

Methodology for the Audit of Spreadsheet Models

***Developed by
H.M.Customs and Excise Computer Audit
Service***



Version 2 - April 2001

Introduction

This audit methodology was first introduced in 1992 with the acquisition of *Spreadsheet Auditor* - the first standard audit tool for spreadsheets used in H.M.Customs & Excise.

Since that time, the complexity and functionality of spreadsheets has reached levels of sophistication that few could have imagined even 5 years ago. The consequent threat posed to businesses by such powerful "end user" applications, mainly in the hands of untrained users, is immense.

Our methodology was, therefore, substantially revised and reissued in June 1999 to coincide with the release of our newly developed spreadsheet audit tool, **SpACE**.

This current revision has been made in response to the experience of computer systems auditors and their trainers in H.M.Customs and Excise using both the methodology and **SpACE** over the past 2 years.

The main changes are the simplification of the methodology into a sequence of steps for the conduct of a spreadsheet audit. It has also been reformatted into the following 3 sections reflecting its purpose as practical aide to the auditor.

Overview of Methodology - stating the purpose of each stage, this may be used as an aide memoire by auditors;

Commented Version - a reminder of the purpose and conduct of each stage of the audit.

Worksheet Version - also available on disk, parts or all of which may form the basis of the auditors working papers.

The steps are now more closely aligned with the unfolding **SpACE** menu options and, if followed, will ensure that areas of risks are identified; evaluated; investigated if necessary; and the findings properly reported and followed up.

As such this represents the department's current statement of best practice in the audit of revenue accounting and other spreadsheets. Please forward any comments for future revisions to :

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Overview of Methodology

(page numbers refer to Commented Section)

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| ▪ to record your testing; the outcomes and the recommended action. | |
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Commented Version

| Question / Assurance Issue | Comment |
|--|---|
| <p>1. Is Testing Necessary?</p> | |
| <p>Purpose :</p> <ul style="list-style-type: none"> ▪ to evaluate whether you need to test the workbook; ▪ if so, can you check it manually; or ▪ do you need take up a copy of the workbook for testing with <i>SpACE</i>. | |
| <p>1.1 How much is at risk?</p> <ul style="list-style-type: none"> ▪ in this workbook alone? ▪ if this workbook is used as a template? ▪ if business decisions are based on the output? ▪ does it have a significant position in the audit trail? | <p>This deals with the amount of risk - directly in monetary terms for an accounting spreadsheet; or indirectly in the impact on the business and personnel for other types of workbook where operational decisions are based on the outputs.</p> <p>If negligible, you may not need to bother checking the spreadsheet.</p> |

| Question / Assurance Issue | Comment |
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| <p>1.2 Developer's knowledge</p> <ul style="list-style-type: none"> ▪ who designed this workbook? ▪ what evidence is there that they understood the business or accounting issues that it addresses? | <p>This and subsequent questions address the degree of risk. If the developer does not fully understand the business, there is a high risk of errors in the logic and design of the spreadsheet.</p> <p>At an early stage you should interview the developer / user to obtain an overview of the structure and purpose of the spreadsheet model. This should enable you to make a judgment as to their competence.</p> |
| <p>1.3 Design</p> <ul style="list-style-type: none"> ▪ what evidence is there that the spreadsheet was designed using a design methodology? | <p>For example : are the areas for input of raw data segregated from the computational areas? Is there a separate sheet containing a table of contents and a description of the purpose of the model? What evidence of testing and other documentation exists - see below?</p> |
| <p>1.4 Testing</p> <ul style="list-style-type: none"> ▪ what evidence is there that the spreadsheet was thoroughly tested before being brought into use; and ▪ thoroughly tested again each time a material change was made? ▪ was the testing adequate? | <p>If testing was thorough, the risk of undetected error is lower. If testing of the initial model and/or subsequent amendments was sketchy or non-existent, the risk of error is much higher.</p> <p>You must consider the adequacy as well as the mere fact of testing as evidence that the model or application presents a low risk of error.</p> |

