**\*IMPORTANT:** This FAQ document has been prepared to provide the auditor practical answers to frequently asked questions on statistical sampling in an annual audit. This document should be read in conjunction with Sections 7044, 7044.1 and 7044.2 of the OAG Annual Audit Manual (AAM). Auditors are strongly encouraged to communicate with Audit Services and/or the OAG internal statistics specialist for any contentious matters.

1. **What are the differences between statistical and non-statistical sampling (NSS)?**
* Both are considered audit sampling and thus can be used to conclude on the sampled population. At the OAG, statistical sampling is almost always done with Monetary Unit Sampling (MUS) using IDEA although classical variables sampling can also be employed though the sample sizes are likely to be considerably higher.
* With NSS, every item has an equal chance of selection regardless of how big or small its book value is. Conversely, with MUS, the bigger an item is, the more likely it is to be selected. As such, MUS samples are likely to capture a greater proportion of the value in a population.
1. **What elements should I consider in my decision of choosing one type of sampling over the other?**
	* NSS enables the auditor to use haphazard sampling if necessary, although more rigorous (and bias free-free) selection approaches using IDEA, excel, or other selection tools are recommended where possible. This allows auditors to still use audit sampling even when there is no computerized record of the population, or no means to enter such a file into IDEA, excel, or other sampling software.
	* Statistical sampling gives the auditor greater control over the exact values of sampling parameters such as confidence level, basic precision pricing (BPP), and high value extraction criteria.
	* Statistical sampling directly assesses the sampling risk associated with the sampling procedure whereas NSS relies on less precise assessments of sampling risk.
	* See a summary of differences between statistical and non-statistical sampling in *Appendix A* – *Comparison between statistical and non-statistical audit sampling* at the end of this document
2. **Based on the results of the substantive analytical procedures I performed on a population, I know that there is a significant misstatement in the population but I can’t quantify the amount based on the information I gathered for my analytics. Can I use statistical sampling to quantify an error that is found through my analytics?**
	* No. Audit sampling may only be used to provide the auditor with a specific level of evidence regarding the reasonableness of one or more assertions about a financial statement amount that is consistent with the test objective. In other words, it can only be used to conclude on whether or not the most likely overstatement/understatement of a population does not exceed a certain range, and not to estimate a value or to quantify a misstatement.
	* Important reminder (OAG Audit 7044.1): Audit sampling is not usually the appropriate audit approach if estimated misstatement is greater than tolerable misstatement or even if it is very close to it (i.e. estimated misstatement > 70 percent of tolerable misstatement) or if we estimate that the population has a high misstatement rate (i.e. > 5 percent).
	* However, there may be situations where we cannot rely on controls or analytics and there is no basis for targeted testing. Audit sampling may be the only available source of audit evidence. In such cases, it is important to justify your decisions in the audit file.
3. **As per our AAM, individually significant items, either by nature (i.e., risk) or monetary value, are targeted tested when, in our judgment, acceptance of any sampling risk is not justified. What kind of item could I deem to be significant by their nature?**
	* Such items may include, but are not limited to: transactions related to an agreement with very complex terms and conditions, transactions incurred in a foreign currency when the entity transacts mostly exclusively in Canadian dollars, a transaction requiring significant judgment or a significant or complex management estimate, a transaction that was concluded with a related party or that was made outside of the normal course of business, accounts receivable from a third party that is facing cash flow issues, non-monetary transactions, etc.
4. **My population contains both positive and negative values. What value should I use to calculate the sample size for my population, the net amount or absolute value? Do I need to take out negative values if I only want to test positive values?**
	* Positive and negative values in a population may have very different risk profiles. As such it is not recommended to combine them together in a single audit sampling population without obtaining assurance that the risk profiles are indeed equivalent. Separate samples would normally be drawn from the positive and negative value components of the population.
	* If and only if the risk profiles are equivalent, the auditor could then sample from an absolute value representation of the population. However, even though items are selected from absolute values, the sample size should be determined from the net value population. Likewise, the evaluation should be done against the net value population in that scenario.
5. **Why would I want to remove immaterial items from the sampled population?**
	* Removing immaterial items from the sampled population provides the auditor with better chances of testing “more significant” and “riskier” items and reduces sampling risk.Sampling risk is the possibility that the sample drawn is not representative of the population and that, as a result, the auditor reaches an incorrect conclusion. A very small misstatement noted on an immaterial item will likely represent a significant tainting and result in a very high projected misstatement, which may not be representative of the population.
