



European Securities and
Markets Authority

ESEF Reporting Manual

Preparation of Annual Financial Reports in Inline XBRL



Table of Contents

I.	Introduction	3
II.	Summary table of updates.....	4
III.	Glossary	7
IV.	Guidance	12
1	Guidance for issuers	12
1.1	Use of languages	12
1.2	Use of elements that are available in the IFRS Taxonomy but are not included in the ESEF taxonomy.....	12
1.3	Selection of appropriate elements to mark up disclosures	13
1.4	Anchoring.....	14
1.5	Use of line items or domain members	15
1.6	Use of positive and negative values (signage).....	16
1.7	Units of measure	16
1.8	Footnotes	17
2	Guidance for software firms to ensure technical validity	18
2.1	Contexts.....	18
2.2	Facts	20
2.3	Footnotes	21
2.4	Restrictions on Inline XBRL and other constructs.....	22
2.5	Other content of Inline XBRL documents.....	24
2.6	Reporting packages	26
2.7	Technical validity of reports.....	27
3	Technical guidance for issuers and software firms on extension taxonomies and other topics.....	28
3.1	Extension taxonomy	28
3.2	Extension taxonomy elements.....	30
3.3	Extension taxonomy anchoring	32
3.4	Extension taxonomy linkbases	33
3.5	Other issues.....	38

I. Introduction

[Last updated: July 2019]

Background

1. The RTS on ESEF¹ specifies that all issuers subject to the requirements contained in the Transparency Directive to make public Annual Financial Reports shall prepare annual financial reports in the Extensible Hypertext Markup Language (XHTML) format. Where the issuer prepares IFRS consolidated financial statements, it shall mark up these IFRS consolidated financial statements using the XBRL markup language. The markups shall be embedded in the XHTML document version of the annual financial report using the Inline XBRL format.

Purpose

2. This document has been produced by ESMA to assist issuers and software vendors in creating Inline XBRL documents that are compliant with the RTS on ESEF. It provides guidance on common issues that may be encountered when creating Inline XBRL documents and explains how to resolve them. The purpose of this document is to promote a harmonised and consistent approach for the preparation of annual financial reports in the format specified in the RTS on ESEF.
3. The content of this document is aimed at issuers who are required to prepare annual financial reports in Inline XBRL in accordance with Article 4(7) of the Transparency Directive (TD) and the RTS on ESEF, and at software firms developing software used for the preparation of annual financial reports in Inline XBRL. The aim of the guidelines defined in this document is to facilitate the analysis and comparison of the XBRL data contained in Inline XBRL documents by computer applications and human readers. In particular, this document provides guidance on the expected syntax and structure of Inline XBRL documents and issuers' XBRL extension taxonomies. This document contains parts that are of a highly technical nature, especially sections III.2 and III.3. These sections are intended for a technical audience and assume that the reader has a working knowledge of the XBRL 2.1, Inline XBRL 1.0 and the XBRL Dimensions 1.0 Specifications, is familiar with the IFRS Taxonomy and has a basic understanding of XML, Namespaces and XML Schema.
4. The content of this document is not exhaustive and it does not constitute new policy. This document is intended to be continually edited and updated as and when the need to do so arises.

¹ Commission Delegated Regulation (EU) 2019/815 of 17 December 2018 supplementing Directive 2004/109/EC of the European Parliament and of the Council with regard to regulatory technical standards on the specification of a single electronic reporting format

Providing feedback on the Reporting Manual

5. Stakeholders wishing to provide feedback or raise questions / concerns with regards to the content of the ESEF Reporting Manual or any of the materials published by ESMA on ESEF are invited to direct such queries to the ESEF support mailbox: esef@esma.europa.eu. Depending on the nature of such queries, ESMA will assess whether it is relevant and/or necessary to provide further clarity or guidance to the public and whether a further revision of the Reporting Manual and/or to other ESEF-related material is deemed appropriate.

II. Summary table of updates

[Last updated: July 2019] [new]

Guidance number / section	Topic of the Question	Last update
Glossary		July 2019
Guidance 1.1.1	Language of labels	December 2017
Guidance 1.2.1	Issuers incorporated in third countries that apply IFRS standards or interpretations that are not yet adopted in the EU	July 2019
Guidance 1.2.2	Use of elements available in the IFRS Taxonomy that were not yet included in the ESEF taxonomy	July 2019
Guidance 1.3.1	Use of labels to select appropriate elements	December 2017
Guidance 1.3.2	Markup of disclosures if the ESEF taxonomy only contains an element that is wider in scope or meaning	December 2017
Guidance 1.3.3	Markup of notes to financial statements	July 2019
Guidance 1.4.1	Anchoring of extension elements to elements in the ESEF taxonomy that are wider in scope or meaning	July 2019
Guidance 1.4.2	Anchoring of extension elements that are combinations	July 2019

Guidance 1.5.1	Determination of whether a disclosure should be marked up with a line item or a domain member	December 2017
Guidance 1.6.1	Use of positive and negative values	July 2019
Guidance 1.7.1	Use of standard units of measure	July 2019
Guidance 1.8.1	Marking up footnotes	July 2019 (new)
Guidance 2.1.1	Use of the LEI to identify the issuer	July 2019
Guidance 2.1.2	Formatting of the period element in the context of the Inline XBRL document	July 2019
Guidance 2.1.3	Use of segment and scenario containers in the context elements of Inline XBRL documents	July 2019
Guidance 2.1.4	The Inline XBRL document should only contain data of the issuer	July 2019
Guidance 2.2.1	Attributes to define the accuracy of numeric facts	July 2019
Guidance 2.2.2	Representation of rates, percentages and ratios	July 2019 (new)
Guidance 2.2.3	Transformation of facts	July 2019 (new)
Guidance 2.2.4	Facts duplication	July 2019 (new)
Guidance 2.3.1	Appropriate use of XBRL footnotes in the reports	July 2019
Guidance 2.4.1	Inline XBRL constructs that should be avoided	July 2019
Guidance 2.4.2	Other constructs that should be avoided	July 2019 (new)
Guidance 2.5.1	Inclusion of other content than XHTML and XBRL in the Inline XBRL document	July 2019
Guidance 2.5.2	Indication of the language used in textual mark ups	July 2019
Guidance 2.5.3	Use of more than one target XBRL document for an Inline XBRL Document Set (IXDS)	December 2017
Guidance 2.5.4	Use of the Cascading Style Sheet (CSS) language to style Inline XBRL documents	July 2019

Guidance 2.5.5	Application of ix:continuation and ix:exclude elements	July 2019 (new)
Guidance 2.6.1	Including Inline XBRL document in taxonomy packages	July 2019 (new)
Guidance 2.6.2	Including multi-html Inline XBRL documents and multiple Inline XBRL document sets in taxonomy packages	July 2019 (new)
Guidance 2.6.3	Naming convention for report packages	July 2019 (new)
Guidance 2.7.1	Ensuring report validity against XBRL specifications	July 2019 (new)
Guidance 3.1.1	Required components of extension taxonomies and reference to the taxonomy files prepared by ESMA	December 2017
Guidance 3.1.2	Taxonomy files published by ESMA	July 2019 (new)
Guidance 3.1.3	Taxonomy packages	July 2019 (new)
Guidance 3.1.4	Ensuring taxonomy validity against XBRL specifications	July 2019 (new)
Guidance 3.2.1	Naming conventions for extension taxonomy elements	July 2019
Guidance 3.2.2	Data types to be used on extension concepts	December 2017
Guidance 3.2.3	Use of typed dimensions in issuers' extension taxonomies	December 2017
Guidance 3.2.4	Identification of extension taxonomy element	July 2019
Guidance 3.2.5	Definition of abstract concepts in extension taxonomies	December 2017
Guidance 3.3.1	Relationships to anchor extension taxonomy elements to elements in the ESEF taxonomy	July 2019
Guidance 3.3.2	Where to define the anchoring relationship	July 2019

Guidance 3.4.1	Modelling of the issuers' extension taxonomies' linkbases	December 2017
Guidance 3.4.2	Defining the dimensional validity of line items in the definition linkbase	July 2019
Guidance 3.4.3	Definition of default members of extension taxonomy dimensions	July 2019
Guidance 3.4.4	Use of preferred labels on presentation links in extension taxonomies	July 2019
Guidance 3.4.5	Use of labels on elements in extension taxonomies	July 2019 (new)
Guidance 3.4.6	Restrictions on taxonomy relationships	July 2019
Guidance 3.5.1	References pointing to resources outside the reporting package	December 2017