| Question / Assurance Issue | Comment |
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| <p>1.5 Documentation</p> <p>Has the developer documented the spreadsheet, to make clear :</p> <ul style="list-style-type: none"> ▪ what it's for; ▪ what it does; ▪ how it does it; ▪ what assumptions were made in its design; ▪ what constants are used and where they are held; ▪ who developed it; ▪ when; ▪ when and how it has been changed since being brought into use; ▪ the presence and purpose of any macros? | <p>The better the documentation, the less scope there is for error or misunderstanding between the developer and the user.</p> <p>A review of current documentation will help in risk assessment and will help you answer the questions above.</p> <p>A good practice in design is to include the documentation as part of the workbook on a separate sheet.</p> <p>Again, consider the quality as well as the existence of documentation in your risk assessment.</p> |
| <p>1.6 Manual Testing</p> <ul style="list-style-type: none"> ▪ can the workbook be checked manually using pencil & calculator | <p>If you are certain that :</p> <ul style="list-style-type: none"> ▪ what you are checking is the whole story and consistent with the results of your credibility checks; ▪ there are no complexities lurking behind what appears to be a small, simple schedule; and ▪ the source documents for all the figures being manipulated, are available to you... <p>then you probably need to do no more than the routine audit trail checks of the posting of figures to, from and through the spreadsheet.</p> |

| Question / Assurance Issue | Comment |
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| <p>2. So, You need to Take a Copy of the Spreadsheet</p> | |
| <p>Purpose :</p> <ul style="list-style-type: none"> ▪ to ensure security and integrity of your PC; ▪ the audit process; and ▪ the original copy of the spreadsheet you are checking. | |
| <p>2.1 Virus Checking</p> <ul style="list-style-type: none"> ▪ virus check the source disk. | <p>Never assume that a disk from any source, internal or external, is virus free.</p> <p>Ensure that the virus checking software you are using can cope with the macro viruses affecting Microsoft Office components and that it is set up to check all files on the disk including the contents of compressed files. The default on most virus checking software is simply to check executable files.</p> |

| Question / Assurance Issue | Comment |
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| <p>2.2 Securing a copy</p> <ul style="list-style-type: none"> ▪ take up a copy of the original spreadsheet; ▪ ensure that the spreadsheet you are testing has been saved in Excel format and take up a copy in its native format; ▪ make a second “working copy” for subsequent testing and put the first in a safe place. | <p>You should not normally take up the original.</p> <p>The <i>File, Save As</i> dialogue on the source spreadsheet program will tell you what formats are available. Some spreadsheets fail to convert all functions / features to Excel equivalents, but will report any such failures. Make a note of these & use the original spreadsheet program to view the native copy to see what has been lost.</p> <p>The <i>File, Open</i> dialogue on your Excel installation will tell you what you can read with it. You may need to obtain and install additional import filters to allow your installation to read files in formats such as Lotus 1-2-3 WK4 / WK5, Quattro Pro, etc. Contact your IT support staff or computer audit service for assistance if needed.</p> <p><i>SpACE</i> will make its own working copy of the spreadsheet.</p> <p>If you want to browse the spreadsheet in Excel during the audit, take a further copy for this purpose. The workbook might contain macros which change it irreversibly when opened.</p> <p>For this reason your first look at a spreadsheet to be tested should always be made using <i>SpACE</i>.</p> |

| Question / Assurance Issue | Comment |
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| <p>2.3 Receipts</p> <p>Make sure you give a receipt which shows :</p> <ul style="list-style-type: none"> ▪ a description of the media; ▪ full DOS/Windows file specification of the original; ▪ the machine from which the copy was taken; ▪ the program which created it; ▪ the stated purpose / period of the model; and ▪ the fact that what you have is a COPY. <p>You may not need to do this in some audit areas - but consider the need for a chain of evidence from the original spreadsheet to your test copy before dismissing this step.</p> | <p>This is important in cases where there is a risk of a dispute about what has been done and what the effects are (i.e. any case in which you might find something wrong!)</p> <p>You need to show (for example) :</p> <p><i>“1 (one) 3½ in. diskette marked VAT COPY SPREADSHEET containing a copy of file F:\Accounts\VAT>Returns99\VATJAN.WK5 from the Compaq portable computer operated by Joe Bloggs, Financial Accountant. The file is said to have been created by Lotus 1-2-3 '97 and to contain the Recoverable VAT calculation for the period 1 November 1998 – 31 January 1999”</i></p> |

