ConiX. <u>Conv</u>erter to <u>iX</u>BRL

Specifications.

Abstract.

The input file is from a *flat-like* basic HTML until a full XHTML, being the output an iXBRL file.

The iXBRL file is an XHTML file in which each *fact* (regulatory-relevant piece of information, as a figure, a text…) is embedded into a XBRL tag:
<ix:nonnumeric name="esrs:DisclosureOfGeneral"…>Loren ipsum</ix:nonnumeric>

The iXBRL file is based on the ESRS taxonomy: <u>Draft-XBRL-Taxonomy-for-ESRS-Set-1-</u>

The input file should have the XBRL information for each *fact* coded in the style attribute of an HTML element enveloping the *fact*: <div style="--conix-concept:DisclosureOfGeneral;">Loren Ipsum</div>

If the input file has a *flat-like* basic HTML content, this converter will create a full XHTML file, using style attributes: <div style="--conix-Heading:16px;">[BP-1] General basis</div>

The result of the conversion is provided as a file, with the Ok or the list of errors.

The converter is coded as a JavaScript / TypeScript function. The converter will run in the executable environment of the user.

The converter requires a taxonomy file, with the metadata required for the XBRL generation.
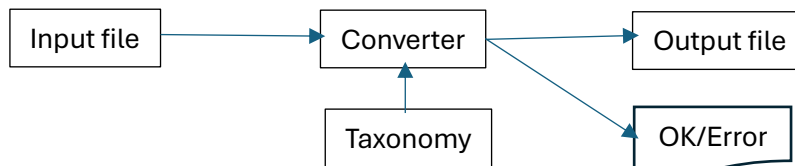
XBRL metadata and datapoints:

The explanations of the XBRL metadata for ESRS and Article 8 can be found at:

Draft XBRL ESRS Set 1 – Explanatory Note and Basis for Conclusions (PDF) (65 pages)

Draft XBRL Article 8 – Explanatory Note and Basis for Conclusions (PDF) (24 pages)

In more practical terms, what is required are the respective Taxonomy Illustrated (Excel files):

Annex 1 to the Explanatory Note – XBRL ESRS Set 1 Taxonomy illustrated (Excel)

Annex 1 to the Explanatory Note – Article 8 Taxonomy illustrated (Excel)

See also commercial products as *ESRS Public Draft Taxonomy Presentation Template*

Each *fact* is tagged by a unique *datapoint*. The *datapoint* tag is a combination of:

- Concept (mandatory)
- Dimensions (if applicable)
- Period (default applies)
- Unit (default applies)

Concept:

Is defined in one or several row/s in the Taxonomy Illustrated, except if label (column C) ends in [abstract], [table], [axis], [typed axis], [member], [line items]

Each concept has one of these types (column G):

- Area, decimal, energy, ghgEmisions, gYear, integer, mass, volume are numeric.
- Monetary is numeric, requiring a currency unit (EUR by default)
- energyPerMonetary, ghgEmisionsPerMonetary, volumePerMonetary are numeric. As this is a combination with monetary, also requires a currency unit (EUR by default).
- Date may be expressed in several ways. Typically is DD-MM-YYYY
- Boolean may by true or false
- Enumeration is the selection of a single case in a predefined list in the taxonomy. EnumerationSet is the selection of one or several cases in a predefined list in the taxonomy. esrs:BasisForPreparationOfSustainabilityStatement is a enumeration selecting among IndividualMember and ConsolidatedMember
  See the document *enumerations* for the description and the full list.
- String is a text without internal XBRL elements (nesting not allowed).
- TextBlock is a text with or without internal XBRL elements (nesting allowed).

Dimensions:

A concept may be reported several times, each one with a different dimensional combination.

A dimension is the combination of an Axis and a Member.

An Axis may have a predefined list of Members (explicit dimension), or not a predefined list of members (typed dimension).

Explicit dimension example (row 54):

- esrs:TopicalESRSAxis
  - esrs:TopicTopicUnspecifiedMember
    - esrs:ESRSE4BiodiversityAndEcosystemsMember
    - esrs:ESRSS1OwnWorkforceMember
    - esrs:ESRSS2WorkersInValueChainMember
    - esrs:ESRSS3AffectedCommunitiesMember

The declared dimension would be: TopicalESRSAxis / ESRSS1OwnWorkforceMember.

