

Consistency Checks - Explanation

Introduction

The consistency checks described in this document are intended to be applied by software to XBRL reports. They should help preparers of tagged accounts to identify potential gaps, errors or weaknesses in tagging. They may also help consumers in assessing tagged data.

As their name makes clear, they are intended as checks. They are emphatically **not** validation tests which determine whether an XBRL report should be accepted or rejected by any user.

The checks described by this document and the associated Excel workbooks are an initial set which cover only a subset of taxonomy content. They do **not** represent a comprehensive set of all possible checks.

They illustrate the types of checks that are possible. The range and number of checks could be increased in the future if this first set of proposed checks is considered to be of value following market assessment and use.

At this stage, the checks are presented purely in 'natural language' in Excel. They are not written in a particular formula language. It is up to individual software vendors or consumers to decide how to implement the checks. A future enhancement might be to provide the checks in a suitable formula language to enable easier and more consistent implementation.

Types of Check

There are two main types of consistency check:

- **Consistency check**
These checks consider the logical relationship between items in the taxonomy, and provide an indication where information is inconsistent or has been entered correctly. The items under consideration can be of any data type, not just a numeric type.
- **Summation check**
These checks indicate situations where summation of numerical data in an XBRL instance may apply, based on the relationship of the tags that have been used. This summation can occur across line items, dimensions or contexts.

Applicability of consistency checks

The proposed checks are not firm rules or validation tests. It is not possible in practice to formulate rules that are applicable to the accounts of all entities in all industries, even assuming preparers tag in an identical manner.

These checks indicate where relationships are very likely to exist in a given XBRL report, rather than where they must exist. If a report fails a given check, this should provide no more than a warning or information to users that the relevant tagging should be checked or that the data may be inconsistent.

Information to users can indicate the strength of the check as well as an explanation of potential causes of failure (including circumstances the check may give a false indication of a problem.)

The example checks are based on the content of the IFRS taxonomy. In some cases, such as trade and other receivables, this differs in terms of line item tags from FRS 101 and FRS 102. However, the summation rules can easily be adapted to cover the line item tags in FRS 101 and FRS 102.

'Inverse' checks

As well as setting out those areas where relationships exist, we have also documented areas where relationships might be expected to exist but do not. This may be due to the nature of the taxonomy or the practicalities of tagging a set of financial statements. This will help to discourage third parties from creating inappropriate consistency checks.

Technical details

Assumptions

The consistency checks have been created on the basis that certain facts about the underlying taxonomies are true. The way the taxonomies have been constructed ensures that this is the case.

- All tags/line items are considered to be in the current period context, unless explicitly stated otherwise. This is particularly relevant for certain rules, such as those governing movement analyses.
- For the summation checks, multiple dimensions applied to a single line item are assumed to be independent. That is, the presence or absence of any other dimension does not affect the content of the dimension under consideration.
- Similarly, it is assumed that dimensions are unique - that is, there should be no way to exactly express a single fact using two or more separate combinations of dimensions.
- There is assumed to be only a single head of a summation group.
- Generally dimensions with a default of not applicable have not had dimension rules created. Such dimensions are typically used to analyse a particular aspect of a line item and as such do not have a natural summation relationship. Additionally, there is a risk of double counting if the dimension is only used in a very specific part of the financial statements, leaving the items to default to not applicable elsewhere.
- Dimension rules have been written as pure summation rules – that is, there is no indication of sign within the rule. This relies on the assumption that the underlying line item will have the correct balance attribute to identify any subtractions.

Layout of summation checks documents

The Excel workbooks that document the summation checks are laid out in a consistent fashion. Each workbook deals with an individual section, which broadly correspond to sections of the taxonomy.

There are typically five tabs in summation check document:

- **Line items**

This tab sets out all the tags that are relevant for the section. It is taken directly from the presentation view of taxonomy and retains the hierarchical structure of the tags.

For each tag that is a member of summation check, this sheet contains links to the relevant check, including whether it is the head of the summation or a component. These rules are in the 'Summation rules' tab.

This sheet also has links to the dimensions that are attached to each individual tag.

Where applicable, there are links to notes that explain any particular points of interest that apply to the tag, check or dimension.

