

	<p>Clean Sky Joint Undertaking</p> <p>Ex-post Audit</p>	
<p>Ex-post audit Report 2018 – final version</p>		
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I. Introduction

The purpose of this Ex-post Audit Report is to provide input to the annual assurance declaration for the year 2018 of the Executive Director of the CSJU.

In this context, the report describes the results of the ex-post audits performed until today, which potentially provide support or put in doubt the confirmations given in the assurance declaration by the Director, i.e.:

- The information provided in the Annual Activity Report (AAR) 2018 gives a true and fair view
- Resources have been used in the year 2018 for the intended purpose
- Resources have been spent in accordance with the principle of sound financial management
- The underlying transactions are legal and regular
- No information, which could hamper the interest of the JU, is missing in the AAR 2018

The results of the EPA process represent a significant element of the Internal Control System of the JU and need to be described in the AAR. Therefore, this report summarises key information regarding the EPA process, which should be summarised in the AAR 2018 in the section related to Internal Controls.

The main objectives of the ex-post audits are:

- 1) Through the achievement of a number of quantitative targets, assess the legality and regularity of the validation of cost claims performed by the JU's management
- 2) Provide an adequate indication on the effectiveness of the related ex-ante controls
- 3) Provide the basis for corrective and recovery activities, if necessary

The scope of the audits performed during the year 2018 comprised of FP7 and H2020 grant agreements and their expenditure. Audit activities and their results are presented per programme.

Whilst the audit process for FP7 projects is being carried out under responsibility of Clean Sky 2 JU, the audit activities for H2020 grants are fully centralised in the Common Audit Service (CAS) of DG RTD. This contributes to a consistent harmonised audit approach for the totality of H2020 projects and aims at reducing the audit burden for beneficiaries who participate in projects with several granting authorities of the H2020 Research family¹. The implementation of the audit results remains under the responsibility of Clean Sky 2 JU.

On the basis of the Clean Sky Ex-post Audit Strategy for FP7, the H2020 Audit Strategy and in line with the related Clean Sky 2 JU Procedure for implementing the H2020 Ex-post Audit Strategy the JU is establishing its specific audit results for the two programmes on the basis of its individual representative samples drawn from the CSJU population of grants.

In addition, cost claims pertaining to Clean Sky 2 projects also form part of the Common Representative Sample (CRS) of the Common Audit Service of DG RTD (CAS), which is the basis for calculating the results of the ex-post audits for the entire H2020 Research family.

¹ Group of Commission services, Agencies and Joint Undertakings implementing the H2020 programme

Furthermore, cost claims of Clean Sky 2 projects will be included in various samples of corrective (risk based) audits established by the CAS.

Taking into account the above mentioned audit layers the following samples are considered relevant for the assurance of the Executive Director of Clean Sky 2 JU for the year 2018:

- (A.1)** *Specific sample of Clean Sky 2 JU for FP7 projects (including representative and risk based audits)*
- (A.2)** *Specific sample of Clean Sky 2 JU for H2020 projects (including only representative audits)*
- (B)** *Sample of corrective (risk based) audits of the Common Audit Service of DG RTD (CAS) covering Clean Sky 2 H2020 projects*
- (C)** *Common Representative Sample (CRS) of the CAS covering H2020 projects for all H2020 stakeholders, including Clean Sky 2 JU*

The Common Representative Sample (CRS) provides an estimate, via a representative sample of cost claims across the Research and Innovation family, of the **overall level of error** in the Research Framework programmes, across all services involved in its management.

Whilst the CRS is therefore a basic indicator of legality and regularity for the Framework Programme as a whole, Clean Sky 2 JU also examines the results of controls in its particular population to provide specific assurance on the legality and regularity regarding the JU's individual operational expenditure. Due to the different specific samples taken for the Clean Sky 2 JU population of grants, as described in the following sections, explicit evidence has been made available to draw conclusions on the error rate prevailing in the specific population of grants of the Clean Sky 2 JU.