The first Member of an explicit dimension is the default Member, and it is only used for XBRL hierarchy. Do not use it in actual dimensional combinations. Simply ignore it.

The default member of esrs:TopicalESRSAxis is esrs:TopicTopicUnspecifiedMember, not to be used.

If the number of members if large (as in esrs:SectorsAndEconomicActivitiesAxis, row 155), the list of members is not presented in the Taxonomy Illustrated (Excel) as a matter of space.

Typed dimension example (row 26):

The Member would be whatever value, as: esrs:NameOfMetricsTypedAxisMandatory / Metrics1

Example of dimensional combination (row 334):

esrs:IdentifierOfActionPlanTypedAxis / PlanA   esrs:ReportingScopeAxis / esrs:ShorttermMember

Period:

See Taxonomy Illustrated column G.

The period can be duration (as 2023-01-01 / 2023-12-31) or instant (2024-12-31).

Each concept is consistently or duration or instant. See example at row 142:

esrs:NumberOfEmployeesHeadcountAtEndOfPeriod 2023-12-31

esrs:NumberOfEmployeesHeadCountDuringPeriod 2023-01-01 / 2023-12-31

As the period is usually the same for most of the concepts, default is used.

Unit:

Typically is EUR, by default

Note in Taxonomy Illustrated, column D: "Please disclose with the appropriate unit in the XBRL Unit Registry." Is also EUR by default.

Examples of iXBRL facts.

See the examples provided by EFRAG at:

Annex 2 to the Explanatory Note – Illustrative examples of XBRL ESRS Set 1 reports (ZIP file)

Annex 2 to the Explanatory Note – Illustrative examples of XBRL Article 8 reports (ZIP file)

See ESRS 2 folder, file efrag-20251231.xhtml (text value distilled)

<ix:nonnumeric
name="esrs:DisclosureOfReasonsWhyScopeOfConsolidationIsNotSameAsForFinancialStatementsExpl
anatory"....>
Praesent risus nisl, semper non imperdiet eget, volutpat vitae orci</ix:nonnumeric>

Rule of thumb to determine the datapoint of a fact.

The easiest approach is exploring the Taxonomy Illustrated Excel file.

In the column B there are 100+ different Roles. Each Role has a list of concepts.

The first step is determining the Role applicable to the concept.

A concept is part of a table if the concept is a child of a [line items] element.

All the Axis elements between the element [table] and the element [line items] applies to all the concepts child of [line items]. The parent both of element [table] and element [line items] is an [abstract] element. See example at row 24:

- Value chain estimation [abstract]
  - Value chain estimation [table]
    - Name of metric(s) [typed axis]
  - Value chain estimation [line items]
    - Description of basis for preparation of metrics that include upstream and (or) downstream value chain data estimated using indirect sources [text block]
    - Description of resulting level of accuracy of metrics that include upstream and (or) downstream value chain data estimated using indirect sources [text block]
    - Description of planned actions to improve accuracy in future of metrics that include upstream and (or) downstream value chain data estimated using indirect sources [text block]

A concept is not repeated in different rows (inside a Role or among different Roles) unless the concept belongs to different tables.

Eg: Row 28. Illustrative examples .zip ESRS 2 [BP-2] Disclosures in relation to specific circumstances:

Concept:_esrs:DescriptionOfBasisForPreparationOfMetricsThatIncludeUpstreamAndOrDownstreamValueChainDataEstimatedUsingIndirectSourcesExplanatory

Dimension: esrs:NameOfMetricsTypedAxis / (typed member value:=) 0

Value: Vivamus sit amet imperdiet velit, ut pellentesque velit. Quisque auctor, lacus vel porta fringilla, turpis libero condimentum urna, aliquet aliquam justo dolor at eros.

Input file specifications.

The input file accepts from a basic HTML **content** to a full XHTML file.

The minimum basic HTML *content* is the text inside of the HTML element <body> **content** </body>, even without HTML decorative styles.

The first step is reading the basic **content** and then generate a full XHTML file (if required).

The final step is read the full XHTML input file, transform include the XBRL elements, converting it into ConiX will include the iXBRL elements.