6. **In which circumstances may I elect to use a tolerable error that is lower than performance materiality?**
	* Such circumstances may include, but are not limited to: when there is a lower materiality determined for a specific line item or when testing a population used that supports a significant accounting estimate (for example, post-employment benefits), or in response to account-level qualitative factors (e.g. debt covenants, important trends and ratios, etc.).
7. **Does the expected error need to be at least equal to the SUM posting threshold?**
	* No. The expected error can be as low as 0. The expected error is based on the team judgement, the internal control framework assessment, experience from prior years, etc. It is possible that, based on the auditor’s judgment, an expected error of 0 represents his best estimate.
	* However, should the Most Likely Error (MLE) exceed the expected error, it is likely that your sample is now too small to conclude on the sampled population and you have to increase your sample size. You cannot conclude positively on your population if you have exceeded your expected error.
8. **One of the sampling parameter in IDEA is called “basic pricing precision”. What is it? Can I change it?**
* Basic pricing precision (BPP) specifies the maximum error that is associated with an audited item. IDEA defaults to a BPP of 100% which means that no error is expected to exceed the full booked value of an item. Lowering BPP at planning reduces the sample size, but if any errors are found that exceed the planning BPP, the sample size will have to be increased and additional audit work will be required. If you**r** knowledge of the audit entity leads you to assume errors are likely to be small, you may choose to reduce the BPP. However, if you expect errors to be very large (i.e. error exceeding 100% of the booked value of an item), you may choose to increase BPP, which would increase the sample size. The auditor is strongly encouraged to consult the OAG internal statistics specialist before changing the BPP.
* Example of where reducing the BPP might be appropriate: testing on payroll expenses of an entity that has a very strong control environment and an effective internal control framework. Generally, we expect to encounter few errors in payroll expenses, and in the event that we identify a misstatement, these would not be significant.
1. **IDEA calculated a sample size of 2. Is this sufficient?**
	* CAS 530, paragraph 7, states that “The auditor shall determine a sample size sufficient to reduce sampling risk to an acceptably low level.” The auditor needs to ensure that the sampling risk is sufficiently low. In case of doubt, the auditor is strongly encouraged to consult the engagement leader, Audit Services or the OAG internal statistics specialist.
	* There is also another element that the auditor should consider: if the sample size calculated by IDEA is very low, the auditor should question himself on whether audit sampling is the best approach. This could be an indication that substantive analytical procedures or targeted testing might be more appropriate.
2. **During my testing, I noted an error which I extrapolated. The most likely error calculated by IDEA was greater than the initial expected error. As a result, I elected to select an additional sample using the net most likely error as the new expected error. However, the aggregate of the revised expected error and the haircut is now greater than 50% of overall materiality.**
3. **Am I required to communicate with Audit Services prior to proceeding with the approach?**
* Yes. The policy in OAG Audit 7044 is applicable in this case and the auditor is required to communicate with Audit Services prior to selecting the new sample. This policy does not only apply to the original expected error, but also on the revised expected error.
1. **Based on OAG Audit 7044.1, I need to add 10 items to the sample size calculated by IDEA to allow for the incremental testing to be appropriate. How can I “force” IDEA to select a sample size different than the one it calculated?**
* Should the auditor want to “force” the sample size in IDEA, he must manually calculate the sample interval by dividing the population by the number of test**s** he wants to perform and input this value in the “Sample interval” field in the *Monetary Unit Sampling – Extract* window in IDEA.
* In the example below, IDEA would select 20 items: (population of $40,905,070.25 / 20 items = sampling interval of $2,045,253.51)



1. **As per guidance in OAG Audit 7044.1 and OAG Audit 7044.2, systematic selection (fixed interval in IDEA) is not appropriate when the characteristics of interest are not distributed randomly throughout a population. Can you provide examples of periodicity (i.e., regular patterns in the data) for which random selection (cell selection in IDEA) would be a better option?**
* Listing of payroll expenses where transactions are always posted in the same order (alphabetically, by employee numbers, by classification of employees, etc.), listing of expenses where transactions are posted in the G/L every night by cost centers or by regional offices in the same order, etc.