II. Scope of the audit exercises 2018 and coverage

For the calculation of the audit coverage, the accumulated audited value covered by the EPA exercises 2011 to 2018 is compared to the accumulated total amount of validated cost claims at the date of the closing of the Annual Accounts 2018.

(A.1) Specific sample for FP7

With a view to the termination of the FP7 budget implementation and considering the accumulated results achieved through the audits of the FP7 program expenditure since the beginning in the year 2011, the audit exercise 2018 is the last one for the program. No further samples will be taken.

The FP7 samples were established according to the methodology described in the CS2JU Ex-post Audit Strategy considering the following elements:

- Most significant cost claims (all CCs until a certain coverage starting from the biggest ones)
- Representative sample selected at random (by counting)

- Risk based sample

In the year 2018, 7 representative audits were carried out on FP7 projects and are included in the audit results 2018. Additionally, the 2018 audit results include two audit assignments stemming from the 2017 audit exercise. The total audited value of these audits was €35 694 101 (reported validated project costs).

Table 1a:

EPA exercise 2018 FP7 Program		
	Total value of audited project costs	Number of audits
FP7 Audits launched in 2018	34,741,526	7
FP7 Audits launched before 2018	952,575	2
Total FP7 audits included in EPA exercise 2018	35,694,101	9

Out of the 9 audits included in the EPA exercise 2018, 4 final reports have been issued until the date of this report. The reports for the 5 remaining audits are still in a pre-final stage. However, all results of the 9 audits are considered as final.²

The scope of the audits comprised of FP7 projects from the years 2014 to 2016 from Members and Partners.

Table 1b:

Scope of the EPA exercise 2018 for FP7 projects				
	Total	GAMs & GAPs 2014 (or earlier)	GAMs & GAPs 2015	GAMs & GAPs 2016
audited value	35 694 100	74 743	20 381 494	15 237 863
number of cost claims	14	1	5	8
number of audits	9	1	3	5

The total coverage achieved for the FP7 programme expenditure at the end of the year 2018 is 24.7%

² In one case, the results of the audit may undergo a final revision in June 2019, as the audited beneficiary provided additional information subsequently, which may cause a reduction of the detected error. The effect on the audit results on FP7 programme level will not be significant and would in any case further improve the final error rates. Therefore the audit was included in the reporting of the final FP7 audit results.

Table 1b: Accumulated FP7 audit coverage

Accumulated FP7 audit coverage	
	Euro
Total audited value of the years 2011 to 2018 (a)	340 033 605
Total amount of validated cost claims (GAMs and GAPs) (b)	1 378 639 276
Coverage (a) / (b)	24.66%

The specific audit coverage for FP7 Grant Agreements of Partners (GAPs) stemming from the year 2018 and previous audit exercises amounts to 4%.

(A.2) Specific sample for H2020 projects (including only representative audits)

The H2020 sample for 2018 was established in line with the H2020 Audit Strategy and the Clean Sky 2 JU Procedure for implementing the H2020 Ex-post Audit Strategy. It comprised of the following elements:

- Representative sample
 - Most significant cost claims selected at random (the population was stratified to achieve a certain coverage of the most significant cost claims).
 - Remaining cost claims selected at random.
- No risk based sample was selected

The sample consisted of cost claims pertaining only to Members. The scope of the audits comprised of H2020 projects from the years 2014 to 2016.

In the first three audit exercises (2016, 2017 and 2018) no Grant Agreements for Partners (GAPs) have been selected as part of the JU sample, since auditable cost claims were still limited in numbers at the time of selecting the sample for 2018.

For **H2020 projects**, 35 new audits covering 40 cost claims were launched until September 2018, out of which 26 could be finalised until the closure of the final accounts 2018.

Additionally, the results of two audits stemming from the 2017 representative sample and finalised in 2018 are included in the 2018 reporting.

The total audited value of the representative JU specific samples reported in 2018 with final results was € 21,112.706 (reported validated project costs).