| Question / Assurance Issue | Comment |
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| <h3>3. Risk Analysis & Audit Planning</h3> | |
| <p>Purpose :</p> <ul style="list-style-type: none"> ▪ to plan and target your checks the areas of significant risk; ▪ to estimate the time required for the audit; ▪ to consider whether specialist assistance is required. <p>We recognise that many auditors only get involved at this stage - once the workbook has been taken up. In this case you should be considering whether you should be involved at all - or whether the spreadsheet can be returned to the non-specialist auditor for conventional checking. Is the colleague who asked you to check this spreadsheet able to provide all the information from the Is Testing Necessary stage? If not, what justification is there for the use of your time?</p> | |
| <p>3.1 Initiate SpACE audit and review sP WB Data.</p> | <p>The number of sheets, constants and formulas will give an early indication of the scale of the audit.</p> |
| <ul style="list-style-type: none"> ▪ if recalculation is set to manual note significant totals for later comparison; | <p>Manual Recalculation is a potential risk, as cases are on record of users changing the figures in a spreadsheet, failing to recalculate the totals and making important decisions on the basis of the incorrect totals. The risk of error increases if recalculate before save / recalculate before print are not set.</p> <p>If Iteration or manual recalculation is used in the workbook being checked then Excel / SpACE will be operating in the same way.</p> <p>Before you proceed you must note significant "bottom line" figures if recalculation is set to manual since SpACE processes force recalculation.</p> |

| Question / Assurance Issue | Comment |
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| <ul style="list-style-type: none"> ▪ survey each sheet listed - Go To... the last cell to establish the active range and the apparent purpose of sheet; | <p>You may be able to identify some sheets at this stage that have no impact on the main purpose of the workbook or the area of the business that is the subject of this audit- e.g. notes and memos. These can be ignored to save valuable time.</p> |
| <ul style="list-style-type: none"> ▪ hidden sheets - why they are hidden? | <p>And how? SpACE will tell you if sheets have been hidden using the menus (Hidden) or by macro programming (XL Very Hidden)</p> |
| <ul style="list-style-type: none"> ▪ begin to sketch a diagram of how the worksheets appear to interact. | |
| <ul style="list-style-type: none"> ▪ check for presence of macros; | <p>Consider whether you are qualified to check these or whether you need to call for assistance.</p> |
| <ul style="list-style-type: none"> ▪ check for links to other workbooks to ensure you have the full set; | <p>You will have to go back to the source to obtain any "missing links".</p> |
| <ul style="list-style-type: none"> ▪ check the list of names for indications that advanced or inappropriate functions have been used. | <p>Refer to the Help on Excel Naming Conventions. Again, you may need to ask for help in checking the correct use of advanced Excel functionality.</p> <p>Functions such as Goal Seeking and Solver are powerful tools for planning, forecasting and problem solving. Consequently you would not expect to find them in a model for financial accounting.</p> |
| <p>3.2 Batch test sheets identified for detailed testing</p> | |
| <ul style="list-style-type: none"> ▪ where sheets are based on a common template, batch test only the first at this stage. | <p>At the Detailed Testing stage you should test one sheet in depth and then use <i>SpACE Comparisons</i> to identify any significant differences in other sheets based on the same template.</p> |