Each fact should be inside (contained into) an HTML element. All and each *fact* in the file must have associated an XBRL metadata simplified description, by specific style properties of this converter. Eg:

<div style="--conix-concept:
DisclosureOfReasonsWhyScopeOfConsolidationIsNotSameAsForFinancialStatementsExplanatory;">
Praesent risus nisl, semper non imperdiet eget, volutpat vitae orci</div>

The generated iXBRL element in this case will be similar to ESRS 2 folder efrag-20251231.xhtml:

<ix:nonNumeric
name="esrs:DisclosureOfReasonsWhyScopeOfConsolidationIsNotSameAsForFinancialStatementsExpl
anatory" id="fact-4"contextRef="c-1" escape="false" >
DisclosureOfReasonsWhyScopeOfConsolidationIsNotSameAsForFinancialStatementsExplanatory">
Praesent risus nisl, semper non imperdiet eget, volutpat vitae orci </ix:nonNumeric>

The HTML terminology of this chapter is based on developer.mozilla.org/en-US/docs/Learn and developer.mozilla.org/en-US/docs/Web/CSS/Reference and https://developer.mozilla.org/en-US/docs/Web/CSS/Using_CSS_custom_properties

Along this document, the explanations are based in the HTML <div> element for simplicity, but the use of style properties in any other HTML element is also valid.

The xmlns prefix esrs: is omitted, as redundant. This converter will set esrs: when necessary.

The required information for creating the XBRL elements should be provided as a list of "proprietary" property:value; as style attribute HTML. Eg: style=" --conix-concept:DisclosureOfReasons; "

Please use colon ":" as separator between property and value, and semicolon";" after the value

If case of the value does not exist, use "null" as foo/void value: ---conix-default:null;

The properties used by this converter always starts by the prefix –conix- with the syntax:

--conix-propierty:valueofpropierty; (unique valueofproperty)

--conix-propierty:'valueofpropierty valueofpropierty'; (list of several valueofproperty, including space/s as separator among them)

The following characters have a special meaning in CSS: !, ", #, $, %, &, ', (,), *, +, ,, -, ., /, :, ;, <, =, >, ?, @, [, \,], ^, `, {, |, }, and ~. Please use escape characters. See mathiasbynens.be/notes/css-escapes

List of conix-XBRL properties:

--conix-concept:ESRS_concept;   From the Taxonomy Illustrated

--conix-dimension:'ESRS_Axis ESRS_Member';   Axis and Member from Taxonomy Illustrated

--conix-dimension:'ESRS_TypedAxis valueofMember';   Typed Axis from Taxonomy Illustrated

--conix-value:XBRLexplicitvalue;   See :XBRLexplicitvalue paragraph

To be declared when different from the default:

--conix-period:'YYYY-MM-DD YYYY-MM-DD';   startDate and endDate, or only Instant

--conix-scale:numberofhiddenzeros;   6 for millions, 3 for thousands, 0 for units and so on

--conix-transformation:XBRLregistry;   See Transformations paragraph.

--conix-unit:EUR;   ISO 4127 notation

--conix-lang:HTMLlangattribute;   See gist.github.com/JamieMason/3748498

List of default conix-XBRL properties, to be declared before any other conix-XBRL property:

This converter requires an explicit declaration of defaults, before the normal declarations of –conix-attributes. For instance, the LEI of the entity, main period of report, language and so on.

The declaration of defaults is detected when the HTML element includes in the style the reserved attribute "---conix-default:'Name of the company';" as in:

<div style="—conix-default'Name of the company';   --conix-period:'YYYY-MM-DD YYYY-MM-DD'; "></div>

The defaults to be mandatorily declared in the first style="—conix-default…." are

--conix-value:LegalEntityIdentifier;   Invariant in report. e.g. 529900T8BM49AURSDO55

--conix-period:'YYYY-MM-DD YYYY-MM-DD';   Main period, as '2023-01-01 2023-12-31'.

The endDate (2323-12-31) is used as default for concepts requiring only Instant.

The defaults to be optionally declared are:

--conix-scale:numberofhiddenzeros;   Default 6. Scale applicable to *monetary type* concepts only.

--conix-unit:EUR;   Default EUR for amounts with monetary component.