Table 1b:

EPA exercise 2018 H2020 Program		
	Total value of audited project costs	Number of audits
Final H2020 Audits launched before 2018	1,866,218	2
Final H2020 Audits launched during 2018	19,246,488	26
Total final H2020 audits included in EPA exercise 2018	21,112.706	28

Based on the results of the final audit reports, extrapolation of systematic errors has been performed and recoveries of finally validated errors have been achieved to a high percentage. Final representative and residual error rates have been calculated based on the Final Audit Reports and contribute to the final Declaration of Assurance for 2018 of the Executive Director.

Table 2a: H2020 Audit exercise 2018

Audit exercise 2018 H2020	Totals	GAMs 2014 or earlier	GAMs 2015	GAMs 2016
(A.2/1)	2 Remaining audits from EPA exercise 2017 (Batch 2) on GAMs			
audited value	1,866,218	589,139	1,277,078	0
number of cost claims	3	1	2	0
number of audits	2	1	1	0
(A.2/2)	26 out of 35 Audits launched in 2018 (Batch 3) on GAMs			
audited value	19,246,488	0	3,704,627	15,541,860
number of cost claims	30	0	7	23
number of audits	26	0	5	21
total				
audited value	21,112,706	589,139	4,981,706	15,541,860
number of cost claims	33	1	9	23
number of audits	28	1	6	21

The accumulated coverage achieved for the H2020 projects at the end of the year 2018 is 12.23%.

Table 2b: H2020 audit coverage based on audits fully finalised

Accumulated H2020 audit coverage based on audits finalised until end of 2018	
	Euro
Total audited value from EPA exercises 2016 to 2018 (a)	61 312 776
Total amount of validated cost claims(b)	501,512,130
Coverage (a) / (b)	12.23%

(B) Sample of corrective (risk based) audits of the Common Audit Service of DG RTD (CAS) covering Clean Sky 2 H2020 projects

In addition to the H2020 Clean Sky 2 JU representative samples, cost claims pertaining to Clean Sky 2 JU projects have also been audited as part of the corrective (risk based) samples selected by the CAS. The JU does not consider them as representative for the specific Clean Sky 2 error rate calculation.

In 2018, 13 audits were launched by the CAS on Clean Sky 2 projects covering 28 validated cost claims stemming from Clean Sky 2 GAMs 2014, 2015 and 2016. Out of these, 9 audits could be finalised until the closure of the final accounts 2018.

Additionally, the results of two audits stemming from the 2017 corrective sample are included in the 2018 reporting.

The accumulated value of audits stemming from the corrective CAS samples reported in 2017 and 2018 was €10,399,986 (reported validated project costs). Through these samples, an additional coverage for the Clean Sky 2 H2020 operational payments of 2% could be achieved.

III. Audits launched, on-going, closed

Table 4:

Status of current audits launched in 2018 and before (FP7 & H2020)	number	share of total launched
FP7 audits		
Total number launched	9	-
Pre-final reports received	5	56%
Final reports received	4	44%
Audits included in the final audit results 2018	9	100%
H2020 audits		
Total number launched	37	-
Final reports received	28	76%
Audits included in the final audit results 2018	28	76%

