

22nd XBRL EUROPE DAY in Rome

7-8th FEBRUARY 2019

Hosted by



UNIONCAMERE



Transformation Registry v4

- Mark Goodhand
- XBRL Base Specification Working Group

The Inline XBRL Transformation Registry

- Company accounts are human-readable
- Must transform to machine-readable types expected by XBRL, e.g.
 - 25 September 2018
 - → 2018-09-25

Home > WESTERN COMPUTER GROUP LIMITE... > iXBRL mrg@corefiling.com

We have nothing to report in respect of the following matters where the Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept, or returns adequate for our audit have not been received from branches not visited by us; or
- the financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

Responsibilities of directors

As explained more fully in the directors' responsibilities statement, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at: <http://www.frc.org.uk/auditorsresponsibilities>. This description forms part of our auditor's report.

Use of our report

This report is made solely to the company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Paul Williams (Senior Statutory Auditor)
for and on behalf of Davies Williams

25 September 2018

Chartered Accountants
Statutory Auditor

21 St Andrews Crescent
Cardiff
CF10 3DB

> Hide Tag

2018-09-25

Concept	Date of auditor's report
Dimensions	(0 non-defaulted)
Entity	1850885
Period	2018-01-02
Value	2018-09-25

Validation Discussions

There are no issues associated with this tag.

- 5 -

A date transform

```
<ix:nonNumeric contextRef="context"  
name="pres:BalanceSheetDate"  
format="ixt:datedaymonthen">
```

31 March 2008

```
</ix:nonNumeric>
```

```
<eg:BalanceSheetDate contextRef="c1">
```

2008-03-31

```
</eg:BalanceSheetDate>
```

Existing transforms

- 31 transforms in [TR3](#)
- Support iXBRL filing mandates in UK, Ireland, Denmark, Sweden, US, Japan, India and South Africa



TR3 language-neutral numbers & booleans

Transform	Input	Output
<i>booleanfalse</i>	AnyData	false
<i>booleantrue</i>	AnyData	true
<i>zerodash</i>	-	0
<i>nocontent</i>	AnyData	
<i>numcommadecimal</i>	123.456,78	123456.78
<i>numdotdecimal</i>	123,456.78	123456.78
<i>numunitdecimal</i>	• 3,000円5銭 • 3000 dollars 5 cents • 3000 euros 5 cents	3000.05

TR3 language-neutral dates

Transform	Input	Output
<i>datemonthday</i>	2/8	--02-08
<i>datedaymonth</i>	8/2	--02-08
<i>datemonthdayyear</i>	2/8/19	2019-02-08
<i>datedaymonthyear</i>	8/2/19	2019-02-08
<i>dateyearmonthday</i>	19/2/8	2019-02-08
<i>datemonthyear</i>	2/19	2019-02

TR3 language/region specific date transforms

Order	English	Danish	Japanese	Indian
MD	<i>datemonthdayen</i>			
DM	<i>datedaymonthen</i>	<i>datedaymonthdk</i>		
DMY	<i>datedaymonthyearen</i>	<i>datedaymonthyeardk</i>		<i>datedaymonthyearin</i> <i>calindaymonthyear</i>
MDY	<i>datemonthdayyearen</i>			
YMD			<i>dateerayearmonthdayjp</i> <i>dateyearmonthdaycjk</i>	
YM	<i>dateyearmonthen</i>		<i>dateyearmonthcjk</i> <i>dateerayearmonthjp</i>	
MY	<i>datemonthyearen</i>	<i>datemonthyeardk</i>		<i>datemonthyearin</i>

- English has transforms for British (8 Feb 2019) and American (Feb 8 2019) styles
- There are also two transforms for Indian numbers: *numunitdecimalin* and *numdotdecimalin*
- Danish transforms also work in Sweden, as the first three characters of the month names are the same:
 - **(jan|feb|mar|apr|maj|jun|jul|aug|sep|okt|nov|dec)**