III. Glossary

[Last updated: July 2019]

abstract	An attribute of an element to indicate that the element is only used in a hierarchy to group related elements together. An abstract element cannot be used to tag data in an instance document.
AFR	Annual financial report. Regulated information defined in Article 4 of the Transparency Directive.
arcrole	Technical construct used in XBRL linkbases to identify the type of relationship between elements.
attribute	A property of an element such as its name, balance, data type, period type and whether the element is abstract.
axis (pl. axes)	An instance document contains facts; an axis differentiates facts and each axis represents a way that the facts may be classified. For example, revenue for a period might be reported along with a business unit axis, a country axis, a product axis, and so forth.
balance	An attribute of a monetary item type element designated as debit, credit, or neither; a designation, if any, should be the natural or most expected

	balance of the element - credit or debit - and thus indicates how calculation relationships involving the element may be assigned a weight attribute (-1 or +1).
calculation relationships	Additive relationships between numeric items expressed using as summation-item arcrole and weight attribute.
context	Entity and fact-specific information (reporting period, segment/scenario information, and so forth) required by XBRL that allows tagged data to be understood in relation to other information.
dimension	XBRL technical term for axis.
domain	An element that represents a set of members sharing a specified semantic nature; the domain and its members are used to classify facts along the axis of a table. For example, "Lithuania" is a domain member in the domain "Member States," and would be used to classify elements such as revenues and assets in Lithuania as distinct from other Member States. When a fact does not have any domain member specified, that means it applies to the entire domain or to a default member of a domain set in the taxonomy.
domain member	An element representing one of the possibilities within a domain.
element	XBRL components (items, domain members, dimensions, and so forth). The representation of a financial reporting concept, including: line items in the face of the financial statements, important narrative disclosures, and rows and columns in tables.
ELR	Extended Link Role, a set of relations representing a particular piece of a report indicated by a role. Extended link roles are used in taxonomies to separate linkbases into smaller logical chunks.
extension taxonomy <i>or</i> extension	A taxonomy that allows users to add to a published taxonomy in order to define new elements or change element relationships and attributes (presentation, calculation, labels, and so forth) without altering the original.
ESEF taxonomy	The taxonomy set out in the RTS on ESEF.
fact	The occurrence in an instance document of a value or other information tagged by a taxonomy element.
Footnote (new)	Explanatory and supplementary information for various portions of financial statement, often presented at the bottom of a given statement.

hypercube	XBRL technical term for a table.
Inline XBRL	Technology that provides a mechanism for embedding XBRL tags in HTML documents. This allows the XBRL benefits of tagged data to be combined with a human-readable presentation of a report, which is under the control of the preparer.
Inline XBRL document (new)	A single document that combines structured, computer-readable data with the issuer's human-readable presentation of a business report using the Inline XBRL standard.
Inline XBRL document set (new)	A group of one or more Inline XBRL documents which when comprising sufficient metadata results in one or more target XBRL document when transformed according to the mapping rules prescribed in the technical specification
label	Human-readable description for an element. Each element has a standard label that normally corresponds to the element name, and is unique across the taxonomy. Elements may have also other labels, in particular documentation labels containing more elaborate descriptions of the element's definition, meaning, scope and application.
line item	Line items normally represent the accounting concepts being reported. They are used to mark up numeric accounting information as well as qualitative (non-numeric) disclosures. Line items can be used either individually or in a table (in combination with axis and axis members).
linkbase	XBRL technical term for a relationships file.
namespace	A namespace is the "surname" of an element represented as a Universal Resource Identifier (URI) identifying the organization that maintains the element definition and its version. For example http://xbrl.ifrs.org/taxonomy/2017-03-09/ifrs-full is a namespace of the 2017 version of the FULL IFRS taxonomy defined by the IFRS Foundation.
parent-child relationship	Relationship between elements that indicates subordination of one to the other as represented in a print listing or financial statement presentation. Relationships files use parent-child hierarchies to model several different relationships, including presentation, particular cases of summation of a set of facts, and membership of concepts within a domain used as the axis of a table.

period type	An attribute of an element that reflects whether it represents a stock ('instant' in XBRL terminology) that is reported at a particular date or a flow ('duration') reported in a time period.
segment/ scenario	Components of contexts containing additional information to be associated with facts in an instance document; this information encompasses in particular the dimensional classifications or breakdowns defined by axes and domain members in taxonomies.
standard label	The default label for an element defined in a taxonomy.
table	An element that organizes a set of axes and a set of line items to indicate that each fact of one of the line items could be further characterized along one or more of its axes. For example, if a line item is 'Revenues' and an axis is 'Segments' and this axis has the following two domain members 'Reportable segments' and 'All other segments', the XBRL instance document and Inline XBRL document could include facts representing revenues with break-downs for 'Reportable segments' and 'All other segments'.
tag or mark up (verb)	To use taxonomy elements to identify disclosures reported in an annual financial report.
target XBRL document (new)	The XBRL-valid XBRL instance document represented by metadata in the Inline XBRL document set.
taxonomy, taxonomies	Electronic dictionary of business reporting elements used to report business data. A taxonomy is composed of a schema file or files (with extension .xsd) and relationships linkbase files (with extension .xml) directly referenced by that schema. The taxonomy schema files together with the relationships files define the concepts (elements) and relationships that form the basis of the taxonomy. The set of related schemas and relationships files altogether constitute a taxonomy.
transformation rule (new)	Set of instructions which when applied to a string used in the issuer's report outputs a value in an XBRL-valid format and in a predefined data type.
type or data type	Data types (monetary, string, share, decimal, and so forth) define the kind of data to be tagged with the element name.
URI	Uniform Resource Identifier, is a string of characters used to identify a resource.

validation	Process of checking that instance documents and taxonomies correctly meet the rules of the XBRL specification.
XBRL instance document (new)	A business report prepared using the XBRL standard. It refers to a specific taxonomy entry point and it is the combination of the XBRL instance document and the taxonomy that enables the contents of an XBRL instance document to be fully understood.

IV. Guidance

1 Guidance for issuers

1.1 Use of languages

Guidance 1.1.1 Language of labels [\[last updated: December 2017\]](#)

The RTS on ESEF does not alter the language regime set out in Article 20 of the TD. Therefore, the labels of the elements used for marking up the annual financial report including the issuers' extension taxonomy elements should be in the same language in which the annual financial report is prepared. Issuers are not required to provide labels in other languages. However, ESMA encourages issuers to provide, for the extension taxonomy elements, labels in a language customary in the sphere of international finance, as it would be highly beneficial for users.

1.2 Use of elements that are available in the IFRS Taxonomy but are not included in the ESEF taxonomy

Guidance 1.2.1 Use of taxonomy elements corresponding to IFRS standards or interpretations² that are not yet adopted in the EU [\[last updated: July 2019\]](#)

The ESEF taxonomy contains all elements of the IFRS taxonomy regardless of the endorsement status of the IFRSs in the European Union.

Taxonomy elements corresponding to IFRS not endorsed by the EU, but considered equivalent to IFRS on the basis of Commission Decision 2008/961/EC are exclusively provided for facilitating compliance with the ESEF Regulation by third country issuers listed in the EU which may prepare their consolidated financial statements in accordance with IFRS as issued by the International Accounting Standards Board ('IASB'), whereby such issuers could apply standards or interpretations that are not yet endorsed for use in the Union.

European issuers are reminded that under no circumstances they should use taxonomy elements corresponding to IFRS not endorsed by the EU for tagging their consolidated financial statements because doing so would, by definition, breach the requirements contained in Annex IV.3 of the RTS on ESEF.

Guidance 1.2.2 Use of elements available in the IFRS Taxonomy that were not yet included in the ESEF taxonomy [\[last updated: July 2019\]](#)

The IFRS Foundation regularly updates the IFRS Taxonomy. If an issuer determines that the IFRS Taxonomy includes an element that corresponds to a disclosure of the

² Correspondence is established on the basis of the reference provided in the Schema of the core taxonomy (Annex VI of the RTS on ESEF)

issuer in its IFRS financial statements and that this element is not yet included in the ESEF taxonomy, then the issuers should define an extension taxonomy element whose name and label corresponds to name and label of the element in the IFRS Taxonomy.

1.3 Selection of appropriate elements to mark up disclosures

Guidance 1.3.1 Use of labels to select appropriate elements [last updated: December 2017]

Element labels provide human-readable descriptions of the accounting meaning of a taxonomy element. Each element in the taxonomy has a standard label. Standard labels normally match the wording of the Standards. For common practice content, the standard label of an element normally reflects the wording that is most commonly used in practice or alternatively describes the accounting meaning of an element more precisely.