--conix-transformation:XBRLregistry;   Default 'num-comma-decimal   date-month-day-year'

--conix-lang:HTMLlangattribute;   Default en-GB See gist.github.com/JamieMason/3748498

Transformations: Dot-Decimal, Comma-Decimal, Scale, Date:

Amount transformations:

XBRL process internally the figures as digits with no scale (units) and a dot "." character between the integer and the fractional parts, as in **1234.56**

However, HTML may use comma "," instead of dot "." as separator, and the opposite for thousands character, as in **1.234,56**

For disambiguation, it is used:

- o   --conix-transformation:num-dot-decimal;   (most usual)
- o   --conix-transformation:num-comma-decimal;   (most usual)
- o   --conix-transformation:num-unit-decimal;
- o   --conix-transformation:num-comma-decimal-apos;
- o   --conix-transformation:num-dot-decimal-apos;
- o   --conix-transformation:num-unit-decimal-apos;

Amount sign:

Note in XBRL the convention for negative sign is quite special. The sign in XBRL is an attribute of the XBRL element, and the graphic representation of the sign character/s must be placed outside the XBRL element.

This converter already takes care of the necessary repositioning of sign charter/s when generating XBRL. Only the sign characters minus "-" and brackets "()" are recognized by this converter. Color style is not recognized as sign by this converter.

Input HTML file   Generated XHTML XBRL file

HTML: <div…>**-123**</div>   XBRL: <div…>**-**<ix:nonFranction…>**123**</ix:nonFraction></div>

HTML: <div…>**(123)**</div>   XBRL: <div…>**(**<ix:nonFranction…>**123**</ix:nonFraction>**)**</div>

Amount scale:

XBRL process internally the numbers with no scale (units). Numbers of type monetary are usually presented as millions or as thousands in HTML. Numbers of type percent (%) in XBRL are fraction of one, not fraction of one hundred, being scale=-2 by default. Be careful with the scale of physical magnitudes, as energy or mass.

Representing **1** million: <div style='--conix-concept:ESRS_concept; --conix-scale:6;'">**1**</div>

Dates:

XBRL process internally a date as YYYY-MM-DD. The HTML representation of a date depends on country's tradition. The month can be numeric or a list of natural languages ISO 639, being lang=bg, cs, cy, da, de, el, en, es, et, fi, fr, hi, hr, it, nl, no, pl, pt, ro, sk, sl, sv.

See full description at XBRL transformation registry. Day, month and year must be explicitly declared in this converter. Allowed combinations:

- o --conix-transformation:date-day-month-year;   (most usual, as DD MM YYYY)
- o --conix-transformation:date-month-day-year;
- o --conix-transformation:date-year-month-day;
- o --conix-transformation:date-day-monthname-year-lang;   (most usual, see above lang=)
- o --conix-transformation:monthname-day-year-en;
- o --conix-transformation:year-day-monthname-lv;
- o --conix-transformation:year-monthname-day-hu;
- o --conix-transformation:year-monthname-day-lt;

XBRLexplicitvalue: Boolean, Enumeration, EnumerationSet…

See ESEF Reporting Manual 2.4.1 and ESRS Set 1 XBRL Taxonomy – Explanatory Note

See https://www.xbrl.org/Specification/inlineXBRL-transformationRegistry/REC-2022-02-16/inlineXBRL-transformationRegistry-REC-2022-02-16.html

Some concepts, particularly enumerations (one or several elements from a XBRL list) and boolean (true/false), may have completely different XBRL representation than the corresponding HTML narrative description, oriented to humans.

The approach on iXBRL specification and on ESRS is a special type of "transformation", basically providing a :XBRLexplicitvalue in XBRL from a different value in HTML.