- **Dimensions**

This tab sets out all the individual dimensions that are relevant for line items in the section. Note however that certain common dimensions that apply to vast majority of tags have been dealt with in a separate sheet to avoid unnecessary duplication. The dimensions in this sheet have been taken directly from the taxonomy and retain the hierarchical structure.

For each dimension, this sheet has links to those dimensional summation rules in the 'Dimension rules' tab that apply to the individual dimension members.

As above, there are also links to relevant notes in the 'Notes' tab.

- **Summation rules**

This tab contains the individual rules that apply to the summation of line items, including links to sub-rules that may apply to individual tags in a summation relationship. See below for examples of how this works.

As above, there are also links to relevant notes in the 'Notes' tab.

- **Dimension rules**

This tab contains the individual rules that apply to the summation of dimensions, including links to sub-rules that may apply to individual dimensions in a summation relationship. See below for examples of how this works.

As above, there are also links to relevant notes in the 'Notes' tab.

- **Notes**

This tab contains points of interest, exceptions, implementation details etc. that may apply to items in any of the previous sheets.

It should be noted that the structure and naming of the various elements of the documents are standardised to facilitate a possible future automated conversion into a formula language. For example, each dimension summation rule is a named range of cells, with the name being of the format 'DimRule#' where # represents the number of the rule.

Summation functionality

There are two key ways summation can be performed in an XBRL instance - across line items and across dimensions. In any given instance the relationship between line items and dimensions can be complex and so this document aims to set out clear guidelines on how summation can work across these items.

As stated above in the assumptions section, dimensions are assumed to be independent. This means that we can consider each dimension attached to a line item individually, subject to the conditions described below. Being able to break down the relationships in this manner allows us to simplify the summation mechanism.

The rules for summation are set out below, followed by illustrative examples:

- **Line items**

Summation across line items occurs across a single dimension at a time. Within that dimension, summation is only performed when line items have the same dimension tag. All other dimensions attached to the line items involved in the summation, each individual dimension must have the same value for summation to work.

- **Dimensions**

Summation across dimensions occurs across a single line item at a time.

For both line items and dimensions, there is assumed to be only a single head of a given summation group.

When tagging an XBRL instance, it is unlikely that every single line item and dimension in a given set of summation rules and sub-rules will actually be present. It is therefore necessary when carrying out these summations to have the ability to calculate and store intermediate sub-totals, corresponding to the heads of relevant sub-rules.

In order to sum across a line item or dimension, you must:

- Identify the lowest level rule in which the particular tag or dimension you are considering appears as a component.
- Calculate the head of the rule using the defined summation relationship, bringing in all other tag/dimension values or calculated sub-rule heads as appropriate.
- Repeat this process using the calculated value for the head of the summation group until you reach the desired level of summation.

Example - Property, plant and equipment, single dimension

These rules are best illustrated by way of examples. This example shows summation with a single dimension, the second shows summation across multiple dimensions. Consider the following property, plant and equipment table:

	Fixtures & Fittings	Computer Equipment	Assets Under Construction	Total
Cost				
At 1 Jan 2013	1,085	3,082	6,300	10,467
Additions	1,054	1,140	385	2,579
Transfers	5,635	662	(6,297)	-
Disposals	-	(121)	-	(121)
At 31 Dec 2013	7,774	4,763	388	12,925
Accumulated depreciation				
At 1 Jan 2013	621	1,607	2	2,230
Charge for the year	915	731	-	1,646
Disposals	-	(90)	-	(90)
At 31 Dec 2013	1,536	2,248	2	3,786
Net book amount				
At 31 Dec 2013	6,238	2,515	386	9,139
At 1 Jan 2013	464	1,475	6,298	8,237

The actual tagging for this example is straightforward and will not be discussed in detail here. If unclear, please refer to the PPE tagging example for details.

Line item summation

As described above, line items are summed one dimension at a time. In this simple example, we only have one dimension, so this is not a consideration here. The second part of the rule states that summation is only performed on line items that have the same dimension tag. In this example, this translates as summing down the individual columns of the table.