The standard label of an element is often longer and more detailed or may be phrased differently to the label being reported in practice within IFRS financial statements. This by itself is not a sufficient reason for an issuer to decide against using a particular taxonomy element. A preparer has to consider the accounting meaning of a taxonomy element when making this judgement. For example, a disclosure described by an entity as 'issue of share capital' and presented in the Statement of cash flows as a cash inflow could be marked up using the taxonomy line item with the standard label 'Proceeds from issuing shares'.

Furthermore, the line items, axes and members of the taxonomy files made available on ESMA's website have a documentation label, which provides a definition of the element. Moreover, they contain at least one cross-reference to the relevant Standard(s). The documentation label and the reference to the relevant Standard(s) should be considered to determine whether the accounting meaning of an element corresponds to a specific disclosure.

Guidance 1.3.2 Markup of disclosures if the ESEF taxonomy only contains an element that is wider in scope or meaning [last updated: December 2017]

It is possible and recommended to use an element in the ESEF taxonomy that is wider in scope or meaning than the marked up information if the marked up report does not contain another disclosure that fully or partially corresponds to the respective taxonomy element. For example, an issuer which discloses in its statement of cash flows an item that represents cash outflows relating to the purchase of property, plant and equipment and intangibles other than goodwill can use the taxonomy element 'purchase of property, plant and equipment, intangible assets other than goodwill, investment property and other non-current assets' to mark up the disclosure, even though the cash outflows do not relate to investment property or other non-current assets. This however is only appropriate if the issuer does not disclose in a separate item in the statement of cash flows cash outflows relating to the purchase of investment property or other non-current assets.

Guidance 1.3.3 Markup of the notes [\[last updated: July 2019\]](#) **[new]**

Annex II, paragraph 3 of the RTS on ESEF sets out the so called “block tagging” requirement, whereby issuers shall mark up all disclosures that correspond to the elements in Table 2 of Annex II if those disclosures are present in the issuer’s financial statement. Consequently, there is no obligation to create an extension to tag the notes to the Financial Statements if an issuer’s disclosure does not correspond to any of the elements in Table 2 of Annex II. Nevertheless, ESMA encourages issuers to create extension block tags since this information is useful to end users. As noted in Guidance 1.4.1, there is no obligation to anchor extensions in the Notes to the financial statements

However, if multiple pieces of text corresponding to one block tag are disclosed in different sections of the Notes, issuers should tag such disclosures with one block tag by using the Inline XBRL constructs which allow the concatenation of text content within a document (see Guidance 2.5.5).

1.4 Anchoring

Guidance 1.4.1 Anchoring of extension elements to elements in the ESEF taxonomy that are wider in scope or meaning [\[last updated: July 2019\]](#)

Annex IV of the RTS on ESEF sets out that extension taxonomy elements marking-up the IFRS consolidated financial statements’ statement of financial position, statement of profit or loss and other comprehensive income, statement of changes in equity and statement of cash flows have to be anchored to elements of the ESEF taxonomy, except for elements corresponding to subtotals. This principle can be illustrated with an example. An issuer issued equity and it received one part of the capital increase in kind and another part in cash. It disclosed in its statement of changes of equity the two components separately. The ESEF taxonomy includes an element ‘issue of equity’ but it does not include separate elements for capital increases in kind and capital increases in cash. Therefore, the issuer creates extension taxonomy elements ‘capital increases in kind’ and ‘capital increases in cash’. Capital increases in kind and in cash are narrower in scope than the element ‘issue of equity’ and represent disaggregations of it. Therefore, the two extension elements are anchored to the wider base taxonomy element ‘issue of equity’. It is not necessary to anchor the two extension taxonomy elements to narrower elements in the ESEF taxonomy except for the case outlined in Guidance 1.4.2.

Please note that the RTS on ESEF does not set an anchoring requirement for the Notes to the financial statements. Therefore, if issuers decide on a voluntary basis to create detailed tag extension elements to mark-up their Notes, there is no obligation to anchor such extension elements.

Guidance 1.4.2 Anchoring of extension elements that are combinations [\[last updated: July 2019\]](#)

Annex IV of the RTS on ESEF sets out that where an extension taxonomy element combines a number of elements of the ESEF taxonomy, issuers shall anchor that

extension taxonomy element to each of the elements in the ESEF taxonomy it combines, except where these elements are reasonably deemed insignificant.

This principle is best illustrated with an example. An issuer discloses in its IFRS statement of financial position an item 'issued capital and share premium'. The ESEF taxonomy does not include such an item. Therefore, it is necessary to create an extension taxonomy element. However, the taxonomy includes the elements 'issued capital' and 'share premium'. The extension taxonomy element represents a combination of the two elements that are available in the ESEF taxonomy. The extension taxonomy element 'issued capital and share premium' shall be anchored to these two elements, indicating that it is wider in scope than these two elements.

1.5 Use of line items or domain members

Guidance 1.5.1 Determination of whether a disclosure should be marked up with a line item or a domain member [[last updated: December 2017](#)]

XBRL taxonomies contain line items and domain members which are both elements used to mark up disclosures. Line items normally represent the accounting concepts being reported. They are used to mark up numeric accounting information as well as qualitative (non-numeric) disclosures. Line items are stand alone, but can be used either individually or in a table (in combination with axis and axis members).

Axes and domain members (also sometimes referred to as 'axis members' or 'members') are elements that are mainly used to disclose information for line items from different aspects, such as the disaggregation of the information for line items into different product types, categories, classes and maturities. The axis is the specific aspect being considered. An axis includes one or more components (called members) which share the common accounting or economic meaning defined by that axis.

For example, 'revenue' as a line item can be used to tag numbers that refer to various operating segments. In this case the 'segments [axis]' dimension can be applied to differentiate between revenues of the cars segment, using the element 'cars [member]' and of the motorcycles segment using the element 'motorcycles [member]'. It is important to note that members and axes cannot be used on their own, but are used together with line items to mark up disclosures. Moreover, the same piece of information can be tagged using a line item only or a line item together with a dimension member. For example, the item 'land and buildings' in the statement of financial position can be marked up using the line item 'land and buildings' or using the line item 'property, plant and equipment' in conjunction with the domain members 'land and buildings [member]' of the axis 'classes of property, plant and equipment [axis]'.

In order to facilitate consistent use of line items and domain members despite the flexibility offered by the XBRL standard, extension elements should be defined as line items unless the applicable taxonomy envisages in a particular statement or disclosure the use of domain members.

For example, the ESEF taxonomy contains two elements with the name ‘issued capital’, one is a line item and one is a domain member. The applicable taxonomy envisages that in the statement of financial position the line item is used, while in the statement of changes in equity the domain member should be applied.

1.6 Use of positive and negative values (signage)

Guidance 1.6.1 Use of positive and negative values [last updated: July 2019]

Line items should be assigned with an appropriate signage and balance attribute in order to correctly convey the meaning of the particular element. Most XBRL numeric elements are designed to be ‘normally’ reported with a positive value. A negative value is only used when the opposite meaning is required, e.g. loss rather than profit. By appropriately submitting XBRL numeric disclosures as positive values, issuers can ensure the accuracy of their calculation relationships.

In particular, elements representing assets should be assigned with the debit balance attribute value and reported as a positive figure. Similarly, the credit balance attribute value should be used for elements that represent equity and liabilities.

Revenue and other income should be defined using the credit balance attribute value and reported as a positive number. Elements representing costs and expenses should be assigned with the debit balance attribute value and reported as positive figures. In the calculation linkbase, costs and expenses should be subtracted from revenues and other income.

Cash inflows reported in the cash flow statement should be defined as debit items and cash outflows as credit items and in both cases reported as positive figures. ESMA would like to draw attention in this regards to section 5 of the Preparer’s Guide published by the IFRS Foundation³ regarding the expression of tagged values as positive or negative in XBRL filings.

1.7 Units of measure

Guidance 1.7.1 Use of standard units of measure [last updated: July 2019]

As per the XBRL 2.1⁴ and Inline XBRL 1.1⁵ specifications, each numeric tag must be associated with a unit of measure. To achieve consistency in the use of units of measure (e.g. EUR for Euro, GW for Gigawatt, km for Kilometre, etc.) in Inline XBRL documents, issuers should check in the XBRL specifications and unit registry⁶ whether a required unit exists before defining a custom unit. Custom unit measures should not be created if a standard unit defined in the XBRL Specification or XBRL unit registry

³ <https://www.ifrs.org/-/media/feature/resources-for/preparers/xbrl-using-the-ifrs-taxonomy-a-preparers-guide-january-2019.pdf?la=en>

⁴ http://www.xbrl.org/Specification/XBRL-2.1/REC-2003-12-31/XBRL-2.1-REC-2003-12-31+corrected-errata-2013-02-20.html#_4.6.2

⁵ <http://www.xbrl.org/specification/inlinexbrl-part1/rec-2013-11-18/inlinexbrl-part1-rec-2013-11-18.html#sec-nonFractions>

⁶ <https://www.xbrl.org/utr/utr.xml>

can be used. Preparers are discouraged to define and use units that imply a scale factor on a given measure (e.g. millions of EUR) because the Inline XBRL specifications already provides a *scale* attribute which indicate the required scaling value.