General principles

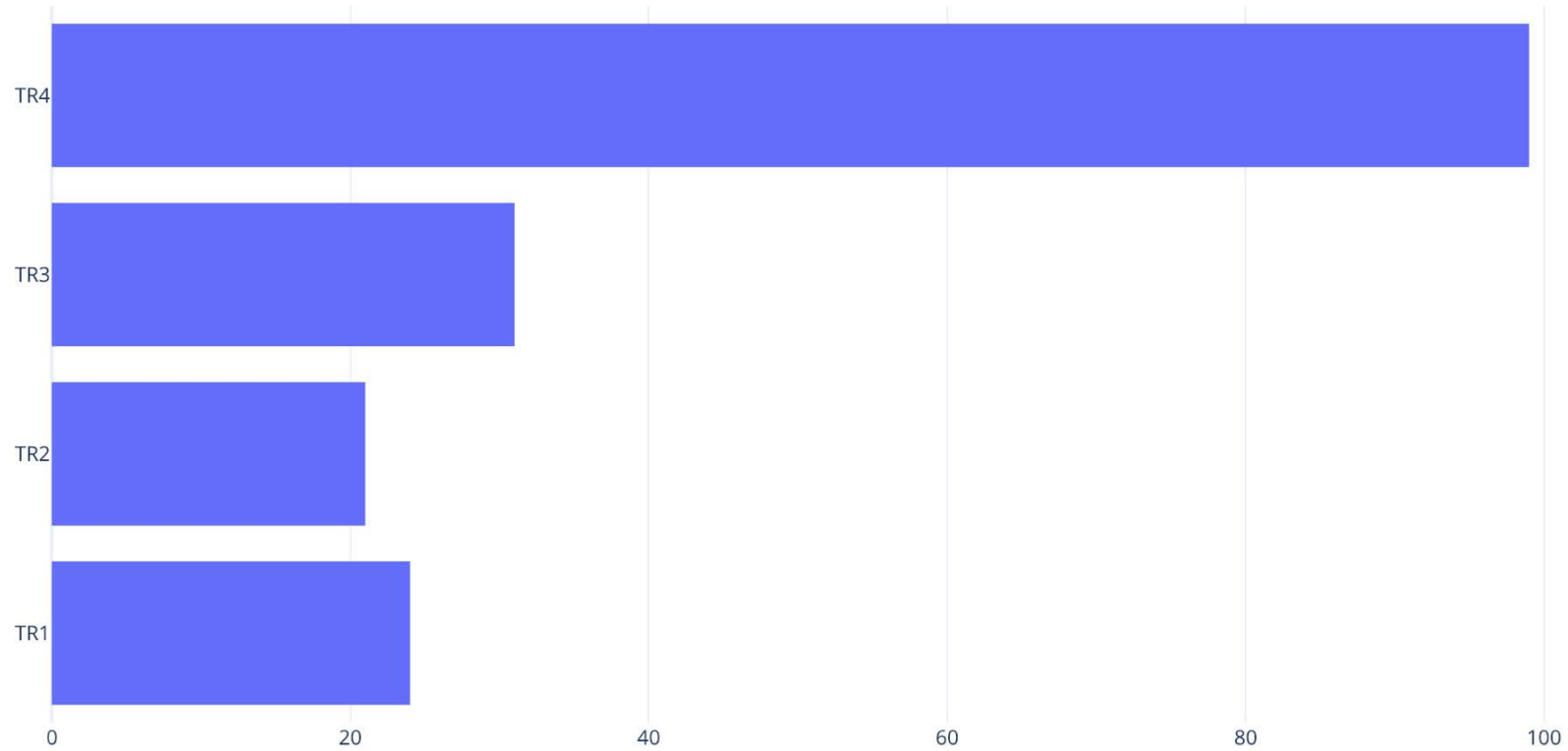
- Trust filers to tag responsibly
 - Transforms are permissive (whenever unambiguous)
 - Minimise the number of transforms
 - *dateyearmonthday* allows Japanese 'wide numbers'
 - 2 0 1 0 / 5 / 3 1
 - *datedaymonthen* allows unicode superscripts
 - 1st of August
 - *numunitdecimal* allows comma-dot, dot-comma & arbitrary currency names
 - 3 deciduous forests 99 leaves
-