Taking the 'Computer equipment' dimension tag and the cost part of the table only, our summation rules state that we must find the lowest level rule that each of the line items appears in. From the 'Property, plant and equipment' summation checks sheet, we can see that 'Additions', 'Transfers' and 'Disposals' all appear in Rule 4 from the 'Summation rules' tab. Adding in the relevant values we can calculate the head of this group as follows:

Head	Value	Component	Value
Increase (decrease) in property, plant and equipment	1,681	Total additions including from business combinations, property, plant and equipment	1,140
		Disposals, property, plant and equipment	(121)
		Decrease through discontinued operations, property, plant and equipment	-
		Total increase (decrease) from revaluations, property, plant and equipment	-
		Increase (decrease) from foreign exchange differences, property, plant and equipment	-
		Increase (decrease) due to transfers into or out of property, plant and equipment	-
		Increase (decrease) due to transfers between classes of property, plant and equipment	662
		Further item of increase (decrease) in PPE [component of total change in PPE]	-
		Increase (decrease) through other changes, property, plant and equipment	-

Next we need to find the lowest level rule that the sum of this group appears in. This is Rule 2. We can add in the value for the prior period as it also appears in this rule:

Head	Value	Component	Value
Property, plant and equipment, gross / at cost	4,763	Property, plant and equipment, gross / at cost (prior period)	3,082
		Increase (decrease) in property, plant and equipment	1,681

We can see that this corresponds to the total of the 'Computer equipment' cost column.

It should be noted that there are other dimensions that are attached to these line items. However, they are not specified in this table, and we assume that they revert to their default values. This ensures we are in line with the requirement that all other dimensions must have the same value.

Dimension summation

Similarly we can use the dimension rules by keeping a line item constant. Taking the 'Additions' line item, we can add across the table. Finding the lowest level sub-rule for each of the dimensions in turn show us that 'Computer equipment' feeds up into 'Office equipment', which is Dimension Rule 7:

Head	Value	Component	Value
Office equipment	3,082	Computer equipment	3,082
		Communication and network equipment	-

This then feeds up into 'Furniture, fittings, tools and equipment' (Dimension Rule 5) which also contains 'Furniture and fittings':

Head	Value	Component	Value
Furniture, fittings, tools and equipment	4,167	Furniture and fittings	1,085
		Tools and equipment	-
		Office equipment	3,082

This in turn feeds up into Dimension Rule 2, bringing in 'Assets under construction':

Head	Value	Component	Value
Total property, plant and equipment other than exploration and evaluation assets	10,467	Land and buildings	-
		Leasehold improvements	-
		Investment property included within PPE	-
		Construction in progress / assets under construction	6,300
		Vehicles, plant and machinery	-
		Furniture, fittings, tools and equipment	4,167
		Network assets	-
		Assets not yet available for use, PPE	-
		Oil and gas properties	-
		Oil and gas production assets	-
		Oil depots, storage tanks and service stations	-
		Total mine properties	-
		Producing mines	-
		Mining assets under construction	-
		Deferred stripping expenditures for mine properties	-
		Other mining assets	-
		Non-standard PPE class 1 [component of total property, plant and equipment]	-
		Non-standard PPE class 2 [component of total property, plant and equipment]	-
		Non-standard PPE class 3 [component of total property, plant and equipment]	-
		Non-standard PPE class 4 [component of total property, plant and equipment]	-
		Other property, plant and equipment	-

Finally, we can sum up to the 'Total property, plant and equipment' using Dimension Rule 1:

Head	Value	Component	Value
Total property, plant and equipment	10,467	Total property, plant and equipment other than exploration and evaluation assets	10,467
		Tangible exploration and evaluation assets	-

Example - Property, plant and equipment, multiple dimensions

This example shows summation across multiple dimensions. Consider the following property, plant and equipment table:

	Freehold land	Freehold buildings	Leasehold property	Furniture & fittings	Total
Cost					
At 1 Jan 2013	37,356	622,607	21,274	245,045	926,282
Additions	71,418	18,511	26,780	3,512	120,221
Disposals	-	-	-	(269)	(269)
At 31 Dec 2013	108,774	641,118	48,054	248,288	1,046,234
Accumulated Depreciation					
At 1 Jan 2013	-	209,210	16,372	118,300	343,882
Charge for the year	-	15,850	986	23,838	40,674
Disposals	-	-	-	(87)	(87)
At 31 Dec 2013	-	225,060	17,358	142,051	384,469
Net book amount					
At 31 Dec 2013	108,774	416,058	30,696	106,237	661,765
At 1 Jan 2013	37,356	413,397	4,902	126,745	582,400

Line item summation

The line item summation for this example works in exactly the same way as the previous example, and will not be reproduced here.