1.8 Footnotes

Guidance 1.8.1 Marking up footnotes [last updated: July 2019] [new]

If an issuer discloses numbers in a declared currency in a footnote to the Primary Financial Statements, on the basis of the requirements set out by Annex III.1 of the RTS on ESEF, those numbers shall be marked-up with the appropriate tag available in the ESEF taxonomy, or with an extension taxonomy element, since they effectively belong to the Primary Financial Statements. If an extension element is created, then such extension shall be anchored as per the requirements set out by Annex IV.8 of the RTS on ESEF.

Please note that the term “footnote” is not understood in this context to be a synonym of the term “Notes”, which is used to indicate exclusively the Notes to the Primary Financial Statements. The figure below illustrates the numbers, including numbers disclosed in the footnotes, that must be tagged in a consolidated statement of cash flows (highlighted in yellow):

Consolidated statement of cash flows for the year ended 31 December			
	Notes	2016 €000	2015 €000
Operating activities			
Profit before tax			
Adjustments to reconcile profit before tax to net cash flows:			
Depreciation and impairment of tangible assets	11		
Amortization and impairment of intangible assets	12		
Disposal of fixed assets	11		
Deferred revenue recognition	22		
Finance income	9.6		
Finance costs	9.5		
Share of profit of an associate	6		
Capitalised revenue (test period)	11		
Working capital adjustments:			
Decrease (increase) in trade and other receivables*	16, 17, 18, 22		
Increase in inventories			
Increase (decrease) in trade and other payables	22, 23		

*Restricted Escrow account from bond issue in amount of EUR [] thousand (2015: EUR [] thousand), aimed at specific investments, has been excluded from the year-end cash amount.

FIGURE 1: EXAMPLE OF NUMBERS TAGGED IN A CONSOLIDATED STATEMENT OF CASH FLOW, INCLUDING NUMBERS DISCLOSED IN FOOTNOTES

In addition, issuers may apply on a voluntary basis XBRL footnotes to mark up the entire text of a footnote related to any portion of their financial statements or of the annual financial report (see rules defined in Guidance 2.3.1.).

2 Guidance for software firms to ensure technical validity

In the following section, ESMA provides software firms with recommendations on technical aspects and rules that should be supported by their tools to facilitate harmonised reporting by issuers. Furthermore, ESMA provides software firms with recommendations on which messages could be used to warn that a recommended rule is violated. To arrange the content of this document clearer, the recommended rules and messages were identified in grey boxes and with red font.

2.1 Contexts

Guidance 2.1.1 Use of the LEI to identify the issuer [last updated: July 2019]

According to Annex IV of the RTS on ESEF, issuers shall identify themselves in the Inline XBRL document using ISO 17442 legal entity identifiers.

This should be implemented in such way that an `xbrli:identifier` element has a valid Legal Entity Identifier (LEI) as its content. The taxonomy files prepared by ESMA include validity checks of pattern and check sum digit of the LEI.

The scheme attribute of the `xbrli:identifier` element should have "`http://standards.iso.org/iso/17442`" as its content.

Example (from <http://codes.eurofiling.info/>):

```
<xbrli:entity>
  <xbrli:identifier
scheme="http://standards.iso.org/iso/17442">KGCEPHLVVKVRZYO1T647</xbrli:identifier>
</xbrli:entity>
```

ESMA recommends software firms to include in their tools appropriate validations. The following messages are recommended to be used:

Messages: "invalidIdentifierFormat" and "invalidIdentifier"

Guidance 2.1.2 Formatting of the period element in the context of the Inline XBRL document [last updated: July 2019]

ESMA recommends presenting the period element in the `yyyy-mm-dd` format, i.e. without the time component (an example of a period element including a time component would be: `2017-01-01T00:00:00:00`). A time component is not expected to be necessary to tag annual reports. Moreover, it may result in inappropriate application and invalidity of defined calculation checks.

ESMA recommends software firms to include in their tools appropriate validations ensuring that:

The `xbrli:startDate`, `xbrli:endDate` and `xbrli:instant` elements MUST identify periods using whole days (i.e. specified without a time content and time zone).

In case of violation, the following messages are recommended to be used:

Violation: “periodWithTimeContent”, “periodWithTimeZone”

Guidance 2.1.3 Use of segment and scenario containers in the context elements of Inline XBRL documents [last updated: July 2019]

The XBRL 2.1 specification defines two open containers in context elements of XBRL instance documents. These are `xbrli:segment` and `xbrli:scenario`. According to the XBRL Dimensions 1.0 specification, a taxonomy prescribes which of the two shall be applied in XBRL instance documents to contain dimension members.

ESMA recommends to use `xbrli:scenario` for this purpose, therefore ESMA encourages software firms to include in their tools appropriate validations ensuring:

Extension taxonomy MUST set `xbrli:scenario` as context element on definition arcs with <http://xbrl.org/int/dim/arcrole/all> and <http://xbrl.org/int/dim/arcrole/notAll> arcroles.

`xbrli:segment` container MUST NOT be used in contexts.

In case of violation, the following message is recommended to be used:

Violation: “segmentUsed”

When using the `xbrli:scenario` in contexts, it should not contain any content other than that defined in XBRL Dimensions specification. Consequently, custom XML should not be used in `xbrli:scenario`.

ESMA recommends software firms to include in their tools appropriate validations ensuring:

`xbrli:scenario` in contexts MUST NOT contain any other content than defined in XBRL Dimensions specification.

The following messages are recommended to be used:

Messages: “scenarioContainsNonDimensionalContent”

Guidance 2.1.4 The Inline XBRL document should only contain data of the issuer [last updated: July 2019]

It should be ensured that the Inline XBRL document contains data only of a single issuer. ESMA recommends software firms to include in their tools appropriate validations ensuring:

All entity identifiers and schemes in contexts MUST have identical content

In case of violation, the following message is recommended to be used:

Violation: “multipleIdentifiers”

2.2 Facts

Guidance 2.2.1 Attributes to define the accuracy of numeric facts [last updated: July 2019]

There should be consistent use of a single attribute describing the precision of facts, as indicated in the working group note published by XBRL International⁷. Therefore ESMA recommends software firms to include in their tools appropriate validations ensuring:

The accuracy of numeric facts SHOULD be defined with the 'decimals' attribute rather than the 'precision' attribute.

The following messages are recommended to be used:

Messages: "precisionAttributeUsed"

Guidance 2.2.2 Representation of rates, percentages and ratios [last updated: July 2019] [new]

Issuers should ensure a consistent XBRL representation of rates, percentages and ratios in decimal notation. For that purpose, ESMA recommends to follow the provisions of XBRL 2.1 specification published by XBRL International⁸.

As an example following the above-mentioned specifications, if an issuer wants to tag a percentage value of 81%, this shall be tagged with ix:nonFraction element with a unit of *pure*⁹ and a scale attribute set to -2, resulting in XBRL representation of the value correct notation, i.e. as 0.81.

Guidance 2.2.3 Transformation of facts [last updated: July 2019] [new]

Whenever a string or numeric text used in an issuer's report is not following the format based on the predefined data type of taxonomy element used to mark up such string or numeric text, a transformation rule shall be applied.

ESMA recommends applying the latest available version of the Transformation Rules Registry marked with 'Recommendation' status, as published by XBRL International on a dedicated website¹⁰.

⁷ <http://www.xbrl.org/WGN/precision-decimals-units/WGN-2017-01-11/precision-decimals-units-WGN-2017-01-11.html#inconsistent-levels-of-accuracy>

⁸ http://www.xbrl.org/Specification/XBRL-2.1/REC-2003-12-31/XBRL-2.1-REC-2003-12-31+corrected-errata-2013-02-20.html#_4.8.2

⁹ http://www.xbrl.org/Specification/XBRL-2.1/REC-2003-12-31/XBRL-2.1-REC-2003-12-31+corrected-errata-2013-02-20.html#_5.1.1.3.1

¹⁰ <https://specifications.xbrl.org/spec-group-index-inline-xbrl.html>

Guidance 2.2.4 Facts duplication [last updated: July 2019] [new]

According to the Working Group Note on handling duplicate facts¹¹ published by XBRL International, there are three classes of duplicates for numeric facts:

- Complete duplicates;
- Consistent duplicates;
- Inconsistent duplicates.

