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Directorate H. Assurance and Audit
H.5. Assurance and financial audit

ANNEX 1 TO GUIDELINE 2

on the SAMPLING METHODOLOGY of compliance testing under audit objective 2

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1.1 General consideration

A detailed risk assessment, including a risk analysis process for the quantification of the identified risks based on the probability of occurrence and the impact factors, is considered to be a key element in order to set an effective and efficient audit strategy. Based on the results of the overall risk assessment as described in section 11.3 of the GL 2, the CB has to draw its sampling methodology and plan its test of controls in order to obtain sufficient and appropriate audit evidence that the controls selected for testing operate effectively as designed throughout the period to prevent or detect and correct serious deficiencies.

Tests of controls serve to estimate the control design deficiency and to measure the deviation rate from internal controls with the aim to determine whether the systems and procedures ensure that transactions are processed in line with the basic Union requirements and therefore support the auditor's assessed level of control risk.

Reference is made in this regard to the non-exhaustive reference list of basic Union requirements as made available on CIRCABC.

The assessment of the governance systems is designed at Fund level per IACS and Non-IACS blocks of basic Union requirements. The tests of controls will need to be done based on this assessment matrix considering the results of the risk analysis.

Every sampling activity for testing always follow a basic common structure:

- **Define the test objective** in function of the identified risks and assertions to be tested: usually the following aspects need to be confirmed through the compliance testing:
  - The elements of the basic Union requirements were set properly in the procedures and systems of the PA and they function properly, e.g. as regards public procurement, or conditionality;
  - The systems to ensure eligibility of beneficiaries, interventions and payments were set properly in the procedures and systems of the PA and the competent control bodies and they function properly. For example, the CB wishes to test the quality of controls for on-the-spot checks carried out by the PA and the validity of the results.
- **Define the population and the sampling unit** (for details c.f. 11.6 of GL 2): the sampling unit is usually linked to the control embedded in the governance system. The unit used for defining the population is expected to be used also for the sample size determination.
- **Define the deviation** condition (for details c.f. 13.1 of GL 2): The deviation condition is determined for each sample unit. The CB is required to express an opinion whether the functioning of the governance system is free of serious deficiencies or not. A deficiency, therefore, should be assessed at system level and not at the level of the individual beneficiary. Regarding the deficiency as such, the deviation condition can be projected at two levels: ***(a) deficiencies considered as "serious" (i.e.*** occurs where the proper functioning of the governance systems is impeded by a serious system weakness. A serious

deficiency must have a systemic impact in terms of its occurrence and its gravity as to be considered as such.) and ***(b) other deficiencies (e.g.*** Where there is insufficient staff in the PA without adverse impact on the proper functioning of the management and control systems.).

- **Determine the sample size**, based on a detailed risk analysis and the auditor's professional judgement.
- **Select the sample and perform the audit:** A mapping of different samples selected for the testing of different controls is recommended if the CBs want to explore the possibility of serving different audit purposes (test of a basic Union requirement) with the same samples or part of samples.
- **Evaluate the audit results**

The control deficiency can be estimated at two levels:

- Deficiency in design and occurrence – when the control necessary to meet the objective is missing; or when the objective would not be met, even if the control operates as intended.
- Deficiency in operation – when a properly designed control does not operate as intended; or when the person performing the control does not have the authority or competence to effectively perform the control.

A deficiency can be considered serious when it, in its own right, or in combination with other deficiencies in the governance systems, leads to a reasonable possibility that an incorrect reporting of individual interventions will not be prevented, detected, and/ or corrected on a timely basis.

For planning and performing compliance audit tests, a non-statistical approach is advised; for the definition of the sample sizes refer to section 1.2 below.

Alternatively, for testing the quality of the internal control system (system audit), the auditors might consider applying a statistical sampling technique (attribute sampling). Attribute sampling is used to estimate the proportion of a population's items that possesses a specified characteristic and consequently to decide whether internal controls are working as intended (obtaining "yes"/ "no" answers, or deviation/non-deviation propositions with a measurable degree of reliability).

1.2 Determining the sample size

For the purpose of compliance testing, the CB should focus on the relevant process and procedures and identify controls embedded in the process, which the CB will test. The number of tests should be performed according to the frequency of the control and the risk assessment as described in chapter 11.3 of GL 2. The objective is to test the design and the performance of the control in order to get assurance that the controls operated effectively throughout the audit period. One item can be tested with all relevant controls in the given process or, vice versa, a test for specific control applicable for one intervention can be used for assessing the governance system of another intervention.