The ESEF mandate

“The European Single Electronic Format is the electronic reporting format in which issuers on EU regulated markets shall prepare their annual financial reports from 1 January 2020.” – esma.europa.eu

Austria	Czech Republic	Germany	Latvia	Poland	Spain	<i>Iceland</i>
Belgium	Denmark	Greece	Lithuania	Portugal	Sweden	<i>Liechtenstein</i>
Bulgaria	Estonia	Hungary	Luxembourg	Romania		<i>Norway</i>
Croatia	Finland	Ireland	Malta	Slovakia		
Cyprus	France	Italy	Netherlands	Slovenia		<i>United Kingdom?</i>

68 new transforms



New languages (DMY)

	datedaymonth	datedaymonthyear	datemonthyear
Bulgarian (bg)	8 февруари	8 февруари 2019 г.	февруари 2019 г.
Czech (cs)	8. února	8. února 2019	února 2019
German (de)	8. Februar	30. Februar	Februar 2019
Greek (el)	8 Φεβρουαρίου	8 Φεβρουαρίου 2019	Φεβρουαρίου 2019
Spanish (es)	8 de febrero	8 de febrero 2019	febrero 2019
Estonian (et)	8. veebruar	8. veebruar 2019	veebruar 2019
Finnish (fi)	8. helmikuuta	8. helmikuuta 2019	helmikuuta 2019
French (fr)	8 février	8 février 2019	février 2019
Croatian (hr)	8. veljače	8. veljače 2019	veljače 2019
Italian (it)	8 febbraio	8 febbraio 2019	febbraio 2019

New languages (DMY)

	datedaymonth	datedaymonthyear	datemonthyear
Dutch (nl)	8 februari	8 februari 2019	februari 2019
Norwegian (no)	8. februar	8. februar 2019	februar 2019
Polish (pl)	8. lutego	8. lutego 2019 r	luty 2019
Portuguese (pt)	8 de fevereiro	8 de fevereiro de 2019	fevereiro de 2019
Romanian (ro)	8 februarie	8 februarie 2019	februarie 2019
Swedish (se*)	8. februari	8. februari 2019	februari 2019
Slovak (sk)	8. február	8. február 2019	február 2019
Slovene (sl)	8. februar	8. februar 2009	februar 2019
<i>Roman</i>	8 II	8 II 2009	II 2009

* We generally use ISO 639-1 codes, but Danish and Swedish are currently wrong (dk->da, se->sv)

New languages (YMD, YDM)

	datemonthday	dateyearmonthday	dateyearmonth
Hungarian (hu)	február 8	2019. február 8	2019. február 8
Lithuanian (lt)	vasaris 8 d	2019 m. vasaris 8 d	2019 m. vasaris

	datedaymonth	dateyeardaymonth	dateyearmonth
Latvian (lv)	8. februāris	2019. gada 8. februāris	2019. gada februāris

Languages not covered

- Icelandic
 - Maltese
 - Irish (*Gaeilge*)
 - Dialects (e.g. Austrian German)
 - We believe these are covered by the main language
 - The only known, supported variation is **Jän** for *datedaymonthyearde*
 - Many more, but hopefully none used for ESMA filing!
-

Complexities

- Mixture of character sets (e.g. Unicode Latin & Unicode Greek)
 - Diacritics aren't always used (e.g. *FEVRIER*)
 - In some languages, the spelling of month names varies by context:
 - Associative: 'The beginning of February 2019'
 - **Czech:** února
 - Nominative: 'February 2019 profits'
 - **Czech:** únor
 - Locative: 'The company was founded in February 2019'
 - **Czech:** únoru
-

Implementation

- Each transform has an output type
- Regular expressions constrain allowed inputs
- Conformant processors have code to transform valid inputs to expected outputs