Dimension summation

Dimension summation for multiple dimensions works in a similar fashion to that for single dimensions, with the exception that at each stage there must be consideration of which dimension is being summed whilst keeping all the others constant.

Taking the 'Additions' row as an example, we can see that the two dimensions applicable here are:

- Property, plant and equipment classes
- PPE ownership

Summation rules exist for both of these, so our aim is to reach a figure for additions which is tagged to both 'Total property, plant and equipment' and 'Total owned and leased PPE assets', which are the heads of the summation groups for the respective dimensions.

Finding the lowest level sub-rule applicable we can see that, by keeping the 'PPE ownership' dimension constant and summing across the 'Property, plant and equipment classes' dimension, rule 3 applies here:

Head	Value	Component	Value
Land and buildings [Freehold]	89,929	Land [Freehold]	71,418
		Buildings [Freehold]	18,511

Note that this relationship only holds because both items are tagged 'Freehold' in the PPE ownership dimension, indicated by the square brackets in the above table.

Using the total from above, we can now see that, by keeping the 'Property, plant and equipment classes' dimension constant and summing across the 'PPE ownership' dimension, rule 9 applies:

Head	Value	Component	Value
Total owned and leased PPE assets	116,709	Owned or freehold assets	89,929
[Land and buildings]		[Land and buildings]	
		Leased assets, held as lessee	26,780
		[Land and buildings]	
		Assets held for use under leases, lessor	-
		[Land and buildings]	

As all relevant columns have a 'Total owned and lease PPE assets' value, either explicitly calculated above, or by virtue of it being the default, this effectively now reverts to a single dimension summation and we can apply rule 2, followed by rule 1 to calculate the total:

Head	Value	Component	Value
Total property, plant and equipment other than exploration and evaluation assets	120,221	Land and buildings	116,709
		Leasehold improvements	-
		Investment property included within PPE	-
		Construction in progress / assets under construction	-
		Vehicles, plant and machinery	-
		Furniture, fittings, tools and equipment	3,512
		Network assets	-
		Assets not yet available for use, PPE	-
		Oil and gas properties	-
		Oil and gas production assets	-
		Oil depots, storage tanks and service stations	-
		Total mine properties	-
		Producing mines	-
		Mining assets under construction	-
		Deferred stripping expenditures for mine properties	-
		Other mining assets	-
		Non-standard PPE class 1 [component of total property, plant and equipment]	-
		Non-standard PPE class 2 [component of total property, plant and equipment]	-
		Non-standard PPE class 3 [component of total property, plant and equipment]	-
		Non-standard PPE class 4 [component of total property, plant and equipment]	-
		Other property, plant and equipment	-

Head	Value	Component	Value
Total property, plant and equipment	120,221	Total property, plant and equipment other than exploration and evaluation assets	120,221
		Tangible exploration and evaluation assets	-

Implementation note

The choice at each stage of which dimensions to keep constant and which to sum across needs careful consideration. For example, if at the first stage we had elected to keep the 'Property, plant and equipment classes' dimension constant and sum across the 'PPE ownership' dimension, we might be tempted to use rule 9 to derive the following:

Head	Value	Component	Value
Total owned and leased PPE assets [Land]	71,418	Owned or freehold assets [Land]	71,418
		Leased assets, held as lessee [Land]	-
		Assets held for use under leases, lessor [Land]	-

This is incorrect – we actually do not know whether 'Leased assets, held as lessee [Land]' is nil as we show in the above table, since we are only presented with the total for leasehold property in the original note. Conceivably, this could be comprised of both leased land and lease buildings.

In a simple example such as this, it is easy to reason about which dimension summation is correct, however any machine implementation would have to be able to make these deductions, potentially across several dimensions.