* Systematic selection is intended to reasonably approximate true random selection. Cell selection in IDEA is, in fact, a true random selection.
1. **My population contains amounts that are nil. Do I need to test them?**
* In this situation, the auditor must apply his professional judgment. Should the auditor determine that there is a potential risk of significant understatement or a risk of fraud, he must gain an understanding of these nil amounts and assess whether they are indicative of a potential fraud or significant misstatement.
1. **One of the item in my sample of expenses is recorded in the wrong fiscal year. Should I extrapolate it?**
* It depends on the objectives of the test. It is very important that the auditor understands the objectives of the test and the population and that he clearly defines the purpose of his testing. Generally speaking, statistical sampling is mostly used for the existence/occurrence and accuracy assertions and separate audit procedures are performed to obtain assurance on the cut-off assertions (e.g. testing subsequent payments and receipts); therefore, cut-off is not always one of the primary objectives of the test.
* The sampled population needs to be homogenous, meaning that all elements should bear the same level of risk. Generally speaking, a journal entry recorded in the first or in the last period of a fiscal year is more prone to be recorded in the wrong fiscal year than a journal entry recorded in the middle of the year. Should that be the case for the population being subject to the test, it would be very difficult to conclude that the cut-off risk is homogenous in the population and therefore, the misstatement should not be extrapolated. However, it is important that the auditor investigates the nature and cause of the identified misstatement and that he evaluates their possible impacts on the other areas of the audit, including the risk assessment.
* It is to be noted that this doesn’t necessarily mean that the testing does not provide the auditor with some assurance on the cut-off assertion if this is being verified as part of the testing. For instance, if the auditor seeks a high level of comfort for the existence/occurrence and accuracy assertions, it is possible that based on his professional judgment, he rightfully concludes that his testing also provides him with a “low” level of assurance for the cut-off assertion.
1. **One of the item in my sample is recorded in the wrong G/L account. Should I extrapolate it?**
* It depends on the objectives of the test and the population. It is possible that some types of presentation & disclosure (classification) errors should not be projected while other types should be extrapolated. For example, for a given test, the auditor could determine that it is not a projectable error if the transaction is classified in the wrong G/L account but it rolls up to the same FSLI, but that it meets the definition of a misstatement if the transaction rolls up in a the wrong FSLI. This is why it is very important that the auditor obtains a good understanding of the test objectives and that he documents a clear definition of an error.
* The auditor could also determine that he obtained sufficient assurance for the presentation & disclosure (classification) assertion from the other audit procedures he performed and that this assertion is not one of the objective of the test. Should that be the case, the auditor should obtain a good understanding of the source of the error and assess whether the transaction being classified in the wrong G/L account indicates a risk of misstatement that was not previously identified or the need to revise the risk assessment and whether additional procedure are needed.
1. **One element of my sampling has been cancelled and is no longer a valid test. How do I select a new item?**
* There are three options that are acceptable. The auditor should use his judgement to determine which method is the most appropriate under the circumstances.
1. Select a new item randomly in the population. This method is acceptable, but it is not the most rigorous method. Statistical sampling selects one item per sampling interval. When an interval item is replaced with a random item in the population, chances are that this new item comes from a different interval than the item that must be replaced. Therefore, the auditor faces a certain risk that his testing will not entirely cover the population.
2. Replace the item with by selecting the item that is immediately after the first item being replaced in the population. By doing so, the auditor will ensure that he replaces the item with another item from the same interval. However, the weakness of this method is that it does not take into account the dollar value of the new item. When IDEA selects the sample, high-value items have greater chances of being selected than low-value items (each dollar representing one chance of being selected). By using this method, the statistical probability is not fully respected.
3. Re-select an entire new sample and replace the cancelled item with the corresponding item in the new sample. For example, if the 7th item from the initial sample needs to be replaced, the auditor will replace the item with the 7th item from the new sample. This method is the most rigorous and best alternative, given that the replacement item will come from the same interval and the statistical probability will be respected.
4. **Is it important that I document the IDEA sampling history in the Teammate file?**
* Yes. According to "experienced auditor principle", the auditor should document the manipulations performed on the database and the sampling history so that an experienced auditor could re-perform the same steps and obtain the exact same sample. One efficient method to do so it is to export the IDEA history in a text file and either import the file in IDEA or copy/paste the content of the file in the testing working paper.