The recommended sample size at the level of each BUR-matrix cell is defined on the basis of:

a) Result of risk assessment per BUR-matrix cell/per intervention (control environment, IR, CR, amount of expenditure of the intervention tested)
b) Type of controls (IT, manual, …)
c) Frequency of control[1].

and, if no deviations are expected, are summarized on the table below.

Type and frequency of control	**Number of controls to be audited in case of minimum risks**	**Number of controls to be audited in case of low risks**	**Number of controls to be audited in case of moderate risks**	**Number of controls to be audited in case of high risks**
More than 1,000 checks carried out per year	up to 25	at least 25	at least 35	Professional judgement
Between 53 – 1,000 controls carried out per year	2% (at least 5)	2-3% (at least 7)	3-4 % (at least 13)	Professional judgement
Weekly check	5	7	13	Professional judgement
Monthly check	2	4	7	Professional judgement
Quarterly control	2	3	3	4
Annual control	1	1	1	1
Automated Application Control	Test of 1 for each application control if supported by effective ITGCs, otherwise if ITGCs are ineffective- test 25 controls			

In case of small population, the sample size of the compliance testing can be adjusted accordingly.

[1] Regarding frequency of control, see explanation in section 11.6.1 in the GL 2.

When deviations are expected, one possible way to obtain the sample size is based on the following information:

- Confidence level and the related coefficient *z* from a normal distribution (typically a z=1.96 corresponding to a confidence level of 95%)
- Maximum tolerable deviation rate, **T**, determined by the auditor and in accordance with the planned control risk; it represents the maximum rate of deviations that an auditor is willing to accept and still use the planned control risk;
- The anticipated population deviation rate, p, estimated or observed from a pilot sample. Note that the tolerable deviation rate should be higher than the expected population deviation rate, as, if that is not the case, the test has no purpose (i.e. if you expect an error rate of 10%, setting a tolerable error rate of 5% is pointless because you expect to find more errors in the population than you are willing to tolerate).

The sample size is computed as follows:

$$n = \frac{z^2 \times p \times (1-p)}{(T-p)^2}.$$

The identified deviations should be evaluated to determine why the control failed, the potential consequences, and the remedial actions that should be initiated. In this context, the working papers should document if the control failed due to either a design or an operation deficiency. ISA 330 (par. 17) furthermore requires an evaluation whether: (a) reliance can be placed on the controls; (b) additional tests of controls are necessary; or (c) the potential risks of misstatement need to be addressed using substantive procedures.

The CB should also consider the nature of the ICS, including whether it includes manual and/or automated control procedures. In the case of automated controls, the tests should include not only the manual controls, but also the automated business and application controls, as well as an assessment of the adequacy of the IT general controls (ITGCs). If the operation of these general controls is reliable, thus ensuring that reliance can be placed on the application controls, it may be sufficient to test only a limited number of instances of the operation of an automated application control (for application controls- test of one).

The expected population deviation rate (or number of exceptions) should normally not exceed the tolerable error rate. The CB should evaluate the nature of the exception/deviation and determine whether it is a one-off occurrence due to a particular reason with limited impact or the deviations could be of considered as a systemic issue.

The tolerable error is expressed as the number of times the controls failed in the population and is the maximum rate of deviation from a prescribed control that auditors are willing to accept without altering the planned level of control risk. A rule of thumb recommends the following relation between the planned control risk and the tolerable deviation rate:

Planned control risk	Tolerable deviation rate
Low	2% - 7%
Moderate	6% - 12%
Slightly < Maximum	11% - 20%
Maximum	No Testing

In case the compliance tests show that the control systems are not or only partly satisfactory, the CB may, on the basis of its professional judgment, decide to:

1. report a deficiency on the proper functioning of the governance systems; or

2. to enlarge the initial sample size.

Note that enlarging the sample will not necessarily provide assurance that the controls are effective, but may, however, serve to better identify the areas for improvement necessary to ensure that, going forward, procedures are fully observed at all times.

These situations where the PA has apparently failed to adopt appropriate control systems should feed into both the scores attributed in the accreditation matrix, and the opinion of the CB on the functioning of the ICS of the PA.

