovative Medicines (OJ L 30, 4.2.2008, p. 38) and Art. 1 of the annexed Statutes.

Innovative Medicines Initiative 2 Joint Undertaking (IMI2)

1. Programmes concerned

Specific Programme Cooperation implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013): Thematic area “Health”.

The specific programme implementing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body (includes EFTA contributions and transfers):

- Payment appropriations operational in 2022: 150 000 000 EUR
- Payment appropriations running costs in 2022: 3 712 000 EUR

3. Duration of the delegation

Until 31 December 2024.

4. Justification of the recourse to indirect centralised management

Council Regulation (EU) N0557/2014 of 6 may 2014 establishing the Innovative Medicines Initiatives 2 Joint Undertaking (OJ L169, 7.6.2014, p.54).

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Not applicable

6. Summary description of the implementing tasks entrusted to these bodies

See Art.2 of the Council Regulation (EU) N0 557/2014.

Innovative Health Initiative Joint Undertaking (IHI)

1. Programmes concerned

Contribute to the specific programme implementing **Horizon Europe** – the Framework programme for Research and Innovation (2021-2027)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body in 2022 (includes EFTA contributions and transfers):

- Commitment appropriations operational in 2022: 153 705 000 EUR
- Commitment appropriations running costs in 2022: 928 000 EUR
- Payment appropriations operational in 2022: 0 EUR
- Payment appropriations running costs in 2022: 1 383 000 EUR[57]

3. Duration of the delegation

From 30/11/2021 until 31/12/2031.

4. Justification of the recourse to indirect centralised management

Article 10 and Annex III of REGULATION (EU) 2021/695 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 28 April 2021 establishing Horizon Europe – the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination, and repealing Regulations (EU) No 1290/2013 and (EU) No 1291/2013
and
Recital 40 of Council Regulation (EU) No 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014.

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recitals (1 to 3 and 9 of Council Regulation (EU) No 2021/2085 of 19 November 2021.

6. Summary description of the implementing tasks entrusted to these bodies

See Articles 5 and 116 of the Council Regulation (EU) No 2021/2085.

[57] This amount does not include EUR 132 259.39 to cover EDCTP3 office space rental paid by IHI

Global Health EDCTP3 Joint Undertaking (GH EDCTP3)[58]

1. Programmes concerned

Contribute to the specific programme implementing **Horizon Europe** – the Framework programme for Research and Innovation (2021-2027)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body in 2022 (includes EFTA contributions and transfers)[59]:

- Commitment appropriations operational in 2022: 71 225 211 EUR
- Commitment appropriations running costs in 2022: 87 876 EUR
- Payment appropriations operational in 2022: 301 633,38 EUR
- Payment appropriations running costs in 2022: 227 575,63 EUR

3. Duration of the delegation

From 30/11/2021 until 31/12/2031.

4. Justification of the recourse to indirect centralised management

Article 10 and Annex III of REGULATION (EU) 2021/695 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 28 April 2021 establishing Horizon Europe – the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination, and repealing Regulations (EU) No 1290/2013 and (EU) No 1291/2013

and

Council Regulation (EU) No 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014.

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recitals 1 to 3) of Council Regulation (EU) No 2021/2085 of 19 November 2021.

6. Summary description of the implementing tasks entrusted to these bodies

See Articles 5 and 100 of the Council Regulation (EU) No 2021/2085.

[58] All reported figures under GH EDCTP3 refer to R&I accounts in preparation for the JU's autonomy, expected in 2023.

[59] One 'Reporting of an exception and requesting prior authorisation: making individual budgetary commitments for appropriations from 2021 still in 2022 and signing the legal commitments in 2023 for several grants under the Global Health EDCTP3 Joint Undertaking' was authorised by acting Director General Signe Ratso on 15 December 2022.

Clean Sky 2 Joint Undertaking (Clean Sky 2)

1. Programmes concerned

Contribute to the specific programme implementing Horizon 2020 – the Framework programme for Research and Innovation (2014-2020)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to Clean Sky 2 (includes EFTA contributions and transfers):

- Payment appropriations operational in 2022: 142 235 189 EUR
- Payment appropriations running costs in 2022: 4 407 163 EUR

3. Duration of the delegation

Until 31 December 2024

4. Justification of the recourse to indirect centralised management

For the implementation of the Joint Technology Initiative in aeronautics, a joint undertaking within the meaning of Article 187 of the Treaty on the Functioning of the European Union ('Clean Sky 2 Joint Undertaking'), has been established for a period until 31 December 2024, to stimulate new research within the framework of a public-private partnership which enables long-term cooperation to take place among European aeronautical stakeholders.