IV. Adjustments and error rates

Table 5a:
FP7 Audits

Audit exercises - individual and accumulated until 2018	Audited value/requested contribution including not received reports	Total Audited value/requested contribution of reports received	Adjustment	Adjustment in favour of CSJU	Adjustment in favour of the beneficiary	Detected error rate in favour of the beneficiary	Detected error rate in favour of CSJU	Representative error rate in favour of the	Representative error rate in favour of CSJU	Systematic error in favour of JU	systematic error rate in favor of JU	Unaudited cost claims of auditees	Total unaudited cost claims of audited beneficiaries (E)
Results audit exercises from 2011 to 2017 (detected results incl. non representative)	402,215,273.70	304,339,504.42	-5,871,686.54	-10,766,788.22	5,080,686.87	1.67%	-3.54%			-8,790,981.00	-2.89%	473,415,480.77	481,731,461.82
Results audit exercises from 2011 to 2017 (representative results excl. risk based items)	349,208,096.81	270,727,046.85	-4,195,467.44	-8,327,974.71	4,318,092.46	1.59%	-3.08%	1.59%	-3.08%	-7,539,356.37	-2.78%	431,637,868.34	437,944,103.45
Results audit exercise 2018 (detected results incl. non representative)	35,694,100.67	35,694,100.67	-606,948.88	-875,271.86	268,322.98	0.75%	-2.45%			-658,177.08	-1.84%	127,304,241.54	127,304,241.54
Results audit exercise 2018 (representative results excl. risk based items)	35,428,702.28	35,428,702.28	-352,800.49	-621,123.47	268,322.98	0.76%	-1.75%	0.76%	-1.75%	-411,048.69	-1.16%	127,290,396.54	127,290,396.54
Accumulated results all audit exercises (detected results incl. non representative)	437,909,374.37	340,033,605.09	-6,478,635.42	-11,642,060.08	5,349,009.85	1.57%	-3.42%			-9,449,158.08	-2.78%	600,719,722.31	609,035,703.3625
Accumulated results all audit exercises (representative results excl. risk based items)	384,636,799.09	306,155,749.13	-4,548,267.93	-8,949,098.18	4,586,415.44	1.50%	-2.92%	1.50%	-2.92%	-7,950,405.06	-2.60%	558,928,264.88	565,234,499.99

Table 5b:
H2020 audits

Audit exercises - individual and accumulated until 2018	Total Audited value (100% costs) of reports launched	Total Audited value (100% costs) of reports received	Adjustment	Adjustment in favour of CSJU	Adjustment in favour of the beneficiary	Detected error rate in favour of the beneficiary	Detected error rate in favour of CS JU	Representative error rate in favour of the beneficiary	Representative error rate in favour of CSJU	Systematic error in favour of JU	systematic error rate in favor of JU	Unaudited cost claims of auditees	Total unaudited cost claims of audited beneficiaries (E)
Results audit exercise 2016 (all representative)	13,067,875.10	13,067,875.10	-129,320.98	-148,803.72	19,482.74	0.15%	-1.14%	0.15%	-1.14%	-50,543.52	-0.39%	2,032,186.36	2,032,186.36
Results audit exercise 2017 (all representative)	28,998,413.67	27,132,195.87	-373,888.03	-527,965.16	154,155.92	0.57%	-1.95%	0.57%	-1.95%	-143,185.38	-0.53%	59,275,139.67	59,275,139.67
Results audit exercise 2018 (all representative)	24,146,039.30	21,112,705.41	-103,512.27	-207,015.67	103,503.40	0.49%	-0.98%	0.49%	-0.98%	-148,295.93	-0.70%	75,806,533.02	75,806,533.02
Accumulated results all audit exercises (all representative)	66,212,328.07	61,312,776.38	-606,721.28	-883,784.55	277,142.06	0.45%	-1.44%	0.45%	-1.44%	-342,024.82	-0.56%	137,113,859.05	137,113,859.05

Error rates:

The representative error rate is an indicator of the quality of the ex-ante controls as it gives an estimate of errors that remain undetected after the ex-ante controls have been performed.

Based on the results of the final audit reports, detected errors are corrected and extension of systematic errors is calculated and implemented following the related rules of the Clean Sky and Clean Sky 2 grant agreements. Under this assumption, residual error rates are calculated and contribute to the Declaration of Assurance of the Executive Director on the legality and regularity of the Clean Sky 2 JU's operations.

FP7 error rate

The accumulated (ex-post) detected error rate in favour of Clean Sky 2 JU identified in the audited cost claims of FP7 projects amounts to **3.42%**.

The corresponding rate for the individual audit exercise of the year 2018 is **2.45%**.

After excluding the results of the risk-based audit, the accumulated representative error rate is established, which indicates the error rate applicable to the entire FP7 programme expenditure of the JU before corrective measures. It amounts to **2.92%**.