Once the internal control system has been assessed, the CB will be able to estimate the extent of further substantive audit procedures, including the re-assessment of the initial assumptions.

1.3 Compliance testing in case of an IT environment

In the planning phase of the audit the CB should analyse the IT environment of the PA. It should be clear to the CB which schemes are highly automated (e.g. the ones under IACS), and the impact of this on the EAGF or EAFRD declaration (amount, risks, complexity).

Once the CB selects an IT application, it should determine which automated application controls to test. The CB should assess how much reliance can be placed on the automated controls, and that the roles and responsibilities have been correctly assigned in the IT system. The rule of thumb is to test the application controls that cover most audit assertions and most WCGWs. Once an automated application controls has been selected for testing and determined that it is functioning as intended, the CB may consider performing a test of one on that control and some other tests to determine that the control continues to function effectively.

Moreover, the CB should test the IT general controls (ITGC) to determine if the ITGCs functioned effectively throughout the audit period, which supports reliance on application controls, IT-dependent manual controls and electronic audit evidence. The conclusion of the CB should be whether the ITGCs for a given IT system are effective or ineffective. In case the PA is ISO 27001 certified, the CB could place reliance on the ISO certificate if it covers the whole audited financial year. For the control procedures of the basic union requirements a quality assessment (QA) process is envisaged (e.g. ISAP, GSA, AMS), the review and validation of the results of the QA is strongly recommended.

2 Sampling and design of the selection for the "test of controls"

Once the sample sizes per BUR-matrix cell have been determined, the CB can begin designing and selecting the samples. The assessment needs to be drawn at the level of EAGF and EAFRD. As a rule, there are differences between the design of the controls in the IACS and the NIACS. Therefore, an appropriate number of checks should be carried out for EAFRD and EAGF and for IACS and NIACS.

Based on the professional judgement, the CB may decide on the following concepts.

1) The selected samples[2] are checked exclusively in relation to the selected control.
2) The selected samples are initially checked only in relation to the selected control. The samples can then be used for other selected controls based on professional judgment.
3) The selected samples are fully checked and used for all relevant BUR-matrix cell

The procedure must be documented in the audit strategy and can also be combined (professional judgement).

2.1 Sampling per BUR-matrix cell - further stratification

As long as the different sample sizes are determined at the level of BUR – matrix cell, the CB should design the sample selection similarly. However, more than one intervention is involved to each of the BUR- matrix cells (i.e. horizontal requirements are applied to different interventions while the requirements referring to the systems in place to ensure the eligibility of the beneficiary of the intervention or the payment are grouped at IACS / Non-IACS level and thus, refer to more than one intervention). The CB should assess whether the sample per BUR-matrix cell should be further stratified per intervention taking into consideration the result of the risk assessment (e.g. expenditure of each intervention involved, different bodies applying the control, previous findings on specific interventions, etc.) or a unique sample without further analysis per intervention is needed.

For example, the geo-spatial application (GSA) is identical for all IACS-interventions (EAGF and EAFRD) and no different bodies involved. The procedure has been implemented for a long time and in the past, no or few errors were found. In such cases, the CB may assess the combined risk as minimal and limit the testing up to 25 applications with no further stratification3.

On the contrary, as regards the “Non-IACS administrative controls” BUR-matrix cell, due to the different Regulations in the various interventions, the different administrative controls per intervention and the different bodies implementing the controls, the CB may decide to further stratify the total sample determined at BUR-matrix cell level to the various interventions involved. In such case, it is strongly recommended to focus on the interventions where the results of the risk assessment shown a higher combined risk. A rotation plan can also be applied.

The example below illustrates the steps that the CB may follow in order to cover: (a) the audit

[2] Regarding the sampling unit, see section 11.6.1 Sampling unit in GL 2. Based on the respectively established sampling unit a selected sample can be a transaction, an invoice, a file, a public procurement, parcels ….
[3] A sample selected from the PA’s Quality assessment process is strongly recommended.

needs per BUR-matrix cell, (b) the results of the risk assessment per matrix cell and / or per intervention and (c) the possible synergies that the CB would like to achieve by grouping the testing of the basic Union requirements of the different interventions with other requirements that are considered horizontal.