* Steps in IDEA: click on “History” on the menu, then on the “Export” icon in the history window.



1. **What should I do if one of the element of my sample is a batch of multiple transactions?**
* The auditor needs to ensure that the “batch” is homogenous to the other elements in the population. If it is, the auditor needs to determine whether an element of the batch or the whole batch should be tested, based on his definition of “sampling unit” in step 2 of the eight-step approach. Should only one element of the batch be tested, the auditor needs to identify which transaction was selected by IDEA for testing. IDEA selects a specific dollar for each selected item (column “MUS\_REC\_HIT” in the IDEA sample database). By using this value, the auditor can easily find the transaction related to the dollar selected by IDEA by calculating which transaction contains the nth dollar of the batch.
1. **What should I do if my selection contains an item that is not representative of the population?**
* The auditor must use his professional judgment. If several items in the sample are not representative, it may be a sign that the auditor needs to “clean up” the population. In order to be able to identify all of these non-representative elements in the population, he may need to request additional information from the entity. The sampling would need to be re-performed once the population is “cleaned”, because the first sample was drawn out from a population that did not solely consist of homogeneous elements. However, if only one item in the sample is not representative of the population and the auditor has conducted a detailed analysis of the population to ensure that this was an isolated item, the auditor may decide to replace only the item at issue. It is important that the item is replaced, because it becomes excluded from the population and the sample, and therefore the size of the tested sample would no longer be sufficient.
* In addition, the auditor must consider the risk of completeness of the other testing populations. For example, if items that are not representative are found in the population and these non-representative items are tested in another procedure, the auditor needs to ensure that these non-representative item are properly covered by the other audit procedures.
1. **Can I stop a test after testing only a few items of the sample?**
* If no error is found, the auditor needs to test the entire sample in order to obtain sufficient appropriate audit evidence that will allow him to conclude on the test.
* If significant errors are found early in the testing, the auditor should consider stopping the test and asking the entity to find the source of the differences and correct all the errors in the entire population. Once the entity has corrected the errors, the auditor must select another sample, to avoid the risk that only the items that were sampled initially were corrected by the entity and that significant misstatements remain in the population. Prior to selecting the new sample, the auditor should determine whether sampling parameters must be modified (for example, increasing the desired level of evidence).
1. **Can you provide examples of instances where the audit team would not need to extrapolate an identified misstatement?**
* There are very few circumstances. Not extrapolating misstatements should only happen in extremely rare circumstances. Before the auditor concludes that the identified misstatement should not be extrapolated, he is strongly encouraged to consult with Audit Services or the OAG internal statistics specialist.
* Important reminder (OAG Audit 7044.1): When the auditor finds an error, he may tend to classify it as a “type of error” and explain why this “type of error” is not applicable to the whole population. However, it is nonetheless an error identified among a population containing homogenous items. The important thing is not the “type of error”, but the fact that a misstatement has been identified. The misstatement noted is not representative of only errors of the “same type”, but also of all “other types” of errors that may exist in the population. Therefore, the identified misstatements must almost always be projected against the whole population.
1. **The sample selection has been performed by another auditor. Do I need the sampling database to be able to extrapolate the misstatements I identified in the testing?**
* No. There are two ways that the auditor can calculate the most likely error without having the IDEA sampling database:
1. Using IDEA: the auditor must prepare an Excel spreadsheet with two columns, one listing the “book values” and the other one listing the “audited values”. Then, the auditor must import this Excel database in IDEA. In the menu, the auditor should select “Sampling 🡪 Monetary Unit 🡪 Evaluate 🡪 Single sample”. In the new windows, the auditor must manually enter the sampling settings that were used to calculate and extract the selected sample.
2. Manually (the auditor should be extra careful when manually calculating the projected misstatement to avoid making mathematical errors): first, the taintings must be calculated individually for each item in the population (tainting being the difference between audited value and recorded value calculated as a percentage of the recorded value). For example, if the recorded value is $150 and the audited value is $120, this would represent a tainting of 20% (difference of $30 divided by the recorded value of $150). Then, the sum of the taintings in the sample must be multiplied by the sampling interval. The result obtained represents the net most likely error.