The (ex-post) residual error rate indicates the 'net-errors' that remain in the total population after implementing corrective actions resulting from the ex-post controls including extrapolation of systematic errors to non-audited cost claims³.

The following accumulated residual error rates are calculated for the FP7 programme:

Table 6a:

Calculation of FP7 residual error rate (ResER%): Accumulated 2008 to 2018	
Total population (P) =	1,378,639,276
Audited population (A)=	306,155,749
total non-audited cost claims of audited beneficiaries (E) =	565,234,500
Representative error rate (RepER%) =	-2.92%
Systematic error rate (RepERsys%) =	-2.60%
ResER% =	-1.21%

The accumulated error rate established at the end of the year 2018 confirms the level of error as identified in the previous years for the FP7 projects of Clean Sky. On the level of the entire programme, the error stays below the targeted threshold of 2%.

³ The residual error rate is calculated according to the formula described in the dedicated annex of 2018 AAR.

H2020 error rate

The audit reports received provide final results for 28 representative audit engagements launched in 2017 and 2018.

The **final accumulated (ex-post) detected error rate** in favour of Clean Sky 2 JU and the **representative error rate** identified in the audited cost claims of H2020 projects for the accumulated audit exercises of the 3 years 2016 to 2018 amounts to **1.44%**. The corresponding rate for the individual audit exercise of the year 2018 is **0.98%**.

Taking into account the systematic errors identified by the auditors in the H2020 cost claims, the following residual error rates are calculated:

Table 6b:

Calculation of H2020 accumulated residual error rate (ResER%): 2018	
Total population (P) =	501,512,130
Audited population (A)=	61,312,776
total non-audited cost claims of audited beneficiaries (E) =	137,113,859
Representative error rate (RepER%) =	-1.44%
Systematic error rate (RepERsys%) =	-0.56%
ResER% =	-1.11%

Table 6c:

Calculation of H2020 residual error rate (ResER%): 2018	
Total population (P) =	245,276,102
Audited population (A)=	21,112,705
total non-audited cost claims of audited beneficiaries (E) =	75,806,533
Representative error rate (RepER%) =	-0.98%
Systematic error rate (RepERsys%) =	-0.70%
ResER% =	-0.68%

The error rates reported for the year 2018 – accumulated and annual – confirm the level of error as identified in the previous year for the H2020 projects of Clean Sky. On the level of the programme and of the actual year 2018, the error stays below the targeted threshold of 2%.

V. Extrapolation

For FP7 beneficiaries, extension of systematic audit findings is performed for all audits which have identified a net systematic error rate of all cost claims included in the individual audit of a beneficiary exceeding 1% (in favour of the JU).

The extrapolation of systematic errors for the audit exercise 2018 has been launched for 2 out of the 3 cases stemming from 2018 audit exercise during the months February to May 2019. The last FP7 extrapolation case will be launched in June 2019. For details, see section IV. *Implementation of audit results.*

The extension of audit findings stemming from H2020 audits is done according to common criteria for the entire H2020 Research Family. This means that unlike the approach applied for the FP7 audits, systematic errors identified in individual cost claims of H2020 projects will be corrected in all cost claims of the concerned beneficiaries including those stemming from different granting authorities.

In the EPA exercises performed until now for H2020 projects concerning beneficiaries of Clean Sky 2 JU, several cases of extension of systematic audit findings occurred. The implementation of the correction is done, in the case of the on-going projects, through withholding the overpaid amounts from the next payment to the coordinator and, in the case of closed projects, through recovery orders directly sent to the beneficiary.

VI. Materiality

The control objective is to ensure for the CS programmes (FP7 and H2020), that the residual error rate, which represents the level of errors which remains undetected and uncorrected, does not exceed 2% of the total expense recognised until the end of the programme. 2% is therefore the materiality level set for the JU. A detailed description of the materiality criteria applied for the assessment of the audit results with a view to the assurance declaration of the Executive Director of the JU is provided in a dedicated Annex of the 2018 AAR.