| Question / Assurance Issue | Comment |
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| <ul style="list-style-type: none"> ▪ use <i>SpACE</i>, <i>Locate Sheets</i> to review each sheet set in turn. | |
| <ul style="list-style-type: none"> ▪ review sP WS data for each and note: <ul style="list-style-type: none"> ⇒ links to other sheets; ⇒ Formula Cells without Dependants which are significant "bottom line" figures. ⇒ the presence of features such as consolidation, pivot table or scenarios - which may take time to check or are inappropriate to the purpose of the model or application. | <p>to confirm or correct your diagram of the model.</p> <p>note the location of these on your diagram. Those which are NOT bottom line must be checked to ensure they have not been omitted from the calculation chain by mistake ?</p> <p>Excel allows data to be consolidated from a number of sources into a worksheet. By default, it shows the results but no formulas – the consolidation is performed in memory and the results are simply placed in the desired area of the worksheet. Clearly, this could give rise to problems in checking how this has been done, and there is a high risk of error.</p> <p>Pivot Tables quickly summarise large amounts of data - either from within the Workbook or via ODBC links to external data sources. They use formats and calculation methods defined by the user. If they are used, and have a significant impact on the results of the model you are testing you will need to use Excel's features to find out how they have been used and what calculations they perform.</p> |
| <ul style="list-style-type: none"> ▪ review the maps and formula lists to note <ul style="list-style-type: none"> ⇒ main data capture areas ⇒ significant formulas; ⇒ the pattern and construction of each sheet; ⇒ apparent anomalies in the pattern; ⇒ evidence that protection has been used carefully. | <p>The number of unique formulas and the complexity of the functions used will give a much better indication of the time required to check each sheet.</p> <p>If the sheet was protected - see above - and the AMAP shows formula cells are locked whilst data capture cells are unlocked this is a strong indication of intelligent life.</p> <p>However, in such cases we have found that protected formulas have been overwritten proving that sheet protection had been switched off while it was being updated.</p> |

| Question / Assurance Issue | Comment |
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| 3.3 Complete your diagram of the model | This will form an important part of your audit documentation. |
| <ul style="list-style-type: none"> ▪ comment on the function of each sheet and the logic of the model. | |
| <ul style="list-style-type: none"> ▪ use Route Finder, tracing selected items from data capture areas to the "bottom line", to confirm your understanding is correct. | Don't get bogged down in detailed checking of formulas at this stage - your purpose is to identify the areas of greatest risk for detailed checking at the next stage. |
| 3.4 Stop or Go? | Consider whether impact and likelihood of error in the model or application justifies the effort and resources needed to test it before proceeding. |
| 3.5 Plan the detailed testing | |
| <ul style="list-style-type: none"> ▪ make a prioritised list of the areas of the workbook that you need to check in depth; | |
| <ul style="list-style-type: none"> ▪ estimate the time required to carry out the checks; | |
| <ul style="list-style-type: none"> ▪ identify additional resources required to complete the audit. | e.g. specialist assistance in interpreting advanced functions and macros. |

| Question / Assurance Issue | Comment |
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| <p>4. Detailed Testing</p> | |
| <p>Purpose :</p> <ul style="list-style-type: none"> ▪ to assure the integrity and accuracy of the model by completing the planned programme of checks; ▪ to check that the spreadsheet model is doing what the user intended and what the business requires. <p>Health Warning : detailed testing can be extremely laborious - even with the assistance of <i>SpACE</i>! Ensure that you have allowed sufficient time or target your tests at the areas of greatest risk if time is limited.</p> <p>Please note that <i>SpACE</i> will not check anything for you - its function is to enable the auditor to visualise and check the spreadsheet more efficiently and effectively.</p> | |
| <p>4.1 Check areas identified for Detailed testing</p> | |
| <ul style="list-style-type: none"> ▪ are the unique formulas arithmetically & logically correct? | <p>Use the UFlist as a working document as you check through these - remember you can annotate it with your comments and findings.</p> |
| <ul style="list-style-type: none"> ▪ are the formulas which are copied arithmetically and logically correct?· | <p>Use Excel's Audit toolbar to check and track the formulas.</p> |
| <ul style="list-style-type: none"> ▪ are the clones of those formulas used appropriately? Check an appropriate sample in detail for arithmetic and logical correctness. | <p>Use the CMAP to check that cloned formulas are used appropriately (e.g. a copy of a formula summing the 10 cells above is not placed at the foot of a column of 15 cells).</p> |