Annex IV of the RTS on ESEF sets out that issuers shall not use numeric taxonomy elements to mark up different values for a given context unless the difference is a result of rounding related to presentation of the same information with different scale in more than one place in the same annual financial report. Based on the above definitions, it is required that issuers shall not report inconsistent duplicates within the content of an inline XBRL document.

Therefore, ESMA recommends software firms to include in their tools appropriate validations ensuring:

Inconsistent duplicate numeric facts MUST NOT appear in the content of an inline XBRL document.

In case of violation, the following message is recommended to be used:

Violation: inconsistentDuplicateNumericFactInInlineXbrlDocument

2.3 Footnotes

Guidance 2.3.1 Appropriate use of XBRL footnotes in the reports [last updated: July 2019]

XBRL footnotes may be used to provide additional information about the tagged data. The XBRL Specification and the XBRL Link Roles Registry define syntactical constructs and explain the semantics in the context of applying footnotes in instance documents. It is not expected that any other syntax and semantics will be needed to provide footnotes included in the financial statements.

ESMA recommends software firms to include in their tools appropriate validations ensuring:

The xlink:role attribute of a link:footnote and link:footnoteLink element as well as xlink:arcrole attribute of a link:footnoteArc MUST be defined in the XBRL Specification 2.1.

In case of violation, the following message is recommended to be used:

Violation: "nonStandardRoleForFootnote"

¹¹ <http://www.xbrl.org/WGN/xbrl-duplicates/WGN-2018-04-19/xbrl-duplicates-WGN-2018-04-19.html>

Furthermore, the placeholder for footnotes should be restricted only to the expected content.

Therefore, ESMA recommends software firms to include in their tools appropriate validations ensuring:

A link:footnoteLink element MUST have no children other than link:loc, link:footnote, and link:footnoteArc.

In case of violation, the following message is recommended to be used:

Violation: nonStandardElementInFootnote”

Orphaned footnotes (i.e. footnotes that are not linked to any tagged data) may cause interpretation problems. ESMA therefore recommends software firms to include in their tools appropriate validations ensuring:

Every nonempty link:footnote element MUST be linked to at least one fact.

In case of violation, the following message is recommended to be used:

Violation: “unusedFootnote”

As defined in XBRL 2.1¹² and Inline XBRL 1.1¹³ specifications, to enable automatic checks whether all footnotes in the report are provided in at least the language of the report, ESMA recommends software firms to include in their tools appropriate validations ensuring:

Each footnote MUST have the ‘xml:lang’ attribute whose value corresponds to the language of the text in the content of the respective footnote and all footnotes must be provided in at least the language of the report.

In case of violation the following messages are recommended to be used:

Violation: “undefinedLanguageForFootnote”

Violation: “footnoteOnlyInLanguagesOtherThanLanguageOfAReport”.

2.4 Restrictions on Inline XBRL and other constructs

Guidance 2.4.1 Inline XBRL constructs that should be avoided [last updated: July 2019]

It is not expected that tuples nor fraction items are required to reflect the content of financial statements. Therefore, these items should not be used unless strictly

¹² http://www.xbrl.org/Specification/XBRL-2.1/REC-2003-12-31/XBRL-2.1-REC-2003-12-31+corrected-errata-2013-02-20.html#_4.11.1.2.1

¹³ <http://www.xbrl.org/specification/inlinexbrl-part1/rec-2013-11-18/inlinexbrl-part1-rec-2013-11-18.html#d1e2141>

necessary. ESMA recommends software firms to include in their tools appropriate validations ensuring:

Tuples or items with `xbkli:fractionItemType` data type MUST NOT be defined in extension taxonomy

The `ix:tuple` and `ix:fraction` element MUST NOT be used in the Inline XBRL document.

In case of violation, the following messages are recommended to be used

Violation: “tupleElementUsed”

Violation: “fractionElementUsed”

Moreover, ESMA is of the opinion that for the ESEF reporting scenario the only relevant use case for inclusion of Inline XBRL constructs in the `ix:hidden` section (i.e. where content is not intended for display) is for facts that are not eligible for transformation (i.e. there is no transformation rule for a given format in the latest recommended Transformation Rules Registry).

In such case, the visible text in the report corresponding to the hidden fact shall have applied a custom style property “-esef-ix-hidden” which value follows the `@id` attribute of that fact.

For example:

```
<span @style="-esef-ix-hidden:abc">TEXT</span>
```

where ‘abc’ is the value of `@id` attribute on the fact in the hidden section and TEXT corresponds to its value in the report (that would have been transformed to the fact value should a transformation rule be available).

ESMA recommends software firms to include in their tools appropriate validations ensuring:

The `ix:hidden` section of Inline XBRL document MUST not include elements eligible for transformation.

The `ix:hidden` section contains a fact whose `@id` is not applied on any “-esef-ix-hidden” style.

“-esef-ix-hidden” style identifies `@id` of a fact that is not in `ix:hidden` section.

In case of violation, the following messages are recommended to be used

Violation: “transformableElementIncludedInHiddenSection”

Violation: “factInHiddenSectionNotInReport”

Violation: “esefIxHiddenStyleNotLinkingFactInHiddenSection”

Guidance 2.4.2 Other constructs that should be avoided [last updated: July 2019]
[new]

Application of the HTML <base> element or 'xml:base' attribute makes the processing of the Inline XBRL document more complex and may impact references to other files, images or CSS styles. Therefore, these items should not be used. ESMA recommends software firms to include in their tools appropriate validations ensuring:

The HTML <base> elements and xml:base attributes MUST NOT be used in the Inline XBRL document.

In case of violation, the following messages are recommended to be used

Violation: "htmlOrXmlBaseUsed"

2.5 Other content of Inline XBRL documents

Guidance 2.5.1 Inclusion of other content than XHTML and XBRL in the Inline XBRL document [last updated: July 2019]

As the inclusion of executable code is a potential threat and may cause security issues. ESMA recommends software firms to include in their tools appropriate validations ensuring:

Inline XBRL documents MUST NOT contain or import executable code (e.g. java applets, javascript, VB script, Shockwave, Flash, etc) either in the HTML script element or elsewhere within the file.

In case of violation, the following message is recommended to be used:

Violation: "executableCodePresent"

ESMA is of the opinion that it would be beneficial to include images in the XHTML document unless their size exceeds support of browsers in which case they may be separate files.

ESMA therefore recommends software firms to include in their tools appropriate validations ensuring:

Images MUST be included in the XHTML document as a base64 encoded string unless their size exceeds support of browsers in which case they may be contained in separate files in the package.

In case of violation, the following message is recommended to be used:

Violation: "embeddedImageNotUsingBase64Encoding"

Images appearing within an Inline XBRL tag should not be referenced to external files regardless of their size. Therefore, ESMA recommends software firms to include in their tools the following rule ensuring:

Images appearing within an inline XBRL element MUST be embedded regardless of their size.

In case of violation, the following message is recommended to be used:

Violation: “imageInXbrlElementNotEmbedded”

ESMA recommends that preparers do not embed images carrying financial information in the Inline XBRL document. Images should only be used for content such as branding information, graphical layout, photographs, etc.

Guidance 2.5.2 Indication of the language used in textual mark ups [last updated: July 2019]

ESMA recommends to apply the ‘*xml:lang*’ attribute identifying the language of the report on the root html element of the XHTML file. Additionally it is recommended to apply it also on the *ix:references* tag from which it shall be transformed to the root *xbrli:xbrl* element of the resulting XBRL instance document.

Each tagged text fact¹⁴ should have an ‘*xml:lang*’ attribute that is assigned to the fact or inherited e.g. from the root element. Its value must correspond to the language of text in the content of a tag.

To enable automatic checks whether all tags in the report are provided in at least the language of the report, ESMA recommends software firms to include in their tools appropriate validations ensuring:

Each tagged text fact MUST have the ‘*xml:lang*’ attribute assigned or inherited and all tagged text facts MUST be provided in at least the language of the report

In case of violation, i.e. missing ‘*xml:lang*’ attribute, the following message is recommended to be used:

Violation: “undefinedLanguageForTextFact”

Violation: “taggedTextFactOnlyInLanguagesOtherThanLanguageOfAReport”.

Guidance 2.5.3 Use of more than one target XBRL document for an Inline XBRL Document Set (IXDS) [last updated: December 2017]

Only one XBRL instance document is expected in a filing, therefore only one target XBRL document should be set for an IXDS. Therefore, ESMA recommends software firms to include in their tools a following rule ensuring:

Target attribute MUST not be used.

In case of violation, the following message is recommended to be used:

Violation: “targetAttributeUsed”

¹⁴ As defined in <http://www.xbrl.org/Specification/oim/CR-2017-05-02/oim-CR-2017-05-02.html#term-text-simple-fact>.