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Not applicable

6. Summary description of the implementing tasks entrusted to these bodies

See Art.2 of Council Regulation (EU) No 558/2014 of 6 May 2014 establishing the Clean Sky 2 Joint Undertaking (OJ L169,7.6.2014,p.77) and Art. 2 of the annexed Statutes.

Clean Aviation Joint Undertaking (CA)

1. Programmes concerned

Contribute to the specific programme implementing **Horizon Europe** – the Framework programme for Research and Innovation (2021-2027)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body in 2022 (includes EFTA contributions and transfers):

- Commitment appropriations operational in 2022: 152 826 832 EUR
- Commitment appropriations running costs in 2022: 1 475 568 EUR
- Payment appropriations operational in 2022: 175 500 518 EUR[60]
- Payment appropriations running costs in 2022: 1 857 568 EUR

3. Duration of the delegation

From 30/11/2021 until 31/12/2031.

4. Justification of the recourse to indirect centralised management

Council Regulation (EU) No 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014.

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recitals 1-3 and 9 of Council Regulation (EU) No 2021/2085 of 19 November 2021.

6. Summary description of the implementing tasks entrusted to these bodies

See Articles 5, 57 and 58 of the Council Regulation (EU) No 2021/2085.

[60] An additional amount of EUR 613 439.27 was transferred directly from DG R&I to REA for the payment of experts.

Bio-based Industries Joint Undertaking (BBI)

1. Programme concerned

Specific programme implementing Horizon 2020- the Framework programme for Research and innovation (2014-2020) – societal Challenge 2

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body in 2022 (includes EFTA and transfers):

- Payment appropriations operational in 2022: 39 556 859,92 EUR
- Payment appropriations running costs in 2022: 2 219 923 EUR

3. Duration of the delegation

Until 31 December 2024

4. Justification of the recourse to indirect centralised management

Council Regulation (EU) No 560/2014 of 6 May 2014 establishing the Bio-based Industries Joint Undertaking (OJ L169,7.6.2014,p.130), amended by Council Regulation (EU) 2018/121 of 23 January 2018 (OJ L22, 26.1.18, p.1)

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Not applicable

6. Summary description of the implementing tasks entrusted to these bodies

See Art.2 of Council Regulation (EU) No 560/2014.

Circular Bio-based Europe Joint Undertaking (CBE)

1. Programmes concerned

Contribute to the specific programme implementing **Horizon Europe** – the Framework programme for Research and Innovation (2021-2027)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body in 2022 (includes EFTA contributions and transfers):

- Commitment appropriations operational in 2022: 182 396 600 EUR
- Commitment appropriations running costs in 2022: 502 103 EUR
- Payment appropriations operational in 2022: 0 EUR[61]
- Payment appropriations running costs in 2022: 832 103 EUR

3. Duration of the delegation

From 30/11/2021 until 31/12/2031.

4. Justification of the recourse to indirect centralised management

Council Regulation (EU) No 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014.

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recitals 1-3 and 9 of Council Regulation (EU) No 2021/2085 of 19 November 2021.

6. Summary description of the implementing tasks entrusted to these bodies

See Articles 5, 46 and 47 of the Council Regulation (EU) No 2021/2085.

[61] An additional amount of EUR 300 000 was transferred directly from DG R&I to REA for the payment of experts.

Fuel Cells and Hydrogen Joint Undertaking (FCH)

1. Programmes concerned

Specific Programme Cooperation implementing the Seventh Framework of the European Community for research, technological development and demonstration activities (20072013) – Nanosciences, nanotechnologies, Materials and New Production Technologies, Energy, Environment (including climate change) and Transport (including aeronautics).

2. Annual budgetary amount entrusted

The following budgetary amounts have been entrusted to this body in 2022:

- Payment appropriations operational in 2022: 0 EUR

3. Duration of the delegation

Until 31 December 2017

4. Justification of recourse to indirect centralised management

Indirect centralised management by a JU in line with Art. 187 TFEU was selected with a view to increase the overall efficiency of research efforts and accelerate the development and deployment of fuel cells and hydrogen technologies, in the Members States and countries associated to the Seventh Framework Programme (FP7).

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis, etc)

Not applicable.