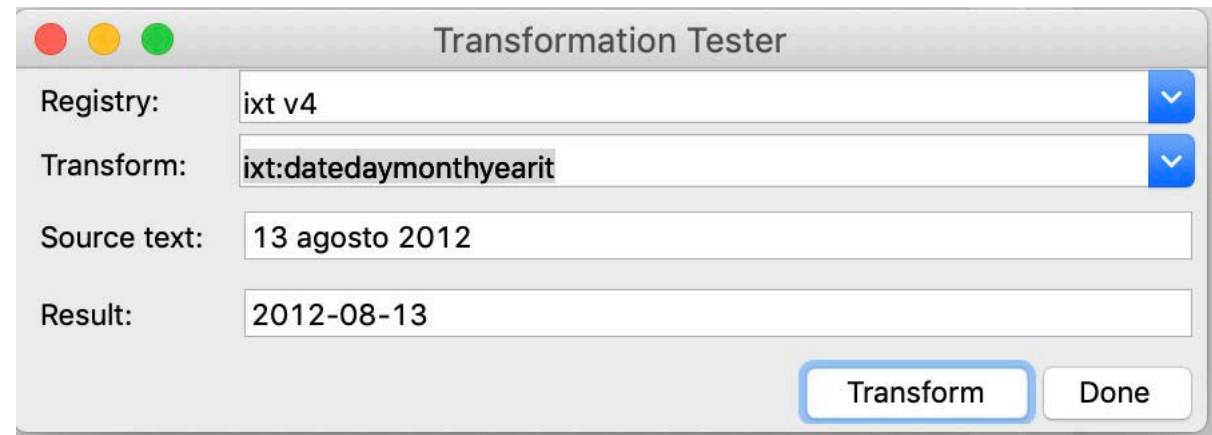
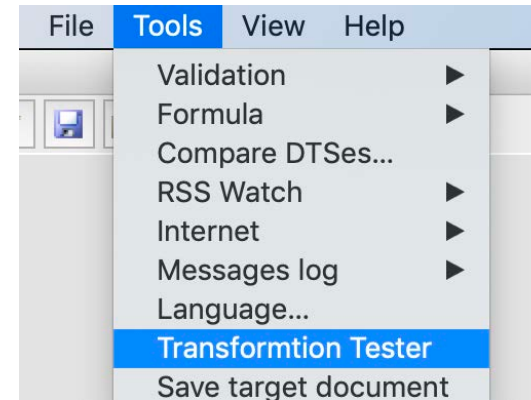
```
<xs:simpleType name="datemonthyearbgType">
  <xs:annotation>
    <xs:documentation>
      Bulgarian date in the order "month year". Accepts months in full or
      abbreviated form. Accepts 1, 2 or 4 digits for year. Requires a non-
      numeric separator.
    </xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string">
    <xs:whiteSpace value="collapse"/>
    <xs:pattern value="(ян|фев|мар|апр|май|маи|юни|юли|авг|сеп|окт|ное|дек|ЯН|ФЕВ|
    МАР|АПР|МАЙ|МАИ|ЮНИ|ЮЛИ|АВГ|СЕП|ОКТ|НОЕ|ДЕК|Ян|Фев|Мар|Апр|Май|
    Маи|Юни|Юли|Авг|Сеп|Окт|Ное|Дек)[^0-9]+([0-9]{1,2}|[0-9]{4})[0-9]*"/>
  </xs:restriction>
</xs:simpleType>
<!-- Dates written out in Czech. -->
<xs:simpleType name="datedaymonthcsType">
  <xs:annotation>
    <xs:documentation>
      Czech date in the order "day month". Accepts 1 or 2 digits for day.
      Accepts months in full or abbreviated form. Requires a non-numeric
      separator. The schema does not enforce valid day of month (e.g., it
      accepts "30. února").
    </xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string">
    <xs:whiteSpace value="collapse"/>
    <xs:pattern value="[0-9]{1,2}[^0-9]+(ledna|
    února|unora|března|brezna|dubna|května|kvetna|června|cervna|
    července|cervence|srpna|září|zari|října|rijna|listopadu|prosine|led|
    úno|uno|bře|bre|dub|kvě|kve|čvn|cvn|čvc|cvc|srp|zář|zar|
    říj|rij|lis|pro|LEDNA|ÚNORA|UNORA|BŘEZNA|BREZNA|DUBNA|KVĚTNA|KVTNA|
    ČERVNA|CERVNA|ČERVENCE|CERVENCE|SRPNA|ZÁŘÍ|ZARI|
    ŘÍJNA|RIJNA|LISTOPADU|PROSINCE|LED|ÚNO|UNO|BŘE|BRE|DUB|KVĚ|KVE|ČVN|CVN|
    ČVC|CVC|SRP|ZÁŘ|ZAR|ŘÍJ|RIJ|LIS|PRO|Ledna|
    Února|Unora|Března|Brezna|Dubna|Května|Kvetna|Června|Cervna|
    Července|Cervence|Srpna|Září|Zari|Října|Rijna|Listopadu|Prosine|Led|
    Úno|Uno|Bře|Bre|Dub|Kvě|Kve|Čvn|Cvn|Čvc|Cvc|Srp|Zář|Zar|
    Říj|Rij|Lis|Pro)\.?" />
  </xs:restriction>
</xs:simpleType>
```