Guidance 2.5.4 Use of the Cascading Style Sheet (CSS) language to style Inline XBRL documents [last updated: July 2019]

CSS may be used to format the reports. However, the transformations need to be used appropriately (for example, they should not be used to hide information by making it not visible).

In order to limit the number of files submitted and encourage the reuse of styles in case of multi-html Inline XBRL document sets, ESMA recommends software firms to include in their tools rules ensuring:

Where an Inline XBRL document set contains a single document, the CSS MUST be embedded within the document.

In case of violation, the following message is recommended to be used:

Violation: “externalCssFileForSingleIXbrlDocument”

Where an Inline XBRL document set contains multiple documents, the CSS SHOULD be defined in a separate file.

In case of violation, the following messages are recommended to be used:

Violation: “embeddedCssForMultiHtmlIXbrlDocumentSets”

Furthermore, in case of multi-html Inline XBRL document sets, the CSS file should be physically stored within the report package.

Guidance 2.5.5 Application of ix:continuation and ix:exclude elements [last updated: July 2019] [new]

Further to Guidance 1.3.3, ESMA recommends that application of *ix:continuation* or *ix:exclude* element should be applied for marking-up multiple pieces of text to a single text block tag.

In this regards, ESMA draws preparers’ attention to the existing provisions on application of *ix:continuation* (Section 4 of the Inline XBRL 1.1 specification) and of *ix:exclude* (Section 5 of the Inline XBRL 1.1 specification)¹⁵.

2.6 Reporting packages

Guidance 2.6.1 Including Inline XBRL document in taxonomy packages [last updated: July 2019] [new]

ESMA recommends issuers to follow the recommendations of XBRL International Working Group Note¹⁶, which indicates how Inline XBRL documents should be included

¹⁵ <http://www.xbrl.org/specification/inlinexbrl-part1/rec-2013-11-18/inlinexbrl-part1-rec-2013-11-18.html#d1e1605>

¹⁶ <http://www.xbrl.org/WGN/report-packages/WGN-2018-08-14/report-packages-WGN-2018-08-14.html>

within a taxonomy package. Furthermore, the Inline XBRL document should have a .html extension when submitted as packaged report.

Guidance 2.6.2 Including multi-html Inline XBRL documents and multiple Inline XBRL document sets in taxonomy packages [last updated: July 2019] [new]

For multiple Inline XBRL documents within a taxonomy package it is recommended to follow the approach proposed in the Working Group Note on report packages.

Guidance 2.6.3 Naming convention for report packages [last updated: July 2019] [new]

The report packages, as well as all the files included in those report packages, should ideally follow predefined naming conventions to facilitate the processing of issuers' reports by end-users. Whilst ESMA did not define in the RTS on ESEF a unique naming convention for ESEF files, issuers should refer to their Officially Appointed Mechanism and / or National Competent Authorities for indications of any naming conventions which may be required at national level.

2.7 Technical validity of reports

Guidance 2.7.1 Ensuring report validity against XBRL specifications [last updated: July 2019] [new]

Annex III of the RTS on ESEF sets out that the issuers must ensure that the Inline XBRL document is valid with respect to a set of listed XBRL specifications. Furthermore, ESMA is of the opinion that it would be beneficial to issuers to also validate their reports against the assertions (validation rules) defined in the ESEF taxonomy, prepared according to the Formula 1.0 specification and its modular extensions¹⁷. Therefore, ESMA recommends software firms to include in their tools rules ensuring:

Inline XBRL document MUST be valid with respect to the Inline XBRL 1.1 specification¹⁸.

Inline XBRL document MUST be valid with respect to the XBRL 2.1 specification¹⁹.

Inline XBRL document MUST be valid with respect to the XBRL Dimensions 1.0 specification²⁰.

In case of violation, the following messages are recommended to be used:

Violation: "inlineXBRLDocumentNotValidAgainstInlineXBRLSpecification"

Violation: "inlineXBRLDocumentNotValidAgainstXBRLBaseSpecification"

¹⁷ <https://specifications.xbrl.org/work-product-index-formula-formula-1.0.html>

¹⁸ <https://specifications.xbrl.org/work-product-index-inline-xbrl-inline-xbrl-1.1.html>

¹⁹ <https://specifications.xbrl.org/work-product-index-group-base-spec-base-spec.html>

²⁰ <https://specifications.xbrl.org/work-product-index-group-dimensions-dimensions.html>

Violation: “inlineXBRLDocumentNotValidAgainstXBRLDimensionsSpecification”

Furthermore,

Target XBRL document **MUST** be valid against the assertions specified in ESEF taxonomy with severity set to <http://www.xbrl.org/2016/severities.xml#ERROR> appearing as target of generic arc with <http://xbrl.org/arcrole/2016/assertion-unsatisfied-severity> arcrole.

Target XBRL document **SHOULD** be valid against the assertions specified in ESEF taxonomy with severity set to <http://www.xbrl.org/2016/severities.xml#WARNING> appearing as target of generic arc with <http://xbrl.org/arcrole/2016/assertion-unsatisfied-severity> arcrole.

In case of violation, the following messages are recommended to be used:

Violation: “targetXBRLDocumentWithFormulaErrors”

Violation: “targetXBRLDocumentWithFormulaWarnings”

3 Technical guidance for issuers and software firms on extension taxonomies and other topics

The following technical guidance is aimed at both issuers and software firms.

3.1 Extension taxonomy

Guidance 3.1.1 Required components of extension taxonomies and reference to the taxonomy files prepared by ESMA [last updated: December 2017]

According to the RTS on ESEF, issuers shall ensure that XBRL extension taxonomies contain the following structures:

- a) Presentation and calculation linkbase, which group the elements and express arithmetic relationships between the used elements;
- b) Label linkbase, which describes the meaning of each applied element;
- c) Definition linkbase, which ensures dimensional validity of the resulting XBRL instance document against the taxonomy and stores anchoring relationships.

ESMA recommends software firms to include in their tools rules ensuring:

Extension taxonomies **MUST** consist of at least a schema file and presentation, calculation, definition and label linkbases.

Each linkbase type **SHOULD** be provided in a separate linkbase file.

The issuer’s extension taxonomies **SHOULD** import the entry point of the taxonomy files prepared by ESMA.

In case of violation, the following messages are recommended to be used:

Violation: “extensionTaxonomyWrongFilesStructure”

Violation: “linkbasesNotSeparateFiles”

Violation: “requiredEntryPointNotImported”

Guidance 3.1.2 Taxonomy files published by ESMA [last updated: July 2019] [new]

As set out in Article 7 of the RTS on ESEF, ESMA aims to facilitate the implementation of ESEF by providing XBRL taxonomy files that are compliant with all relevant technical and legal requirements in the RTS. Issuers are encouraged to use the published ESEF taxonomy as a starting point to create extension taxonomies. The XBRL taxonomy with accompanying supportive documentation and list of available entry points for use by issuers in their taxonomies is freely available for download at: <https://www.esma.europa.eu/policy-activities/corporate-disclosure/european-single-electronic-format> under the section “ESEF XBRL Taxonomy files”.

Guidance 3.1.3 Taxonomy packages [last updated: July 2019] [new]

Annex III of the RTS on ESEF sets out that the issuers shall submit the Inline XBRL document and the issuer’s XBRL extension taxonomy files as a single reporting package, where XBRL taxonomy files are packaged according to the Taxonomy Packages specifications. ESMA recommends applying the latest version of the Taxonomy Packages specification, marked with ‘Recommendation’ status, as published by XBRL International on the dedicated website²¹. Moreover, issuers should follow the specification Working Group Note on report packages in the preparation of the taxonomy package for submission.

Guidance 3.1.4 Ensuring taxonomy validity against XBRL specifications [last updated: July 2019] [new]

Annex III of the RTS on ESEF sets out that issuers must ensure that their extension taxonomy is valid with respect to a set of listed XBRL specifications. Therefore, ESMA recommends software firms to include in their tools the following rules:

Issuer specific extension taxonomy MUST be valid with respect to the XBRL 2.1 specification²².

Issuer specific extension taxonomy MUST be valid with respect to the XBRL Dimensions 1.0 specification²³.

In case of violation, the following messages are recommended to be used:

²¹ <http://specifications.xbrl.org/spec-group-index-taxonomy-packages.html>

²² <https://specifications.xbrl.org/work-product-index-group-base-spec-base-spec.html>

²³ <https://specifications.xbrl.org/work-product-index-group-dimensions-dimensions.html>

Violation: “extensionTaxonomyNotValidAgainstXBRLBaseSpecification”

Violation: “extensionTaxonomyNotValidAgainstXBRLDimensionsSpecification”

3.2 Extension taxonomy elements

Guidance 3.2.1 Naming conventions for extension taxonomy elements [last updated: July 2019]

Extension taxonomy element names should represent the standard label of this element in the Label CamelCase Concatenation [LC3] convention²⁴ unless it violates XML element naming rules. If multiple standard labels exist for extension taxonomy element (i.e. in various languages), then any of those labels may be used as the basis for constructing the extension taxonomy element name. This is to follow the conventions applied in the ESEF taxonomy and the underlying IFRS Taxonomy.