6. Synthetic description of the implementing tasks entrusted to these bodies

See Art. 2 of Council Regulation (EC) No 521/2008 of 30 May 2008 setting up the Fuel Cells and Hydrogen Joint Undertaking (OJ L 153, 12.6.2008, p. 1) and Art. 1 of its Annex.

Fuel Cells and Hydrogen 2 Joint Undertaking (FCH2)

1. Programmes concerned

Specific Programme Cooperation implementing the Seventh Framework of the European Community for research, technological development and demonstration activities (20072013) – Nanosciences, nanotechnologies, Materials and New Production Technologies, Energy, Environment (including climate change) and Transport (including aeronautics).

The specific programme implementing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body (includes EFTA and transfers):

- Payment appropriations operational in 2022: 24 084 204,36 EUR
- Payment appropriations running costs in 2022: 3 440 000 EUR

3. Duration of the delegation

Until 31 December 2024

4. Justification of the recourse to indirect centralised management

Council Regulation (EU) No 559/2014 of 6 May 2014 establishing the Fuel Cells and Hydrogen 2 Joint Undertaking (OJ L169, 7.6.2014, p.108)

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Not applicable

6. Summary description of the implementing tasks entrusted to these bodies

See Art.1 of Council Regulation (EU) No 559/2014.

Clean Hydrogen Joint Undertaking (CH)

1. Programmes concerned

Contribute to the specific programme implementing **Horizon Europe** – the Framework programme for Research and Innovation (2021-2027)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body in 2022 (includes EFTA contributions and transfers):

- Commitment appropriations operational in 2022: 153 705 000 EUR
- Commitment appropriations running costs in 2022: 0 EUR
- Payment appropriations operational in 2022: 80 000 000 EUR
- Payment appropriations running costs in 2022: 0 EUR

3. Duration of the delegation

From 30 November 2021 until 31 December 2031.

4. Justification of the recourse to indirect centralised management

Article 10 1(c), 2 and Annex III of REGULATION (EU) 2021/695 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 28 April 2021 establishing Horizon Europe –the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination, and repealing Regulations (EU) No 1290/2013 and (EU) No 1291/2013 and Council Regulation (EU) No 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014.

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recitals (54) – (58) of Council Regulation (EU) No 2021/2085 of 19 November 2021.

6. Summary description of the implementing tasks entrusted to these bodies

See Articles 73 and 74 of the Council Regulation (EU) No 2021/2085.

EUROSTARS 2

1. Programmes concerned

The specific programme implementing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body in 2022 (EU contribution only, a maximum of 4% of the EU contribution shall be used by the dedicated implementation structure to contribute to the running costs):

- Payment appropriations in 2022: 34 040 348,30 EUR

3. Duration of the delegation

Until 31 December 2025 (Article 3, Delegation agreement)

4. Justification of the recourse to indirect centralised management

Decision No 553/2014/EU of the European parliament and the Council of 15 May 2014 on the participation of the Union in a Research and Development Programme jointly undertaken by several Member States aimed at supporting research and development performing small and medium-sized enterprises (OJ L169, 7.6.2014,p.1)

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recital (19) of Decision No 553/2014/EU

6. Summary description of the implementing tasks entrusted to these bodies

The ESE shall act as the dedicated implementation structure of the Eurostars 2 Joint Programme and is in charge of the execution of the Programme. A more detailed list of tasks can be found in Annex I (Implementation of Eurostars-2) and Annex II (Governance of Eurostars-2) of Decision 553/2014/EU of the European Parliament and the Council.

European Metrology Programme for Innovative and Research (EMPIR)

1. Programmes concerned

The specific programme implementing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body in 2022 (EU contribution only, no contribution to running costs):

- Payment appropriations operational in 2022: 25 000 000 EUR[62]

3. Duration of the delegation

Until 31 December 2024

4. Justification of the recourse to indirect centralised management

Decision No 555/2014/EU of the European parliament and the Council of 15 May 2014 on the participation of the Union in a European Metrology Programme for Innovation and Research (EMPIR) jointly undertaken by several Member States (OJ L169, 7.6.2014,p.27)

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recital (13) of Decision No 555/2014/EU

6. Summary description of the implementing tasks entrusted to these bodies

See Annex III of the Decision No 555/2014/EU.

[62] EUR 25 000 000: EUR 20 250 000 for the Contribution Agreement2020 and EUR 4 750 000 for the Contribution Agreement 2019.