Fixed value XBRL transformations:

Example at ESRS 2 [BP-1] General basis for preparation of sustainability statements

Concept:ScopeOfConsolidationOfConsolidatedSustainabilityStatementIsSameAsForFinancialStatements

HTML value: Lorem ipsum dolor sit amet, consectetur adipiscing elit…

XBRL value: True

The notation in these cases is the property —cenix-value:XBRLvalue with the XBRL transformed value. Eg:

<div style="--cenix-concept:ScopeOfConsolidationOfConsolidatedSustainabilityStatementIsSameAsForFinancialStatements; —cenix-value:fixed-true;">Lorem ipsum dolor sit amet, consectetur adipiscing elit…</div>

—cenix-value:fixed-true ;	The value is interpreted as a Boolean true in XBRL
—cenix-value:fixed-false;	The value is interpreted as a Boolean false in XBRL
—cenix-value:fixed-zero ;	The value is interpreted as a zero digit in XBRL
—cenix-value:fixed-empty;	The value is interpreted as a empty string in XBRL

Enumeration and enumerationSet XBRL transformations:

The ESRS taxonomy has a number of predefines values (enumeration), to choose one or several among them. As the list of XBRL enumerations is very long, it is in a separate document.

A HTML concept contains a narrative. However, in XBRL, each enumerated value is used in XBRL as a Boolean flag (set or not set),

Examples at ESRS 2 [BP-1] General basis for preparation of sustainability statements

<u>Concept</u>:BasisForPreparationOfSustainabilityStatement

<u>HTML value</u>: Lorem ipsum dolor sit amet, consectetur adipiscing elit…. at interdum nulla.

<u>XBRL value</u>:IndividualMember

In this example, the enumerations are defined in the role-999102 as:

- BasisForPreparationOfSustainabilityStatementMember
  - IndividualMember
  - ConsolidatedMember

The notation in this case is the property —cenix-value with the enumeration value. Eg:

<div style="--cenix-concept: BasisForPreparationOfSustainabilityStatement; —cenix-value:IndividualMember;"> …………………………………………………………………..<div>

<u>Concept</u>:ListOfNotMaterialTopics

<u>HTML value</u>: List of not material topic(s) and explanation for negative materiality assessment….

<u>XBRL value</u>:'ESRSE2PollutionMember ESRSE3WaterAndMarineResourcesMember ESRSE4BiodiversityAndEcosystemsMember ESRSE5ResourceUseAndCircularEconomyMember ESRSS2WorkersInValueChainMember ESRSS3AffectedCommunitiesMember ESRSS4ConsumersAndEndusersMember'

In this example, the enumerations are defined in the role-999129 as:

- TopicTopicUnspecifiedMember
  - ESRSS4ConsumersAndEndusersMember
  - ESRSS3AffectedCommunitiesMember
  - OtherSustainabilityMatterMember
  - ESRSG1BusinessConductMember
  - ESRSE1ClimateChangeMember
  - ESRSE3WaterAndMarineResourcesMember
  - ESRSE2PollutionMember
  - ESRSE5ResourceUseAndCircularEconomyMember
  - ESRSE4BiodiversityAndEcosystemsMember
  - ESRSS2WorkersInValueChainMember
  - ESRSS1OwnWorkforceMember

The notation in this case is the property —cenix-value with the list of enumeration values. Eg:

<div style="--cenix-concept:ListOfNotMaterialTopics; —cenix-value:'ESRSE2PollutionMember ESRSE3WaterAndMarineResourcesMember ESRSE4BiodiversityAndEcosystemsMember ESRSE5ResourceUseAndCircularEconomyMember ESRSS2WorkersInValueChainMember ESRSS3AffectedCommunitiesMember ESRSS4ConsumersAndEndusersMember';">
List of not material topic(s) and explanation for negative materiality assessment….</div>

textBlock nesting.

See ESEF Reporting Manual 1.9.1 and ESRS Set 1 XBRL Taxonomy – Explanatory Note

A concept of type textBlock is a *narrative disclosure or its related XBRL element that is not restricted in any way. It can contain an unstructured sentence of formatted text, multiple paragraphs or pages, images, tables, diagrams, etc.*

It is quite common than a textBlock XBRL concept includes other XBRL concepts inside.

Example at ESRS 2 [BP-1] General basis for preparation of sustainability statements

- esrs:DisclosureOfGeneralBasisForPreparationOfSustainabilityStatementExplanatory
    - esrs:BasisForPreparationOfSustainabilityStatement
    - ………….
    - esrs:ReportingPeriodStartDate
    - esrs:ReportingPeriodEndDate

The HTML implementation is based on standard HTML nesting structure, as follows:

<div style="–conix-concept:DisclosureOfGeneralBasisForPreparationOfSustainabilityStatementExplanatory">

<div style="--cenix-concept: BasisForPreparationOfSustainabilityStatement; —cenix-value: IndividualMember;">…………………………………</div>

<div style="--cenix-concept:ReportingPeriodStartDate;">01-01-2025</div>

<div style="--cenix-concept:ReportingPeriodEndDate;">31-12-2025</div>

</div>

HTML properties

The minimum basic HTML *content* is the text inside of the HTML element <body> *content* </body>, even without HTML decorative styles.