The following materiality thresholds have been agreed with the audit firms for the FP7 audits launched until 2015:

Overall materiality for qualification of the auditors opinion: 2% of total audited value of cost claims included in the audit report

Reporting materiality for adjustments to be listed in the audit reports: Euro 150

VII. Implementation of audit results

FP7 programme

Overpayments identified in the ex-post audits carried out for FP7 projects in the years 2017 and 2018 have been recovered during the year 2018 and 2019 directly from the audited beneficiaries.

Likewise, the financial effect of the extrapolation of systematic errors detected in the ex-post audits on unaudited cost claims has been implemented.

As of the date of this report, for FP7 audits of 2017, a 99% correction rate could be achieved. For audit results of 2018 10% could be corrected.

Taking into account the audit exercise 2018, a correction rate of 94% for the detected errors and extension of audit findings has been achieved for the entire FP7 programme until the date of this report.

Table 7c:

Total corrective action for FP7 EPA 2018 exercise implemented				
Audited and extrapolated value	Adjustments in favour of CSJU for audited and extrapolated cost claims (100%)	related overpayment (50 % of total adjustment)	recovered overpayment (RO issued or ex-ante correction)	correction rate for overpayments (%)
920,916,274.88	-23,775,196.46	-11,978,657.70	-11,275,704.20	94.13%

H2020 programme

H2020 overpayments identified in the EPA exercise 2017 had been implemented until the closure of the JU's Final Accounts 2017 at a rate of 66%. The implementation rate⁴ has meanwhile improved further to 100%.

⁴ Following Article 21.5 of the H2020 GA, the CSJU implements audit adjustments in on-going projects through deducting the rejected costs from the payment to the project coordinator for the next reporting period.

Table 7b:

ACCUMULATED Total corrective action for H2020 EPA exercise 2016-2017 - implementation achieved⁵				
Audited value (of audited and unaudited cost claims)	Adjustments (detected error and extension of findings) in favour of CSJU	related overpayment	recovered overpayment (€) (i.e. adjustments booked in the system for next payment or RO issued)	recovery rate (%)
86,407,336	-527,965	-487,945	-487,945	100%

For overpayments detected in H2020 audits of the ex-post audit exercise 2018, the implementation rate is at 58% in May 2019 and is expected to arrive at 100% until the end of 2019, when the extension of audit finding cases will have been assessed and closed by the dedicated unit from the Common Audit Service.

Table 7b:

Total corrective action for H2020 EPA exercise 2018 - implementation achieved				
Audited value (of audited and unaudited cost claims)	Adjustments (detected error and extension of findings) in favour of CSJU	related overpayment	recovered overpayment (€) (i.e. adjustments booked in the system for next payment or RO issued)	recovery rate (%)
96,919,238	-365,488	-263,463	-153,866	58.40%

⁵ According to the Article 42.3 of the H2020 GA, the recovery of detected overpayments can only be deducted "from the total eligible costs declared, for the action, in the next periodic summary financial statement or in the final summary financial statement." Therefore, the JU considers the overpayments as corrected, when the related adjustments are booked in the grant management system.

Furthermore, the accumulated corrections implemented for the H2020 programme until the date of this report represent 85% of the total impact of detected errors and extension of audit findings.

ACCUMULATED Total corrective action for H2020 EPA exercise 2016- 2018 - implementation achieved				
Audited value (of audited and unaudited cost claims)	Adjustments (detected error and extension of findings) in favour of CSJU	related overpayment	recovered overpayment (€) (i.e. adjustments booked in the system for next payment or RO issued)	recovery rate (%)
183,326,574	-893,453	-751,408	-641,811	85.41%

VIII. Results of non-representative ex-post audits pertaining to the sample of corrective (risk based) audits of the CAS covering Clean Sky 2 H2020 projects

In the year 2018, a detected error rate resulting from the sample of corrective (risk based) audits selected by the CAS covering Clean Sky 2 H2020 projects has been established and represents 1.4% of the audited expenditure. The accumulated detected error for the years 2016 to 2018 of this type of sample currently amounts to 2.2%

The representativeness of this error rate is limited as the selection of the samples has not been based on a consistent methodology for random sampling and the coverage achieved is only at 2.07% (see section II above). Nevertheless, the results confirm the level of error detected in the representative audits of the JU and thus contribute to the assurance obtained from the audits.