| Question / Assurance Issue | Comment |
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| <p>4.2 Comparisons</p> | |
| <ul style="list-style-type: none"> ▪ use <i>SpACE, Comparisons</i> to check ranges and / or sheets that should be the same to identify any significant differences. | <p>Once you have checked one worksheet, or range, and either :</p> <ul style="list-style-type: none"> • satisfied yourself that it is correct; <i>OR</i> • fully recorded the nature and extent of errors in it; <p>use <i>SpACE's</i> comparison functions to report differences between that and other areas that should be the same.</p> |
| <ul style="list-style-type: none"> ▪ Further testing on the “copy” sheet or range can be limited to ensuring that <ul style="list-style-type: none"> ⇒ the source figures are correct; ⇒ that logically it should be the same in the overall context of the model; ⇒ differences are appropriate; and ⇒ any risks replicated from the original are countered. | <p>These functions can also be used to compare sheets and ranges from separate workbooks that appear to be similar.</p> |
| <p>4.3 Final checklist</p> | |
| <ul style="list-style-type: none"> ▪ from sP WB data ensure that you have checked: <ul style="list-style-type: none"> ⇒ the impact of manual recalculation on significant figures; | <p>Remember, you still have a copy of the spreadsheet you can refer to if you are uncertain whether any totals have changed upon recalculation.</p> |
| <ul style="list-style-type: none"> ⇒ the purpose and function of any macros. | |

| Question / Assurance Issue | Comment |
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| <ul style="list-style-type: none"> ▪ from the sP WS data sheets ensure that you have checked all: <ul style="list-style-type: none"> ⇒ date cells used in formulas; ⇒ text cells containing numbers; ⇒ failed formulas; ⇒ formulas returning error values; ⇒ advanced functions; ⇒ formulas with no dependants. | <p>Hopefully most of these items will have been covered as you worked through your list of areas to check. This final check will ensure you haven't dropped any stitches.</p> |
| <p>4.4 The overall Logic of the model</p> <ul style="list-style-type: none"> ▪ Take a step back now and, using your diagram, ensure that the model is doing what it is intended to do. ▪ Is the path from input value to "bottom line" logical? | <p>Use the routes you traced earlier when checking your understanding of the model. Ensure that all significant formulas have been checked in your detailed testing.</p> <p>Given what you now know about the workings of the model, does it work as expected.</p> |

| Question / Assurance Issue | Comment |
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| <p>5. Reporting Findings</p> | |
| <p>Purpose :</p> <ul style="list-style-type: none"> ▪ to document the spreadsheet model; and ▪ to record your testing; the outcomes and the recommended action. | |
| <p>5.1 Your final report should include :</p> | |
| <ul style="list-style-type: none"> ▪ documentation of the structure and purpose of workbooks / worksheets tested. | <p>This should include your diagram with a more detailed explanation of the function and purpose of the spreadsheets.</p> |
| <ul style="list-style-type: none"> ▪ details of its author, its users and its business context. | |
| <ul style="list-style-type: none"> ▪ description of the logic of important calculations in plain English. | |
| <ul style="list-style-type: none"> ▪ risk analysis. | <p>List the factors that influenced your decision to audit the workbook(s) and the targeting of your checks.</p> |

| Question / Assurance Issue | Comment |
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| <ul style="list-style-type: none"> ▪ your testing plan and the factors that influenced it your selection of those areas to check in depth. | <p>What were the measures of complexity you identified at 3.2 above?</p> <p>Clearly define what you did and did not check; and why. Be selective in what you print out from the sheets produced by <i>SpACE</i>. Note : colours can vary when printed.</p> |
| <ul style="list-style-type: none"> ▪ Findings <ul style="list-style-type: none"> ⇒ Quantitative errors ⇒ Qualitative errors | <ul style="list-style-type: none"> - schedule and description of the errors and their impact on the "bottom line".. - description and potential impact on the business. |
| <ul style="list-style-type: none"> ▪ Recommendations <ul style="list-style-type: none"> ⇒ Checks to be followed up ⇒ Changes to model ⇒ Future audit action | <p>these should always include checking of key input values back to source documents and the "bottom line" to subsequent accounting records.</p> <p>principles only.</p> <p>suggested scope and frequency of repeat testing.</p> |