3. **I noted several errors noted in my sample. I asked the entity to correct errors in the entire population. Can I limit my additional review to only those items that have been corrected?**
* No. Nothing indicates that all of the erroneous items have been properly corrected by the entity or that the entity did not miss any other misstatements. Also, there is always a possibility that the entity corrected only the transactions that were tested by the auditor. In this situation, the auditor should reject the first test, because it is no longer valid. The population has been modified and therefore, the sample extracted from the initial population is no longer representative of the final population. Rejecting the test does not mean deleting it from Teammate. The auditor must keep in TeamMate the work performed so that audit findings are properly explained and supported. Then, using the new population, the auditor must re-perform the test, using a new sample. The items that were already tested no longer count as valid test (i.e. if IDEA calculates 15 items, the auditor must test 15 new items). If misstatements are found on these 15 new items, the auditor must extrapolate them against the new population, and the auditor must re-evaluate the results of his statistical sampling. When asking the client to “clean-up” the population, the auditor should explain the potential impact and delays on the audit if the entity does not perform a thorough review of the population.

# Appendix A – Comparison between statistical and non-statistical audit sampling

*This document was developed to provide a tool to quickly identify significant differences between statistical sampling and non-statistical sampling for the auditors. For additional details, please refer to OAG Audit 7044 to 7044.2.*

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|  | **STATISTICAL SAMPLING** | **NON-STATISTICAL SAMPLING** |
| **GENERAL INFORMATION** |
| **Sections of the Annual Audit Manual** | *7044 – Audit Sampling* and *7044.2 – Eight Step Approach to Performing Statistical Audit Sampling* | *7044 – Audit Sampling* and *7044.1 – Eight Step Approach to Performing Non-Statistical Audit Sampling* |
| **Documentation of the work performed** | Document the 8 steps using the “Test of Details Template” of the Office [*OAG-Test\_of\_Details\_15504E.xlsm*](http://cmsprd.oag-bvg.gc.ca/intranet/financial-audits/templates/OAG-Test_of_Details_15504E.xlsm) | Document the 8 steps using the “Test of Details Template” of the Office [*OAG-Test\_of\_Details\_15504E.xlsm*](http://cmsprd.oag-bvg.gc.ca/intranet/financial-audits/templates/OAG-Test_of_Details_15504E.xlsm) |
| **Factors to take into consideration when choosing between the two methods** | 1. Provides more flexibility when selecting the test parameters (e.g. basic pricing precision).2. Reduces bias as IDEA selects the sample for the auditor. | 1. Enables the auditor to choose a sample from a population in a format that cannot be imported into IDEA.  |
| **STEP 1 – DETERMINE THE TEST OBJECTIVE** |
| *No significant differences.*  |
| **STEP 2 – DEFINE THE POPULATION AND SAMPLING UNIT** |
| *No significant differences.* |
| **STEP 3 – DEFINE MISSTATEMENT** |
| *No significant differences.* |
| **STEP 4 – DETERMINE SAMPLE SIZE** |
| **Calculate sample size** | Calculated with IDEA. | Calculated with the “Test of Details Template” ([*OAG-Test\_of\_Details\_15504E.xlsm*](http://cmsprd.oag-bvg.gc.ca/intranet/financial-audits/templates/OAG-Test_of_Details_15504E.xlsm)*)*with the exception of the Supplemental level of assurance which is calculated with IDEA. |
| **STEP 5 – DETERMINE SAMPLE SELECTION METHOD** |
| **Sampling method** | The Office preference is to use MUS\*. Two options are available: systematic (fixed interval) and random (cell selection)\* In IDEA, the auditor must use the “monetary unit sampling” sampling option. | Systematic (fixed interval), random\* or haphazard\* If the auditor decides to use IDEA, he should use the “random sampling” function. |
| **STEP 6 – EXECUTING STATISTICAL SAMPLING OR NON-STATISTICAL SAMPLING** |
| **Unused items** | N/A in the context of statistical sampling.(If the unused item has 0 value, it will never be selected by MUS) | If the item selected for testing was not used, the auditor should verify the item has not been used (i.e., it is not a voided or unlocatable item) and replace the unused item with another item. |
| **STEP 7 – ASSESSING MISSTATEMENTS AND PROJECTING MISSTATEMENTS TO THE POPULATION** |
| *No significant differences.* |
| **STEP 8 – EVALUATION OF SAMPLE RESULTS** |
| *No significant differences.* |