ESMA recommends software firms to include in their tools rules ensuring:

Extension taxonomy element name SHOULD follow the LC3 convention.

In case of violation, the following messages are recommended to be used:

Violation: “extensionTaxonomyElementNameDoesNotFollowLc3Convention”

Guidance 3.2.2 Data types to be used on extension concepts [last updated: December 2017]

The type attribute value of an extension concept shall reflect the type of information that is marked up in the Inline XBRL document.

To ensure consistency in the use of data types in issuers’ extension taxonomies, extension taxonomy schemas should not define and apply on elements a custom type if a suitable type is already defined by the XBRL Specifications or in the XBRL data types registry²⁵. Issuers should check the XBRL data types registry to see whether a required data type exists before they define a custom data type.

ESMA recommends software firms to include in their tools validation messages to facilitate the adherence to the following rule:

Extension taxonomy MUST NOT define a custom type if a matching type is defined by the XBRL Specifications or in the XBRL data types registry²⁶.

Specifically, domain members in extension taxonomies should be defined using the ‘domainItemType’ data type.

ESMA recommends software firms to include in their tools rules ensuring:

²⁴ http://www.xbrl.org/technical/guidance/FRTA-RECOMMENDATION-2005-04-25.htm#_2.1.4

²⁵ <http://www.xbrl.org/dtr/dtr.xml>

²⁶ <http://www.xbrl.org/dtr/dtr.xml>

Domain members **MUST** have `domainItemType` data type as defined in <http://www.xbrl.org/dtr/type/nonNumeric-2009-12-16.xsd>

In case of violation, the following messages are recommended to be used:

Violation: “domainMemberWrongDataType”

Guidance 3.2.3 Use of typed dimensions in issuers’ extension taxonomies [last updated: December 2017]

As it is allowed to extend the ESEF taxonomy, ESMA does not deem that it is necessary to define typed dimensions. Therefore, ESMA recommends not defining typed dimensions in the extension taxonomy, but creating explicit elements to tag information in the annual financial report instead.

ESMA recommends software firms to include in their tools rules ensuring:

Extension taxonomy SHOULD NOT define typed dimensions.

In case of violation, the following messages are recommended to be used:

Violation: “typedDimensionDefinitionInExtensionTaxonomy”

Guidance 3.2.4 Identification of extension taxonomy element [last updated: July 2019]

Every element is defined in a namespace represented as a Universal Resource Identifier (URI) that identifies the organization that maintains the element definitions. The elements included in the taxonomy files prepared by ESMA therefore include ESMA’s namespace for ESEF-specific extension elements and IFRS’s namespace for elements imported from the IFRS taxonomy. Also the creator of the extension taxonomy elements of an issuer should be identified by the issuer’s namespace.

Issuers may refer to their Officially Appointed Mechanism and / or National Competent Authorities for indications of any extension taxonomy namespace.

ESMA recommends software firms to include in their tools rules ensuring:

The extension taxonomy namespace MUST identify the issuer.

Guidance 3.2.5 Definition of abstract concepts in extension taxonomies [last updated: December 2017]

In general, it is not required and ESMA therefore discourages issuers to define abstract concepts in their extension taxonomy. The abstract concepts included in the applicable taxonomy should be sufficient to structure the relationships in the presentation or definition linkbases. Nevertheless, should another grouping item be needed to better reflect the structures of elements used to tag information in the annual financial report, issuers might define abstract headers in the extension taxonomy.

ESMA recommends software firms to include in their tools rules ensuring:

Extension taxonomy SHOULD NOT define abstract concepts.

In case of violation, the following messages are recommended to be used:

Violation: “abstractConceptDefinitionInExtensionTaxonomy”

3.3 Extension taxonomy anchoring

Guidance 3.3.1 Relationships to anchor extension taxonomy elements to elements in the ESEF taxonomy [last updated: July 2019]

The RTS on ESEF sets out that extension taxonomy elements should be anchored to elements in the ESEF taxonomy and that the relationship between the extension taxonomy elements should be identified.

The RTS on ESEF distinguishes two different relationships:

- An extension taxonomy element has a narrower accounting meaning or scope than an element in the ESEF taxonomy. The issuer shall identify the relationship of the extension taxonomy element concerned with the element in the ESEF taxonomy concerned in the issuer’s XBRL extension taxonomy’s definition linkbase. The definition linkbase *link:definitionArc* with *arcrole* attribute set to ‘<http://www.xbrl.org/lrr/arcrole/esma-arcrole-2018-11-21.xsd#wider-narrower>’ as defined in the Link Role Registry 2.0²⁷ should be used for this purpose. The extension taxonomy element shall appear as the target of the relationship.
- An extension taxonomy element has a wider accounting meaning or scope than an element in the ESEF taxonomy. The issuer shall identify the relationship of the extension taxonomy element concerned with the element in the ESEF taxonomy concerned in the issuer’s XBRL extension taxonomy’s definition linkbase. The definition linkbase *link:definitionArc(s)* with *arcrole* attribute set to: ‘<http://www.xbrl.org/lrr/arcrole/esma-arcrole-2018-11-21.xsd#wider-narrower>’ as defined in the Link Role Registry 2.0 should be used for this purpose. The extension taxonomy element shall appear as the source of the relationship or relationships.

Guidance 3.3.2 Where to define the anchoring relationships [last updated: July 2019]

Anchoring relationships shall be defined within the definition linkbase of issuer-specific extension taxonomy. It should be ensured that the anchoring relationships do not interfere with other content in the definition linkbase.

For example, the following structure of the anchoring relationships can be provided in the definition linkbase (all relationships are using *wider-narrower* arcrole):

[000099] Anchoring (<http://company.eu/xbrl/2020/role/Anchoring>):

²⁷ <https://specifications.xbrl.org/registries/lrr-2.0/#arcrole-wider-narrower>

- Issue of equity (IFRS)
 - Capital increases in kind (EXT)
 - Capital increases in cash (EXT)
- Equity (IFRS)
 - Issued capital and share premium (EXT)
 - Issued capital (IFRS)
 - Share premium (IFRS)
- [...]

ESMA therefore recommends software firms to include in their tools rules ensuring:

Anchoring relationships MUST be defined in a dedicated extended link role (or roles if needed to properly represent the relationships), e.g. `http://{issuer default pattern for roles}/Anchoring`

Anchoring relationships MUST NOT be defined in an extended link role applying XBRL Dimensions relationship.

In case of violation, the following message is recommended to be used:

Violation: “anchoringRelationshipsDefinedInElrContainingDimensionalRelationships”

3.4 Extension taxonomy linkbases

Guidance 3.4.1 Modelling of the issuers’ extension taxonomies’ linkbases [last updated: December 2017]

XBRL 2.1 specification enables to document in the calculation linkbase arithmetic relationships between elements referring to the same context, i.e. same period and identical dimensional qualifiers. Therefore, the calculation linkbase is limited to calculations with a single context.

However, the primary financial statements contain a number of cross-period arithmetic relationships that cannot be reflected in the calculation linkbase. An example for cross-period arithmetic relationships is the statement of cash flows where the sum of inflows and outflows of the period corresponds to the change of the cash balance from the beginning of the period to the end of the period. Another example is the statement of changes in equity that contains reconciliations between the carrying amount at the beginning and the end of the period for each component of equity.

As the calculation linkbase cannot be used to effectively define data quality checks on such cross-period relationships, the presentation linkbase should be used to document these cross-period and cross-dimension arithmetical dependencies which shall enable the execution of at least semi-automated validations.

The presentation linkbase should therefore, where possible, be constructed as follows:

Statement/Disclosure of changes in X [line items]
 X at begging of period (**preferred period start label**)

Changes/Adjustments in X [abstract]
 Increases/decreases in ...
 ...
 Total changes/adjustments in X **(preferred total label, if reported in the AFR)**
 X at end of period **(preferred period end label)**

This applies in particular to the statement of changes in equity and the statement of cash flows, which typically contain cross period information and are required to be mandatorily tagged.

For example, the structure of the statement of changes in equity in the presentation linkbase may look as follows:

Statement of changes in equity [line items]
 equity at beginning of period (periodStartLabel)
 changes in equity [abstract]
 comprehensive income
 issued capital
 dividends paid
 equity at end of period (periodEndLabel)

This enables to carry out the following calculation check:

Equity at end of period = equity at beginning of period + comprehensive income + issued capital - dividends paid.