IX. Results of the Common Representative Sample (CRS) of the CAS covering H2020 projects for all H2020 stakeholders, including Clean Sky 2 JU

At this stage of the programme lifecycle, cost claims totalling 9 billion euro of requested funding had been received by the CAS from the services until the end of 2018. The first Horizon 2020 audits were launched in the middle of 2016 and further audits were launched in 2017 and 2018. Two Common Representative Samples (CRS), Common Risk Samples and Additional Samples have been selected. In total, by December 2018, 2383 participations had been selected for audit, covering all the services signing grants in Horizon 2020.

In total, the audit of 1155 participations has been finalised by 31/12/2018 (763 in 2018). This includes 164 out of 303 selected in the first 2 CRS. The error rates at 31/12/2018 are:

Overall Detected Error Rate based on 1155 participations: **1,62 %**

The Detected Error Rate based on 164 out of 303 participations selected in the first CRS is **2.43%**. However, if we take into account the draft audit reports, then the expected representative error rate for the full sample will be around **3.32%**.

The Residual Error Rate for the Research and Innovation Family amounts to **2,22 %** (2.24% for DG RTD alone); the rate is expected to rise to around **2.45%** when taking into account the draft audit reports.

The Residual Error Rate derived from the 2 CRSs for Clean Sky 2 JU amounts to **1.96%** for audits finalised until the end of 2018.

As last year, the error rates set out above must still be treated with care. The two first CRS are not yet complete, and so the error rate is not yet fully representative of the expenditure that it covered. In addition, the first CRS was taken at an early stage of the programme in order to provide an early indication of the error rate and, also, to help assess whether the simplifications introduced in Horizon 2020 had been effective. The nature of expenditure in the first years of the programme may not be totally representative of the expenditure across the whole period of expenditure. And the programme is in any case multi-annual, so the error rates, and especially the residual error rate, must be considered over time. In particular, the cleaning effect of audits over time will tend to increase the difference between the representative/detected error rate and the residual error rate, with the latter finishing at a lower rate.

Looking at the corporate results of the Common Representative Sample of the CAS covering H2020 projects for all H2020 stakeholders, including Clean Sky 2 JU, they seem to confirm the positive trend of the H2020 error rates compared to the FP7 programme, as identified in the specific samples of Clean Sky 2 JU. There is some evidence at this point of time that the simplifications introduced in Horizon 2020, as well as the increased experience of major beneficiaries, are reducing the number and level of errors made by beneficiaries.

However, beneficiaries still make errors, sometimes because of a lack of understanding of the rules, sometimes because of a non-respect of the rules. The Common Support Service of DG RTD has subsequently introduced several simplifications or clarifications in the H2020 Model Grant. The results of the first audits were considered in a working group⁶ bringing together auditors from the Commission and the Court to see where additional simplifications and clarifications may be needed.

Considerable efforts have been made by the Commission to ensure clear communication of the rules and guidance to participants and their auditors. In 2018, the Common Support Center has been attending and coordinating 15 events organised by the National Contact Points of Members States and associated members with a total of 1819 participants.

Clean Sky 2 JU has performed until now 3 workshops for its Members on the eligibility rules of the H2020 programmes, in addition to information provided during Info Days carried out in the context of Calls for Proposals.

⁶ This meeting took place on 14th March 2018

I. Assessment of the ex-post audit results and conclusion for the Assurance declaration of the Executive Director in the AAR 2018 (version February 2019)

The final results of the ex-post audit exercises 2011 to 2018 pertain to validated cost claims for GAMs and GAPs of the years 2008 to 2017 for the FP7 and H2020 programmes. As described in the materiality criteria in the dedicated Annex of the 2018 AAR, the control objective of the JU is to ensure for the two individual CS programmes, that the residual error rates, which represent the remaining level of errors in payments made after corrective measures, do not exceed 2% of the total expense incurred until the end of the individual programmes.