Worksheet Version

| Question / Assurance Issue | Auditor's Notes |
|--|-----------------|
| 1. Is Testing Necessary? | |
| <p>1.1 How much is at risk?</p> <ul style="list-style-type: none"> ▪ in this workbook alone? ▪ if this workbook is used as a template? ▪ if business decisions are based on the output? ▪ does it have a significant position in the audit trail? | |
| <p>1.2 Developer's knowledge</p> <ul style="list-style-type: none"> ▪ who designed this workbook? ▪ what evidence is there that they understood the business or accounting issues that it addresses? | |
| <p>1.3 Design</p> <ul style="list-style-type: none"> ▪ what evidence is there that the spreadsheet was designed using a design methodology? | |

| Question / Assurance Issue | Auditor's Notes |
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| <p>1.4 Testing</p> <ul style="list-style-type: none"> ▪ what evidence is there that the spreadsheet was thoroughly tested before being brought into use; and ▪ thoroughly tested again each time a material change was made? ▪ was the testing adequate? | |
| <p>1.5 Documentation</p> <p>Has the developer documented the spreadsheet, to make clear :</p> <ul style="list-style-type: none"> ▪ what it's for; ▪ what it does; ▪ how it does it; ▪ what assumptions were made in its design; ▪ what constants are used and where they are held; ▪ who developed it; ▪ when; ▪ when and how it has been changed since being brought into use; ▪ the presence and purpose of any macros? | |
| <p>1.6 Manual Testing</p> <ul style="list-style-type: none"> ▪ can the workbook be checked manually using pencil & calculator | |

| Question / Assurance Issue | Auditor's Notes |
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| <p>2. So, You need to Take a Copy of the Spreadsheet</p> | |
| <p>2.1 Virus Checking</p> <ul style="list-style-type: none"> ▪ virus check the source disk. | |
| <p>2.2 Securing a copy</p> <ul style="list-style-type: none"> ▪ take up a copy of the original spreadsheet; ▪ ensure that the spreadsheet you are testing has been saved in Excel format; ▪ make a second “working copy” for subsequent testing and put the first in a safe place. | |
| <p>2.3 Receipts</p> <p>Make sure you give a receipt which shows :</p> <ul style="list-style-type: none"> ▪ a description of the media; ▪ full DOS/Windows file specification of the original; ▪ the machine from which the copy was taken; ▪ the program which created it; ▪ the stated purpose / period of the model; and ▪ the fact that what you have is a COPY. <p>You may not need to do this in some audit areas - but consider the need for a chain of evidence from the original spreadsheet to your test copy before dismissing this step.</p> | |

| Question / Assurance Issue | Auditor's Notes |
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| 3. Risk Analysis & Audit Planning | |
| 3.1 Initiate <i>SpACE</i> audit and review sP WB Data. | |
| <ul style="list-style-type: none"> ▪ if recalculation is set to manual note significant totals for later comparison; | |
| <ul style="list-style-type: none"> ▪ survey each sheet listed - Go To... the last cell to establish the active range and the apparent purpose of sheet; | |
| <ul style="list-style-type: none"> ▪ hidden sheets - why they are hidden? | |
| <ul style="list-style-type: none"> ▪ begin to sketch a diagram of how the worksheets appear to interact. | |
| <ul style="list-style-type: none"> ▪ check for presence of macros; | |
| <ul style="list-style-type: none"> ▪ check for links to other workbooks to ensure you have the full set; | |
| <ul style="list-style-type: none"> ▪ check the list of names for indications that advanced or inappropriate functions have been used. | |
| | |

| Question / Assurance Issue | Auditor's Notes |
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| <p>3.2 Batch test sheets identified for detailed testing</p> | |
| <ul style="list-style-type: none"> ▪ where sheets are based on a common template, batch test only the first at this stage. | |
| <ul style="list-style-type: none"> ▪ use <i>SPACE</i>, <i>Locate Sheets</i> to review each sheet set in turn. | |
| <ul style="list-style-type: none"> ▪ review sP WS data for each and note: <ul style="list-style-type: none"> ⇒ links to other sheets; ⇒ Formula Cells without Dependents which are significant "bottom line" figures. ⇒ the presence of features such as consolidation, pivot table or scenarios - which may take time to check or are inappropriate to the purpose of the model or application. | |