Mind that the sign of the operation depends on the values of the line items' balance attributes. In the example above, elements with their balance attribute set to credit are added to 'equity' (which is also credit) while debit elements (e.g. 'dividends paid') are subtracted. The plus sign is used in case a line item has no balance attribute (e.g. 'cash flows from (used in) operating activities').

Furthermore, parent-child relationships between domain members in presentation linkbases should be defined as if they were calculation linkbase links between line items (i.e., lower level elements contribute to upper level element with weight +1). If different weights apply, all domain members should be presented on the same level.

For example, the following structure in the presentations linkbase:

Equity [member]
 equity attributable to owners of parent [member]
 issued capital [member]
 share premium [member]
 retained earnings [member]
 non-controlling interests [member]

informs that a line item (e.g. 'issued capital') referring to 'equity [member]' of 'components of equity [axis]' dimension equals the sum of this line item value for 'equity attributable to owners of parent [member]' and 'non-controlling interests [member]', etc. This rule concerns only the presentation linkbase. Definition linkbase relationships between domain members are used solely for dimensional validation purposes.

If different weight applies in calculation between domain members (e.g. '-1'), all domain members should be presented on the same level so that this check is not executed.

Guidance 3.4.2 Defining the dimensional validity of line items in the definition linkbase [last updated: July 2019]

Dimensional validation may be defined using 'all' and 'notAll' arcroles linking to positive and negative hypercubes respectively. In all cases, positive hypercubes are sufficient to define the dimensional validation. Although in some cases it may be more efficient to apply negative hypercubes, it is encouraged to use the positive hypercubes instead. To follow the recommendations of the XBRL Working Group note <http://www.xbrl.org/WGN/dimensions-use/WGN-2015-03-25/dimensions-use-WGN-2015-03-25.html#sec-open-hypercube-validation-issues> and <http://www.xbrl.org/WGN/dimensions-use/WGN-2015-03-25/dimensions-use-WGN-2015-03-25.html#sec-negative-open-hypercubes>, ESMA recommends software firms to include in their tools rules ensuring:

Extension taxonomies SHOULD NOT define definition arcs with <http://xbrl.org/int/dim/arcrole/notAll> arcrole.

Hypercubes appearing as target of definition arc with <http://xbrl.org/int/dim/arcrole/all> arcrole MUST have xbrldt:closed attribute set to "true".

Hypercubes appearing as target of definition arc with <http://xbrl.org/int/dim/arcrole/notAll> arcrole MUST have xbrldt:closed attribute set to "false".

In case of violation, the following messages are recommended to be used:

Violation: "notAllArcroleUsedInDefinitionLinkbase"

Violation: "openPositiveHypercubeInDefinitionLinkbase"

Violation: "closedNegativeHypercubeInDefinitionLinkbase"

Furthermore, each line item used in the report to tag data should be valid according to at least one hypercube in the extension taxonomy's definition linkbase. In particular, ESEF taxonomy provides a dedicated extended link role [999999] *Line items not dimensionally qualified* that shall be used to link items that do not require any dimensional information to tag data in the issuer's report to a predefined hypercube, i.e. *esef_cor:LineItemsNotDimensionallyQualified*.

For example, the following structure may be created in the definition linkbase:

[999999] *Line items not dimensionally qualified*

- Issuer's extension element used for tagging 1
 - Line items not dimensionally qualified
 - Consolidated and separate financial statements [axis]
 - Consolidated [member]
- Issuer's extension element used for tagging 2
 - Assets
 - Liabilities

[...]

To follow the recommendations of the XBRL Working Group note <http://www.xbrl.org/WGN/dimensions-use/WGN-2015-03-25/dimensions-use-WGN-2015-03-25.html#sec-open-hypercube-recommendation> ESMA recommends software firms to include in their tools rules ensuring:

Line items that do not require any dimensional information to tag data MUST be linked to “Line items not dimensionally qualified” hypercube in http://www.esma.europa.eu/xbrl/eseef/role/eseef_role-999999 declared in *eseef_cor.xsd*.

In case of violation, the following messages are recommended to be used:

Violation: “extensionTaxonomyLineItemNotLinkedToAnyHypercube”

Guidance 3.4.3 Definition of default members of extension taxonomy dimensions [last updated: July 2019]

Issuers are required to assign a default member for each dimension defined in the issuer extension taxonomy. For this purpose, the ESEF taxonomy provides a dedicated extended link role *[990000] Axis – Defaults* to be used to link default members to a particular dimension with use of *dimension-default* arcrole²⁸. Moreover, a set of default members is globally assigned in the ESEF taxonomy for each ESEF taxonomy dimension item defined and must not be modified in issuer extension taxonomy.

For example, the following structure may be created in the definition linkbase:

[990000] Axis – Defaults

- Components of equity [axis]
 - Equity [member]
- Consolidated and separate financial statements [axis]
 - Consolidated [member]
- Issuer’s extension dimension [axis]
 - Issuer’s extension default [member]

To ensure the appropriate definition of default members, ESMA recommends software firms to include in their tools rules ensuring:

The extension taxonomy MUST not modify (prohibit and/or override) default members assigned to dimensions by the ESEF taxonomy.

Each dimension in an issuer specific extension taxonomy MUST be assigned to a default member in the ELR with role URI http://www.esma.europa.eu/xbrl/eseef/role/ifrs-dim_role-990000 defined in *eseef_cor.xsd* schema file.

In case of violation, the following messages are recommended to be used:

²⁸ <http://www.xbrl.org/specification/dimensions/rec-2012-01-25/dimensions-rec-2006-09-18+corrected-errata-2012-01-25-clean.html#sec-default-values-for-dimensions>

Violation: “extensionTaxonomyOverridesDefaultMembers”

Violation:

“extensionTaxonomyDimensionNotAssignedDefaultMemberInDedicatedPlaceholder”

Guidance 3.4.4 Use of preferred labels on presentation links in extension taxonomies [last updated: July 2019]

Extension taxonomies should apply preferred labels on presentation links when applicable. This concerns in particular total and period start and end labels. Labels defined in other label roles (e.g. terse, net, negated etc.) may be assigned to preferred labels. Extension concepts may be defined with and assigned to preferred labels.

Guidance 3.4.5 Use of labels on elements in extension taxonomies [last updated: July 2019] [new]

It is possible for an element in the extension taxonomy of an issuer to be assigned with multiple label resources defined with different ‘xlink:role’ attributes, as listed by the XBRL 2.1 specification²⁹ or Link Role Registry³⁰. Custom roles are not recommended to be used for labels, unless strictly necessary. Each taxonomy extension element shall be defined with at most one label for any combination of ‘xlink:role’ and ‘xml:lang’ attribute. ESMA recommends applying at least one label defined in the standard label role, i.e. <http://www.xbrl.org/2003/role/label>, for each taxonomy extension element.

Guidance 3.4.6 Restrictions on taxonomy relationships [last updated: July 2019]

The presentation linkbase shall mirror the content and structure of the human-readable layer of the issuer’s report. That means that a line item must only appear in the presentation linkbase if it is associated with a reported value in the year of reference (i.e. it must not appear, for example, if it was used in the past but it is no longer used).

Reportable (i.e. non-abstract) concepts that are not used for tagging the financial statements shall not be applied in presentation, calculation or definition (with exception of anchoring) linkbases of an issuer-specific extension taxonomy. Therefore ESMA recommends software firms to include in their tools the following rules:

All concepts used in tagging MUST be applied in extension taxonomy relationships.

In case of violation, the following messages are recommended to be used:

Violation: “elementsNotUsedForTaggingAppliedInPresentationLinkbase”

Violation: “elementsNotUsedForTaggingAppliedInCalculationLinkbase”

Violation: “elementsNotUsedForTaggingAppliedInDefinitionLinkbase”

²⁹http://www.xbrl.org/Specification/XBRL-2.1/REC-2003-12-31/XBRL-2.1-REC-2003-12-31+corrected-errata-2013-02-20.html#_5.2.2.2.2

³⁰ <https://specifications.xbrl.org/registries/lrr-2.0/>

3.5 Other issues

Guidance 3.5.1 References pointing to resources outside the reporting package [last updated: December 2017]

The Inline XBRL document should be a standalone, self-explanatory and complete set of information. Therefore, ESMA recommends software firms to include in their tools rules ensuring:

Inline XBRL documents MUST NOT contain any reference pointing to resources outside the reporting package.

In case of violation, the following messages are recommended to be used:

Violation: "inlineXbrlDocumentContainsExternalReferences"