European partnership on Metrology under Horizon Europe[63]

1. Programmes concerned

The specific programme implementing Horizon Europe – the Framework Programme for Research and Innovation (2021-2027)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body (EU contribution only, no contribution to running costs):

- Commitment appropriations operational in 2022: 43 000 000 EUR[64]
- Payment appropriations operational in 2022: 15 600 000 EUR

3. Duration of the delegation

From 30 November 2021 until 31 December 2031.

4. Justification of the recourse to indirect centralised management

DECISION (EU) No 2021/2084 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2021 on the participation of the Union in the European Partnership on Metrology jointly undertaken by several Member States (OJ L427, 30.11.2021, p.1).

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recitals 1-4 of Decision (EU) No 2021/2084

6. Summary description of the implementing tasks entrusted to these bodies

Articles 2 and 6 of Decision (EU) No 2021/2084.

[63] EURAMET is currently undergoing a Pillar Assessment on the financial rules applicable to the general budget of the Union (Regulation 2018/1046). The audit exercise started on September 2022 and will be finalized in January 2023. In the last meeting for the Pillar Assessment (with the audit company and EURAMET on 10/01/2023) the audit company presented only a few recommendations, no one critical, that most of them have already been resolved by EURAMET. The audit company expressed a positive opinion for EURAMET. The Pillar Assessment is prerequisite for the signature of the Contribution Agreement (CoA) so for the first CoA (of year call 2021) we asked for an exemption (Ares(2022)5137753) based on a relevant risk assessment (Ares(2022)5124559).

[64] This refers to the global commitment signed in 2022 according to the practice of previous reports. The individual commitment of 2022 (EUR 26m) is linked to the global commitment of the same amount, signed in 2021.

Joint Baltic Sea Research and Development Programme (BONUS)

1. Programmes concerned

Specific Programme Cooperation implementing the Seventh Framework of the European Community for research, technological development and demonstration activities (2007-2013)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body (EU contribution only):

- Payment appropriations in 2022: 2 805 743,66 EUR

3. Duration of the delegation

The Implementation Agreement signed by the Commission and the Dedicated Implementation Structure entered into force on 18 October 2012. The duration of the delegation covers the remaining implementation phase (minimum period of 5 years until the full lifecycle of all BONUS-funded projects has ended). The above annual budgetary amount paid end of January 2022 constitutes the balance payment; the initiative is now closed.

4. Justification of the recourse to indirect centralised management

The use of indirect centralised management is foreseen in the Decision 862/2010/EU of the European Parliament and the Council of 22 September 2010 on the participation of the Union in a Joint Baltic Research and Development Programme (BONUS) undertaken by several Member States (OJ L256, 30.09.2010, p.1).

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recital (19) of Decision 862/2010/EU sets out the Baltic Organisations' Network for funding Science BONUS EEIG as Dedicated Implementation Structure of the BONUS programme.

6. Summary description of the implementing tasks entrusted to these bodies

BONUS EEIG shall act as the Dedicated Implementation Structure of the BONUS Joint Programme and is in charge of the execution of the Programme. A detailed list of tasks can be found in Article 2, 5 and in Annex I of Decision 862/2010/EU of the European Parliament and the Council.

European and Developing countries Clinical Trial Partnership (EDCTP2)

1. Programme concerned

The specific programme implementing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body (EU contribution only, a maximum of 6% of the EU contribution shall be used by the dedicated implementation structure to contribute to the running costs):

Payment appropriations in 2022: 94 311 105 EUR[65]

3. Duration of the delegation

Until 31 December 2026 for the action EDCTP2 under the specific programme implementing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)

4. Justification of the recourse to indirect centralised management

Decision No 556/2014/EU of the European Parliament and of the Council of 15 May 2014 on the participation of the Union in a second European and Developing Countries Clinical Partnership Programme (EDCTP2) jointly undertaken by several Member States (OJ L169,7.6.2014, p.38)

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recital (23) of Decision No 556/2014/EU

6. Summary description of the implementing tasks entrusted to these bodies

See Annex I of the Decision No 556/2014/EU.

[65] For EDCTP2, there is only one budget line for both operational and running costs. In 2022, we paid EUR 94 311 105. The split between operational and running costs are based on the figures stated in the 2022 work plan for the commitment and on the figures stated in the annual progress report 2021 for the payment. The actual running costs will be known only at the moment of the submission of the Annual progress report 2022 (mid-February 2023).