Step 1:

The BUR-matrix cell selected for the initial sampling is "Eligibility of Interventions". On the basis of the risk analysis and understanding of the processes, the CB arrived at the following:

- There are a total of 6 interventions associated with the cell.
- Based on the rotation plan the CB will test 3 interventions (A, B and C)4.
- The total risk established at the BUR-matrix cell level is "moderate"; thus, the CB should test 35 controls (see table in section 2).
- The CB knows that intervention A contains items with a higher risk profile5 regarding the controls of the eligibility of interventions.
- Items in interventions B and C are of a similar lower risk profile and do not show any specific risks compared with A regarding the controls of the eligibility of interventions.

Therefore, based on professional judgement the sample is as follows6:

- A - 25 samples
- B - 5 samples
- C - 5 samples

The CB proceeds to select the sample from the payments made until 31 March7. One sample equals one payment, and the CB selects each sample randomly8.

The CB proceeds to test the samples for the requirements of the selected BUR-matrix cell only.

Our testing does not reveal any deficiencies.

Step 2

In the second step, the CB analyses the samples selected in Step 1 in relation to the next BUR-matrix cell tested – "Public procurement" – and arrive at the following9:

- The risk per the BUR-matrix cell is "moderate", so the CB need to test 35 controls/public procurements.

[4] The assumption in the example is that rotation is possible and that during a three-year period all interventions are tested.
[5] For example, because it involves more bodies, or a finding was identified in PY testing.
[6] For simplicity the example will not elaborate in major detail as to why an X number of items was selected per given intervention. The decision is up to the CB and should be explained in the audit strategy.
[7] As explained in the audit strategy to spread the workload throughout the year. However, it is strongly recommended that the whole financial year is covered. Thus, an additional testing by the CB might be required at the end of the financial year. The scope and method of the testing should be determined using professional judgement (i.e. selecting additional items, performing a walk/through test, etc.) or the CB may decide to select only part of the sample e.g. 20 items) as a pilot sample from payments made until March and the remaining 10 samples in October.
[8] As explained in chapter 2 above "*Each subpopulation should consist of transactions where the audited BUR is appliable and which were authorized for payment in the audited Financial Year*".
[9] The example assumes that each public procurement procedure in the Step 1 sample is considered as one control; however, that more than one public procurement could be a part of one Step 1 sample (e.g. when two public procurements are carried out within one claim).

- The same interventions as in Step 1 are tested (i.e. A, B and C); However, this time B has the highest risk instead of A.
- The sample for the BUR-matrix cell "Eligibility of interventions" includes 10 public procurement procedures for A, 5 for B and 5 for C.

Thus, in total the previous selection does not meet the minimum number for the sample (i.e. 20 vs. 35). Furthermore, intervention B (where we have the highest risk) only includes 5 public procurements. Consequently, the CB proceeds with additional sampling selecting 15 public procurements from B as:

- The CB needs 15 more samples;
- Interventions A and C are less risky; Thus, the CB considers the existing sample for these interventions sufficient.
- Additional 15 samples in intervention B should be sufficient to determine whether there is a serious deficiency.

Step 3:

The CB analyses the samples from Step 1 and Step 2 for the BUR-matrix cell "Systems to ensure the eligibility of Beneficiary". The situation is as follows:

- The risk for the BUR-matrix cell is "low", so the CB needs 25 controls minimum.
- The CB determined that it needs to test interventions A, B, C and D10.
- Intervention D has the highest risk due to previous year's findings.

The CB considers that the sample selected in Step 1 can also be tested for this BUR-matrix cell given that the eligibility of the beneficiary should be evaluated for all payments. However, the Step 1 sample includes more items than the minimum to be tested (35 vs. 25). Moreover, the CB needs to also select samples for intervention D. Thus, for B and C it uses the same samples selected in Step 1. As regards intervention A, which was considered as high risk in step 1 but less risky in step 3, the CB randomly selects 5 samples out of the 25 which were selected in step 1 and carries out the testing regarding the "Systems to ensure the eligibility of Beneficiary". At this stage, the CB has 15 samples in total11.

The remaining sample of step 3 is selected from intervention D, which was not part of the samples already selected in the previous steps and is considered as more risky regarding the testing of the "Systems to ensure the eligibility of Beneficiary".

Step 4:

The CB analyses the samples from Steps 1-3 for the BUR-matrix cell "System to ensure the eligibility of payments".