For basic ESRS reports, as the examples published by EFRAG, the number of different HTML styles is quite limited. The HTML style decoration would be simplified to a minimum. This converter has defined HTML properties quite similar to the required for EFRAG HTML examples. Using such HTML properties, no other HTML styles in the *content* of the input file are required.

Notwithstanding, for full XHTML input files with all the styles and decorations, this step is skipped.

The first step is reading the basic **content** and then generate a full XHTML file (when required).

May be than part of the HTML decorative elements would be present, as for bold text. These HTML decorative elements are maintained.

List of conix-HTML properties:

--conix-TOC:'stylevalues';   Entry for the Table Of Contents. Starts in new page.

--conix-Heading:'stylevalues';   Header of paragraphs. Starts with two lines of margin.

--conix-Paragraph:'stylevalues';   Starts in new line.
                                              Default after --conix-TOC or --conix-Header

--conix-Text:'stylevalues';   Just continue in the same the line.
                                              Default after --conix-Paragraph or --conix-Text

If none of the above is used, the text will continue in the same line than the previous *content*. If the previous content is a --conix-TOC or --conix-Header, then the --conix-Paragraph is set by default.

--conix-pageheader:'stylevalues'   See pageheader paragraph

--conix-pagefooter:'stylevalues'   See pagefooter paragraph,

--conix-table:'table tr td /table'   See below Tables paragraph

<u>stylevalues</u>

This converter recognizes three types of styletype values

99px   Font size, with this format (integer with *px* as tailing characters)

#000000   Font color, with this format (six hexadeciomal with # as leading character)

Open Sans   Font family (when nor leading as # and neither tailing as *px*).

<u>stylevalues defaults</u>

The first occurrence of each conix-HTML property sets the defaults values of such property. It is suggested to place the defaults in the first (or only) style="–coni-default   " placeholder. For the properties never declared (font size, font color or font family), the defaults from factory are:

--conix-TOC:'21px #2F5496 Open Sans';   Font size, color, family (default as EFRAG)

--conix-Heading:'17px #2F5496 Open Sans';   Font size, color, family (default as EFRAG)

--conix-Paragraph:'14px #000000 Open Sans';   Font size, color, family (default as EFRAG

--conix-Text:'14px #000000 Open Sans';   Font size, color, family (default as EFRAG

--conix-pageheader:'10px #44546A Nofirstpage Open Sans';   See pageheader paragraph

--conix-pagefooter:'10px #44546A Nofirstpage Open Sans';   See pagefooter paragraph

Tables

This converter helps in building standard HTML tables using as an option a simplified approach. The approach is including only the start and the end of the table, as well as the start column or start of new row. It is not necessary determine explicitly the end of each cell, as this converter automatically closes the column when detects a new column, a new row, or the end of table. The tables cannot be nested.

The converter transforms this simplified approach into a standard HTML table.

Example. Simplified notation:

```
<div style="--conix-table:table;"><div>Loren
<div style="--conix-table:td;"></div>Ipsum
<div style="--conix-table:tr;"></div>dolor sit amet
<div style="--conix-table:td;"></div>consectetur adipiscing elit
<div style="--conix-table:/table;"><div>
```

Generated HTML standard notation:

```
<table>
        <tr>
                <td>Loren</td>
                <td>ipsum</td>
        <tr>
                <td>dolor sit amet</td>
                <td>consectetur adipiscing elit</td>
        </tr>
</table>
```

Conver page and Table of Concepts.

The cover page is optional and should be set with standard HTML styles.

If the cover page is declared, this converter will generate the Table of Contents afterwards; otherwise, the Table of Contents will be omitted.

Input file example

Based on ESRS 2 [BP-1] General basis for preparation of sustainability statements.

See file Specifications-2.html   for details