| Question / Assurance Issue | Auditor's Notes |
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| <ul style="list-style-type: none"> ▪ review the maps and formula lists to note <ul style="list-style-type: none"> ⇒ main data capture areas ⇒ significant formulas; ⇒ the pattern and construction of each sheet; ⇒ apparent anomalies in the pattern; ⇒ evidence that protection has been used carefully. | |
| <p>3.3 Complete your diagram of the model</p> | |
| <ul style="list-style-type: none"> ▪ comment on the function of each sheet and the logic of the model. | |
| <ul style="list-style-type: none"> ▪ use Route Finder, tracing selected items from data capture areas to the "bottom line", to confirm your understanding is correct. | |
| <p>3.4 Stop or Go?</p> | |
| <p>3.5 Plan the detailed testing</p> | |
| <ul style="list-style-type: none"> ▪ make a prioritised list of the areas of the workbook that you need to check in depth; | |
| <ul style="list-style-type: none"> ▪ estimate the time required to carry out the checks; | |
| <ul style="list-style-type: none"> ▪ identify additional resources required to complete the audit. | |

| Question / Assurance Issue | Auditor's Notes |
|---|-----------------|
| 4. Detailed Testing | |
| 4.1 Check areas identified for Detailed testing | |
| <ul style="list-style-type: none"> ▪ are the unique formulas arithmetically & logically correct? | |
| <ul style="list-style-type: none"> ▪ are the formulas which are copied arithmetically and logically correct?· | |
| <ul style="list-style-type: none"> ▪ are the clones of those formulas used appropriately? Check an appropriate sample in detail for arithmetic and logical correctness. | |
| 4.2 Comparisons | |
| <ul style="list-style-type: none"> ▪ use <i>SpACE</i>, <i>Comparisons</i> to check ranges and / or sheets that should be the same to identify any significant differences. | |
| <ul style="list-style-type: none"> ▪ Further testing on the “copy” sheet or range can be limited to ensuring that <ul style="list-style-type: none"> ⇒ the source figures are correct; ⇒ that logically it should be the same in the overall context of the model; ⇒ differences are appropriate; and ⇒ any risks replicated from the original are countered. | |

| Question / Assurance Issue | Auditor's Notes |
|---|-----------------|
| <p>4.3 Final checklist</p> | |
| <ul style="list-style-type: none"> ▪ from sP WB data ensure that you have checked: <ul style="list-style-type: none"> ⇒ the impact of manual recalculation on significant figures; ⇒ the purpose and function of any macros. | |
| <ul style="list-style-type: none"> ▪ from the sP WS data sheets ensure that you have checked all: <ul style="list-style-type: none"> ⇒ date cells used in formulas; ⇒ text cells containing numbers; ⇒ failed formulas; ⇒ formulas returning error values; ⇒ advanced functions; ⇒ formulas with no dependants. | |
| <p>4.4 The overall Logic of the model</p> | |
| <ul style="list-style-type: none"> ▪ Take a step back now and, using your diagram, ensure that the model is doing what it is intended to do. | |
| <ul style="list-style-type: none"> ▪ Is the path from input value to “bottom line” logical? | |

| Question / Assurance Issue | Auditor's Notes |
|---|-----------------|
| 5. Reporting Findings | |
| 5.1 Your final report should include : | |
| <ul style="list-style-type: none"> ▪ documentation of the structure and purpose of workbooks / worksheets tested. | |
| <ul style="list-style-type: none"> ▪ details of its author, its users and its business context. | |
| <ul style="list-style-type: none"> ▪ description of the logic of important calculations in plain English. | |
| <ul style="list-style-type: none"> ▪ risk analysis. | |
| <ul style="list-style-type: none"> ▪ your testing plan and the factors that influenced it your selection of those areas to check in depth. | |
| <ul style="list-style-type: none"> ▪ Findings <ul style="list-style-type: none"> ⇒ Quantitative errors ⇒ Qualitative errors | |
| <ul style="list-style-type: none"> ▪ Recommendations | |
| <ul style="list-style-type: none"> ⇒ Checks to be followed up | |
| <ul style="list-style-type: none"> ⇒ Changes to model | |
| <ul style="list-style-type: none"> ⇒ Future audit action | |