PRIMA

1. Programmes concerned

The specific programme implementing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)

2. Annual amount entrusted

The following budgetary amounts were entrusted to this body (EU contribution only; a maximum of 6% of the EU contribution shall be used by the dedicated implementation structure to contribute to the running costs):

- Payment appropriations operational in 2022: 9,280,000 EUR
- Payment appropriations running costs in 2022: 1,885,00 EUR

3. Duration of the delegation

PRIMA programme will run over a period from 7 August 2017 to 31 December 2028.

4. Justification of the recourse to indirect centralised management

The use of indirect centralised management is foreseen in Decision (EU) 2017/1324 of the European Parliament and of the Council of 4 July on the participation of the Union in the Partnership for Research and Innovation in the Mediterranean Area (PRIMA) jointly undertaken by several Member States (OJ L 185, 18.7.2017, page 1).

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recital (16) of Decision 2017/1324 /EU specify that in order to ensure the joint implementation of PRIMA, an implementation structure ('PRIMA-IS') should be set up. PRIMA-IS should be the recipient of the Union financial contribution and it should ensure the efficient and transparent implementation of PRIMA.

6. Summary description of the implementing tasks entrusted to these bodies

PRIMA-IS shall act as the Dedicated Implementation Structure of the PRIMA Programme and is in charge of the execution of the Programme. A detailed list of tasks can be found in Article 12 governance of PRIMA of Decision 2017/1324 /EU of the European Parliament and the Council.

B. SUPERVISION ARRANGEMENTS

1. Monitoring arrangements for Joint Undertakings (Article 187 bodies)

The monitoring and accountability arrangements include the following:

- the Commission represents the Union in the Governing Board. The number of Commission representatives and their DG of origin differ in each joint undertaking. Arrangements are in place between DGs to ensure that all proposals to the Governing Board are properly assessed and the Commission position agreed. The Commission is involved in the preparation of these proposals, namely the content of work programmes.;

- each Joint Undertaking is required to produce an AAR;

- the Joint Undertaking's Executive Director signs a declaration of assurance in line with the one used in the Commission;

- the Joint Undertaking is required to inform the Commission without delay of any significant developments in the areas of risk management, control and audit;

- for the Seventh Framework Programme (FP7), the Joint Undertakings have harmonised their ex-post audit strategies with the Commission. DG Research and Innovation is aware of the results of the ex-post audits carried out;

- for Horizon 2020 and Horizon Europe, the Joint Undertakings are fully integrated into the Research and Innovation Family, adopting (sometimes progressively) the IT tools and business processes of the Family, and with audits undertaken by the Common Audit Service;

- DG Research and Innovation may request any additional information deemed necessary and has the right to audit the Joint Undertakings' operations;

- the Commission's IAS may carry out audits in the Joint Undertakings, and DG Research and Innovation will receive the reports for action if necessary;

- the ECA is the external auditor of the Joint Undertakings, and DG Research and Innovation receives copies of the reports for action if necessary;

- there are extensive informal and formal contacts regarding research matters, as well as on questions of internal control, audit (the JTIs are members of the Committee on Audit in Research), internal control, etc.

- JUs have to apply the rules for participation of the relevant framework programme in relation to their funding, with derogations where specified in their basic act.

The Compendium of internal procedures for interactions within DG R&I on matters related to Joint Undertakings under Horizon 2020 will be updated in 2023.

2. Monitoring arrangements for Public-Public Partnerships (Article 185 bodies)

The monitoring and supervisory arrangements include the following:

- the Commission is an observer in the boards;
- there is a delegation agreement/financial framework partnership agreement between the Commission and the body setting out its obligations;
- the bodies are subject to an ex-ante readiness assessment;
- the work programmes are approved by the Commission;
- the Commission receives annual reports from the bodies, including a management declaration and an audit certificate;
- the Commission has the right to suspend payments if the reports are considered to be inadequate;
- there are interim and ex-post evaluations to ensure that the bodies are achieving their policy objectives.
- the decisions providing for the Union's contributions to the programmes include conditions regarding the governance of the bodies and how the EU funding may be used.

  The HE supervision strategy of bodies implemented under Art 185 will be compiled in a document in 2023.

ANNEX 12: EAMR of the Union Delegations (if applicable)

"not applicable"

ANNEX 13: Decentralised agencies and/or EU Trust Funds (if applicable)

"not applicable"

ANNEX 14: Reporting on the Recovery and Resilience Facility

This annex is to be used **ONLY by DG ECFIN** for reporting further details on the progress made during 2021 as regards the implementation of the RRF funding.