Conformance suite

ixt:datemonthyearde	xs:gYearMonth	MÄR 2008	2008-03	valid
ixt:datemonthyearde	xs:gYearMonth	märz 2008	2008-03	valid
ixt:datemonthyearde	xs:gYearMonth	MAR 2008	2008-03	valid
ixt:datemonthyearde	xs:gYearMonth	marz 2008	2008-03	valid
ixt:datemonthyearde	xs:gYearMonth	MAER 2008	2008-03	valid
ixt:datemonthyearde	xs:gYearMonth	maerz 2008	2008-03	valid
ixt:datemonthyearde	xs:gYearMonth	Augusts 2012	2012-08	valid
ixt:datemonthyearde	xs:gYearMonth	August 2012	2012-08	valid
ixt:datemonthyearde	xs:gYearMonth	August, 2012	2012-08	valid
ixt:datemonthyearde	xs:gYearMonth	August/2012	2012-08	valid
ixt:datemonthyearde	xs:gYearMonth	Januar - April 1969	1969-01	valid
ixt:datemonthyearde	xs:gYearMonth	August2012	2012-08	valid
ixt:datemonthyearde	xs:gYearMonth	August 203		invalid
ixt:datemonthyearde	xs:gYearMonth	Okt. 1 0 6 6		invalid
ixt:datedaymonthel	xs:gMonthDay	25 Σεπ.	--09-25	valid
ixt:datedaymonthel	xs:gMonthDay	25 σεπ.	--09-25	valid
ixt:datedaymonthel	xs:gMonthDay	25 Σεπτεμβρίου	--09-25	valid
ixt:datedaymonthel	xs:gMonthDay	25 Σεπxxxxxxxx	--09-25	valid
ixt:datedaymonthel	xs:gMonthDay	13 Αυγούστου	--08-13	valid
ixt:datedaymonthel	xs:gMonthDay	13 ΣΕΠ	--09-13	valid

Open source transformation tester

- Arelle® plugin “transforms/tester”
- Select registry (ixt v1-4, ixt-sec)
- Select or enter transform
- Enter source text
- Press “transform”
- Result (or error code)



Please review!

- <https://specifications.xbrl.org/work-product-index-inline-xbrl-transformation-registry-4.html>
 - Check the transforms for your country
 - let us know who needs to sign off on them
 - contribute test cases
 - TR4 will also include:
 - support for decimal numbers without leading zero “.123”
 - support for the new Japanese era name (once known)
 - any additional transforms required for ESEF filing (???)
 - Feedback to spec@xbrl.org
-