The audit approach for FP7 grants is based as in the years before on the CSJU ex-post Audit Strategy as approved by the GB in 2011. For the H2020 grants Clean Sky 2 JU follows the H2020 Audit Strategy and the related Implementing procedure of the JU.

The results of the EPA process 2018 reflect the legality and regularity of the validation process for GAM execution 2008 to 2017 for the FP7 and H2020 programmes. Whilst the FP7 expenditure is meanwhile fully covered through the EPA exercises until 2018, the EPA results of the year 2018 do not directly relate to the entire H2020 expenditure incurred by the JU until the end of 2018.

However, the JU's EPA strategies are implemented through an on-going process, which produces accumulated results applicable to the entire expense incurred for the CS programmes up to a certain point of time. At present we have results for payments incurred for GAMs and GAPs 2008 to 2017. The accumulated audit coverage of the validated financial statements pertaining to GAMs and GAPs for the years 2008 to 2017 is 25% for the FP7 programme and 12% for the H2020 programme. The additional coverage achieved through corrective audits launched by the CAS on Clean Sky 2 grants is 2%.

In total, H2020 expenditure amounts to 100% of the total Clean Sky 2 operational expenditure incurred in 2018. As the FP7 programme is now closed, there is no expenditure incurred in 2018 corresponding to FP7 grants.

FP7 programme:

The FP7 programme has been finally closed, no further financial transactions need to be considered in future audit exercises. Therefore, the conclusions on the final error rates for the entire FP7 program are presented in the AAR 2018.

At the end of 2018, the results established in the FP7 audit samples, stemming from 8 annual exercises carried out in the years 2011 to 2018 reflect an accumulated representative error in favour of the JU in the validated FP7 operational expense of **2.92%**

The corrective measures performed as a result of the 8 annual FP7 audit exercises, carried out in the years 2011 to 2018, have been implemented to nearly 100%, which corroborates the calculation of the residual error rate.

The final results indicate at present an accumulated residual error for the FP7 expenditure of **1.21%**, which lies well below the target of 2%.

The FP7 population of GAPs has been covered by two specific samples covering cost claims of the years 2012 and 2013, which resulted in representative and residual error rates below 2% and hence did not indicate a significant risk for overpayments to Partners.

Therefore, we consider the accumulated results of the EPA process 2011 to 2018 appropriate to provide assurance for the FP7 related operational expenditure as recognised in the Final Accounts 2018 as well as for the entire FP7 program. The error rate identified for FP7 grants as described in this report does not require a reserve for the legality and regularity of the FP7 programme expenditure.

H2020 programme:

The accumulated results established in the H2020 samples of the years 2016 to 2018 reflect a representative error in favour of Clean Sky 2 JU in the validated operational expense of 1.44%, compared to 1.68% for the accumulated audit exercises of 2016 and 2017.

The error rate can be considered representative, as the major part of the selected sample of the year 2018 is final and available for the error rate calculation.

The H2020 **accumulated residual error rate** stemming from the first 3 audit exercises amounts to **1.11%**, compared to **1.30%** for the first two exercises 2016 and 2017.

The accumulated audit coverage of the validated H2020 financial statements pertaining to GAMs for the years 2014 to 2017 is **12%**. In view of the moderate errors detected in the first H2020 audits, the level of assurance provided through these audit results is considered sufficient for the reporting of the year 2018.

The results from audits pertaining to the specific samples carried out on the Clean Sky 2 expenditure as well as the samples of the CAS (CRS and other corrective audits), indicate, that over the multiannual period, and especially considering the envisaged level of the overall audit coverage of Horizon 2020 expenditure of Clean Sky2, the residual error rate will stay below 2%.

Conclusion

The error rates for FP7 grants and for the so far audited population of H2020 stay below the materiality level of 2%, a reservation in the Assurance Declaration of the Executive Director for the Final AAR 2018 is not considered necessary.