The CB considers that a payment is eligible, when the beneficiary is considered eligible and other eligibility conditions are met for each item. This means that the samples in Step 1 and Step 3 cover

[10] The example assumes a situation in which the CB decides to test different intervention for some BUR-matrix cells.
[11] It should be noted that there is a possibility to use the sample from Step 1 fully. The decision on how many controls to test rests upon the CB given the situation in the MS. The example only shows a selection based on the minimum number of controls that have to be selected.

this BUR-matrix cell as well.

According to the risk analysis, the risk for the BUR-matrix cell is “moderate” (i.e. the CB needs to test 35 controls); However, no single intervention from those to be tested (in this case A, B, C and D) has a particularly high risk profile. Thus, the items tested from Step 3 for interventions A, B, C and D (i.e. 25 items) can be used for the testing of the “System to ensure the eligibility of payments”. The additional 10 items missing can be found either for the testing of the previous steps (i.e. extra 10 for intervention A from the Step 1), or additional testing based on professional judgment or synergies from testing that will be selected on the following steps.

The CB identifies twice out of 5 items tested the same deficiency in intervention C. However, as the CB cannot conclude on whether this deficiency is serious, the CB expands its testing with an additional sample from C. Given the nature of the deficiency and all the risk factors considered in relation to C, the CB (based on professional judgement) determines that 5 additional controls will be selected for C.

A summary of the total samples selected per BUR-matrix cell and per intervention is summarized below:

Final sample sizes for steps 1-4

Step	Risk	Minimum sample size (number of controls to be tested)	Selected sample				Total sample size (number of controls that have been tested)
			A	B	C	D	
1	Moderate	35	25	5	5	0	35
2	Moderate	35	10	20	5	0	35
3	Low	25	5	5	5	10	25
4	Moderate	35	15	5	10	10	40
Total unique samples			25	20	10	10	65

2.2 Potential considerations

This section includes additional considerations and should address the most common issues CBs could face with the sampling method presented above.

Oversampling

The CB should carefully decide on the order in which the BUR-matrix cells will be tested. While performing the risk analysis and the understanding of the processes, the CB should determine which synergies are between different BUR-matrix cells. Thus, the CB would be able to identify the BUR-matrix cells that would have the same population and consequently to draw the sample from the same populations.

In the example above, it is observed that the sample for Step 3 can serve the audit needs for the testing in Step 4 and both are usable for Step 1. As such the CB could start by sampling from the BUR-matrix cell "System to ensure the eligibility of payments" which would also cover the BUR-matrix cells "Systems to ensure the eligibility of Beneficiary" and "Eligibility of Interventions". The different selection path could potentially lead to lower total samples.

Further stratification at intervention level

Depending on the situation in each MS, the CB may conclude that there are sub-populations with varying risks within each intervention. An example of this could be in Step 2 above with public procurement (e.g., procurements above / below threshold may be checked by different bodies; thus, have different associated risks). In such cases, the CB is recommended to assess the associated risks accordingly.

Additional sampling

As described in Steps 2-4 above, additional sampling will often be required to test and evaluate all the BUR-matrix cells.

Additional sampling should always be used in case:

a) The sample selected does not reach the minimum required number according to the table
b) The sample selected does not cover all interventions selected for testing
c) The sample selected does not follow the conclusions of the risk analysis (i.e. there are less items from an intervention with a higher risk profile than from the lower risk profile)

The CB may consider an additional sample in case:

d) The sample selected does not permit to determine whether the deficiency identified is serious
e) The procedures of the PA/Coordinating Body changed during the financial year

In the case of d) and e), the CB may find other alternatives to conclude on AO2 (e.g. cooperation with the PA, walk-through test). The CB should decide which action to take based on professional judgement.

Rotation

The CB is strongly recommended to test all the BURs associated with the BUR-matrix cells in their first year of testing and apply rotation from the following years onwards. Nevertheless, for CBs that have several years of experience, a rotation could be applied in the first year if:

- synergies with the previous year's findings can be determined;
- the processes within the governance systems did not significantly changed;
- the results of the risk assessment indicate a minimal / low combined risk.

The CBs should describe their reasoning in detail in their audit strategy.

After the first year of testing, the CB could determine a rotation plan as described in Chapter 11.6 of GL 2 and in this annex. It should be noted that the rotation plan is suggested for a three-year period and within these three years the CB should cover all the interventions associated with all the BUR-matrix cells.